

WILLIAMSON SHAFFER

ONE OF THE MORE INTERESTING POSITIONS AT THIS YEAR'S GDC SERIOUS GAMES SUMMIT WAS THE STUFF THAT A GUY CALLED WILLIAM SHAFFER FROM THE UNIVERSITY OF WISCONSIN-MADISON SAID. BEING FRIENDS WITH HENRY JENKINS HE TOLD US WHAT HE BELIEVES MAY CAUSE THE WORLD TO CHANGE TO THINK DIFFERENTLY ABOUT GAMES....

INTERVIEW: PETER KRELL, FOTO: KAY ITTING

David Williamson Shaffer is an associate professor of Learning Science at the University of Wisconsin-Madison and also a game scientist at the Academic Advanced Distributed Learning Co-Laboratory. He has just published a new book, entitled *How Computer Games Help Children Learn*, for which he studied how games can be built that will prepare kids for the life in the digital age.

So games don't teach children how to like cheese?

No. In Wisconsin we would love to make a game that taught kids how to like cheese (laughs).

The issue is that in the United States and in other developed countries, we teach kids basic facts and basic skills. But it's simply not enough to have basic skills to get a modern job in a modern workforce. In this globalized world, basic skills and basic facts can be done by anybody just a mouse click away. Today, to get good jobs, kids need to think in creative and innovative ways.

Challenging kids by having them do complex problems and play computer games is one way to help them to learn innovative

thinking. Computers help do this because they make it possible to build simulations. These could be simulations of an imaginary world or simulations of situations in the real world that are either too difficult or dangerous or expensive for children to do in the real world. A game lets a player live in a simulated world. We can build worlds of adventure and excitement; we can build worlds of violence (and maybe we do that too often). But we can also build worlds where kids have the opportunity to work on real problems and learn how to solve them like people in the real world do.

It turns out that we know a lot about innovation and creativity, and we know that because there are a lot of people who solve problems in the real world don't have routine answers. People like doctors, lawyers, and journalists – and the list goes on and on. These are all people who don't do the same thing over and over again when they come to work each day. Each problem is slightly different and they have to think about it in some new way. We know a lot about how people learn to be creative,

and a lot about how people learn innovative thinking, because we can look at how people learn to do what they do.

In most cases, it turns out that creative and innovative thinking about real world problems comes about when people have the opportunity to work on problems and then step back from their work to talk with mentors and peers. Computer games make it possible to give children the chance to do the same thing. In computer games, kids can work on the kinds of problems that people face in the real world, and also to reflect on – to think about – what it is they are doing. That's what turns play in a game into understanding in the real world.

An example of how games help kids learn is the game *Urban Science*. This is a game where the players become urban planners and redesign their city. In order to do that, they become part of a virtual urban planning firm where they exchange email with other members of the firm who ask them to do certain parts of the planning process, and who then point them at the resources they will need. As part of this game, the players have to

go out into the virtual world and interview stakeholders – people who care about the city – to find out what their issues are, what they like and what they think should be changed: Things like parking, crime, jobs and taxes. Then, they take this information back and work with a geographic information system – a tool that urban planners in the real world use. They look at how the city could change in response to what the stakeholders care about – for instance, what happens if you increase housing or increase the number of retail establishments or increase the number of parking lots. The players come up with a variety of possible plans for the city. They take these plans – which are called preference surveys – back to the stakeholders, and they get feedback about these various options. With that information, the players are able to finalize the redevelopment plan, which they do by creating a 3D model of their proposed plan for the city.

Our research shows that when kids play a game like this, they don't just get better at playing the game. They also get better at solving problems that matter in the real world. The point

in building these games is, of course, not to say that it is necessary for every kid to become an urban planner or to learn about socio-economics and about how a city works. Kids do learn about civics and urban ecology, but the idea of building games like this is to show that you can get kids to think in innovative and creative ways about real problems and prepare them for the kind of thinking – the kinds of skills – that they will need in the future. Games like this show what the future of education can look like.

When you talk about the future of education what do you actually have in mind besides urban planning games?

We developed a number of these games. But the thing to remember is that in the USA or in Germany, everybody we know went to the same kind of school. They went to a kind of school that was invented 100-150 years ago, to prepare kids for life in an industrial economy. We think because everybody we know went to the same school that this is what education has to be like. We have difficulties imagining anything different. In developed countries, we forget

of the value chain. That's what we should be preparing our kids for. The computer already has changed society. But, that same technology that puts a premium on innovative and creative thinking also makes it possible to prepare kids for a world of global competition. Games are one way to do that. My interest is in how to build these games, and then, hopefully, in how to start a conversation about which games we should build and what kids should be doing to prepare for this changed world.

Certainly not all games will happen to be education?

That's like asking whether all books are good for education. There are lots of good books and lots of bad books. There are also some very good books that are terrible for kids! The same thing is true for games. There are some really good games, and there are some really bad games, and there are excellent games that are not appropriate for kids. What interests me is not to focus on bad games; there will always be some bad games. What I'm interested in is how we can build really good games, what they look like, and what that might mean for our education system.

textbook knows. Your job is to find where that right answer is and produce it when somebody asks you for it.

That's not useful if you work in a high-tech economy. Lawyers and doctors, and anyone who solves problems complex problems in the real world has a particular way of making decisions and justifying actions. If you have to go to courtroom, you listen to what the lawyer says about what is a good decision, or what is the right thing to do. Because the lawyer knows the rules of that game.

The point is that you look for different evidence and you make different decisions depending on how it is that you come to a problem. Games give the player the opportunity to experience different ways of thinking. The point of a game like Urban Science isn't to make everybody an urban planner, but to show players that this is a way of thinking about cities or politics or decisions that can be useful. Game let us give kids these toolkits, these ways of thinking. These epistemologies are like glasses you put on; they color the world in a particular way, and that makes you see things from a particular point of view.

I'm not a philosopher, so I'll leave it to the philosophers to make that distinction. The important thing when we talk about epistemology is to recognize that what schools currently do is to teach us a particular way of thinking. And that way of knowing isn't really the right way of thinking about knowledge in a digital age. In a society that doesn't have books, in a preliterate society, an important part of being well educated is being able to remember things because you don't have writing to store information for you.

Like in Rome for instance where they had the memo technique in order to memorize the names of many thousands of inhabitants?

Yes! That is a good example. In an age of printed letters, in an age of books, it has been important for us to learn what to do with that knowledge, to be able to find it, to be able to transfer information and to give it back to somebody in new forms. Well, in the computer age now, we don't even need books to remember things, because we have Google. But the more important issue is that computers actually can take information and transform it for us. We can make computers do parts of the thinking that we would otherwise have to do.

So, learning to think in the computer age doesn't mean learning basic facts and basic skills. It's means learning to work with machines that can solve parts of the problem for us. What young people need to do is to learn about how we organize these resources in order to solve complex problems that they can not solve on their own. It turns out that there are lots of people in the world who do that. They are the professionals who work with these tools, so we don't need to reinvent the wheel! We already know a lot about what it is that kids will need to be able to do in developed countries. When we look around us, we have good

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MARTINE PERRY

that the kind of schools we have now prepares kids for a kind of work that doesn't exist in these countries anymore. We don't live in an industrial economies for the most part, we live in knowledge economies. Industrial jobs have gone overseas.

Developed countries need workers who can think about real problems, and think in non-standard ways, so we can develop more things in the high end

You talk also about epistemic also, what do you precisely have in mind?

Epistemology is a Greek word and it means the study of knowledge – how we come to know what we know. The reason why epistemology matters is that our schools are all basically built on the same epistemology. That epistemology is this: You don't know what the right answer is; only your teacher or the

On the Humboldt University in Berlin were people like Hegel and other big philosophers. There is a group called Helmholtz centre. They are dealing with epistemic: Our basics epistemic are the letters the numbers and the images. Both are "Bildschirmzahl" in German. You told about related systems somehow and I wondered where is the atomic epistemic is?

models for what it is we need to do for kids.

I think you must be optimistic about the society and the post-traumatic influence by the 9/11 event. Systems may be taken down or the electricity maybe switched off. Don't you think we need to teach the kids how to survive without technology?

Well, that is an interesting question. There is a balance to be struck. We should make it clear that it's important for kids to have a balance of experiences. It's important for them to have some time outside playing ball, and it's important to have time with their friends doing nothing, and it's important for them to do arts and crafts, to read books, watch movies, and so on. But it's also important for them to use the tools of the digital age. All of these matter, but it is a question of balance. How much time do we want to spend preparing kids for a world that doesn't yet exist at the expense of preparing them for a world that does exist? I think where we are right now is probably not the right place in that balance.

That we talking about complexity management tools maybe conceive the regale in some games that exist in the market space. Than we have a high amount of data. We are still stealing through an interface which is still two dimensional.

That's a very good question. One great aspect of commercial games is that they provide an opportunity to explore more virtual metaphors for information organization. It's also the case that professionals have – in many cases – much richer metaphors. Many people who work on complex problems don't sit at their desks. One thing we absolutely need to do is to figure out the right interfaces for the information that we use, and games are one really good way to think about that. How does a person in the real world use their tools?

Are we going back to the pioneering days of Douglas Engelbart? I think its time for refreshing these times...

I think that the power of the computer is that we are still obeying Moore's Law. Computational power continues to grow, and at some point, a large enough quantity of change actually becomes a quality of change. I'm not an expert in user interface design, so others might speculate more specifically, but I think that as we get more and more powerful computers, thinking and rethinking the best way to interact with them is important.

I could imagine that standards are ready like within the marketplace are very important?

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How important for your conception would be voice recognition software?

A lot of the work I do in my research is to some extent device-independent. By that I don't mean that we don't actually have software developed for one platform or another. We do. But technological issues are less important than pedagogical issues and epistemological issues.

The harder part for us is not necessarily implementing something in hardware and software, the harder part for us is figuring out what is worth implementing.

How would you develop an idea to overcome the crisis of serious gaming? Because it seems to be so determined by the use of the military...

One of my advisors, Seymour Papert, once famously said, "what can be done is a technological question, what should be done is a pedagogical question, and what will be done is a political question." I have some skill with the technology; I have a fair

amount of pedagogical skill, and I claim no expertise in politics. Ultimately, we have to recognize that serious games need to play a role in education. That means rethinking what we do in schools and hopefully – as part of that – create a market for more of these games. But I see my role as creating examples of what is possible if we take full advantage of the power of computer games.

We hope you not going to be like Giordano Bruno. Back in the inquisition days who said the earth was round.

Of course not. I'm happy to be part of those discussions. But I see my role in providing well-researched and well-studied proofs of concept. What I am doing in my work is showing what the potential of games can be – I make the argument that we need to do something different, and games are a way to do something different.

There is a difference between recognizing that you want to be part of a larger discussion and what your strengths are. I am happy to be part of a larger group who brings serious games to reality and works to change the educational movement. But I also understand that there are certain things I do well. I think it is better when I am focused on the things that I do well, but working with other people who are thinking about other parts of the issues and problems.

Are you also connected with the MIT?

Sure. I got my graduate degree from MIT and I know still lots of people there.

I could imagine at a point the political discussions will be most certainly unavoidable because of what you are doing.

I am not afraid of political discussions. I'm happy to participate in them, but I don't see that as my area of greatest expertise.

Where is the border between simulation or operation system and training environment?

The argument that I make in *How Computer Games Help Children Learn* is that essentially every computer game is a simulation. Every game has at its core a simulated world; for example, in chess you have a simulation of a battlefield. So the simulation is always at the heart of any game. A game gives players particular roles to play in that simulated world. And it gives them rules they have to follow. When you play black against white in chess there are certain things that you do.

Aren't we following a very Eurocentric perspective, or maybe are on the perception of the computers base is used for generating ideas to steer the world like complexity management tools and we don't know so much about other cultures like for instance Africa or the orient?

Well, now that I have some understanding of how games work in an American cultural context, one of the things I want to do is to work in other countries. It is very important to make sure that we understand not just the different ages of children who can play these games, but also different cultural contexts. These are all questions that need to be sorted out from a research perspective as the serious games movement moves forward.

Do you have any plans to get in contact with the UN?

I actually have talked with people of the UN. The World Bank also held a symposium about looking at urban planning in the developing world, and asked me to talk about the urban planning game that we do. Unfortunately we live in a world where resources are finite and therefore research depend on where the funding is at. I think these are all important questions and I am happy to be participating in answering them.

Thank you very much!