the Escapist

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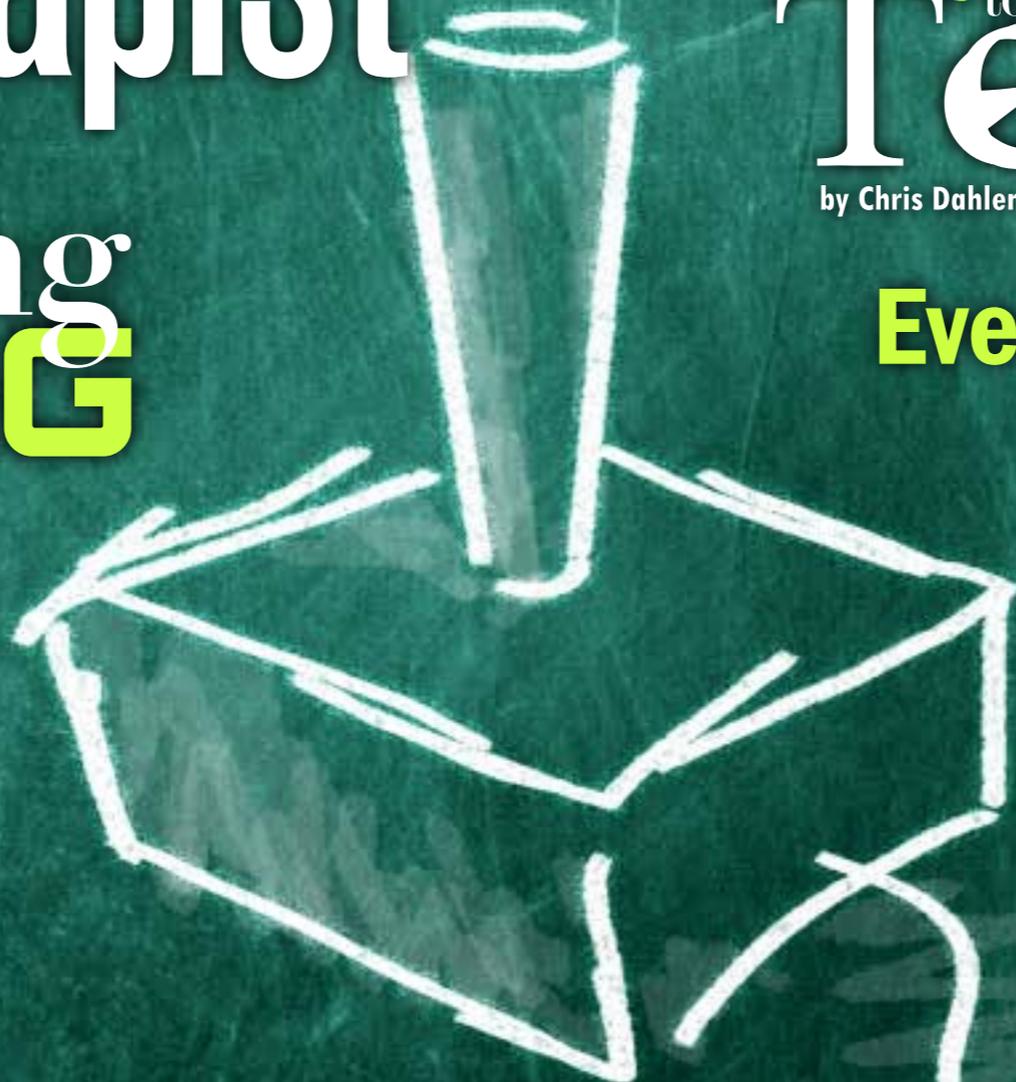
EDITOR'S NOTE
by Julianne Greer

Even before I started kindergarten, I attended a Montessori school. For those unfamiliar, a Montessori school will not seem much like a school in the traditional sense. A visitor to a Montessori establishment would find children of many different ages all piled together in the same room. The children would be observed and helped by the teachers present, but really you'd be correct if you noted the children were directing their own time. In fact, it may look like the children are playing – drawing, playing games – settled into small groups about the room, or perhaps working alone.

The thing is, they **are** playing. The theory of Montessori is to look at the world as a child does; teach the child, do not correct the child; allow her to explore her surroundings, but aid learning by providing toys with a goal.

Many people are skeptical of this methodology, but it's gaining ground. And I have nothing but good things to say about it, and thanks for my parents for sending me. By the time I went to first grade, I knew world geography, I knew multiplication tables through 5's and I understood the relationship of 10 to 100 to 1000. Not bad for age six.

As a result, the idea of learning through games and toys is not only natural to me, I see it as a necessary part of education. The ancient Chinese proverb, most often attributed to Confucius, "I hear, I forget; I see, I remember; I do, I understand" is never more demonstrable than in educational play. Children are more likely to respond to a lesson taught through fun than through lecture, it is their nature.

And so, now that education is moving onto computers, I delight in the notion of games with a goal. Not only are we teaching the children the basics of education in a way they can understand and enjoy, but we are familiarizing them with technology. The way our world is moving toward a networked economy and community, this familiarity with technology is vital to their success, as it will be of even more import in their lives than our own. Why not give them a head start on that while teaching them the three R's?

Cheers,

Julianne Greer

LETTERS TO THE EDITOR

In Response to "Green Eyed Grrl" from The Escapist Forum: I found it unfortunate that this game didn't sell as well as I believe it could have. There was something absolutely magical about this dystopic world, and the fight to save it. It's hard to put my finger on it.

It felt … real. It was so well thought-out that it became absolutely palpable. Because of this, it has a greater ability to pull the gamer into the actual world; to CARE about what's happening to a fictional planet.

And when trying to describe it to my friends, the questions were usually the same. "So it's a Zelda clone, then?" "Oh, it's like Metal Gear Solid?"

And the answer was simply: "No. It's Beyond Good and Evil."

- Bane Keldare

In Response to "Green Eyed Grrl" from The Escapist Forum: It's a bit dangerous to suggest that *Beyond Good & Evil* is for everybody. Sometimes it seems we need to **excuse** ourselves for playing unpopular games such as *Psychonauts* or *Beyond Good & Evil* by saying that, "hey, it was just overlooked."

The problem does lie, of course, with those who make the games. They'd rather make a popular game than an

unpopular one, sadly. Then again, who can blame them. Apart from me, that is.

- Jeroen Stout

In Response to "Green Eyed Grrl" from The Escapist Forum: What a funny trend to find games that are critically successful but commercial flops, and put them on a pedestal of profundity. The purpose of this article seems to be: proselytize the unwashed masses who were obviously duped by *Prince of Persia* and *Zelda: Wind Waker* back in the day.

I picked up BG&E back when it came out, and was amazed by the high production values and obvious love put into the game...but the platformy/racing/photography mish-mash of gameplay sent me right back to Zelda and PoP. If BG&E had been a run-away commercial success do you think it would have place here among the disenfranchised? A place of derision perhaps.

- FuriousBroccoli

In Response to "Everywhere & Nowhere" from The Escapist Forum: Ubisoft has been a favorite publisher and developer of mine for years. Odd that they have managed to stay so quiet while growing so large. Even so, they show their love of games through their commitment to creating new and innovative games. The care about making good products, for all kinds of gamers.

- GameGhost

In Response to "Ubisourcing" from The Escapist Forum: I can't think of anyone who actually makes games who would characterize art, animation and audio as "minimally creative."

Based on this article, I'm going to go ahead and guess that Varney has no understanding of the role of independent contractors in the game industry. Just because something isn't done in-house doesn't mean it's "outsourced."

- Ian Dorsch

In Response to "Ubisourcing" from The Escapist Forum: In my opinion, it's not a terrible stretch to call it "minimally" creative to draw a mundane object that you've been told to draw, in somebody else's style, for use in a setting and manner that still another person has decided upon; nor to record a realistic and common sound effect per another person's request. There's creativity involved in these tasks, yes, but not much.

- Bongo Bill

In Response to "Ubisourcing" from The Escapist Forum: When I stupidly typed "minimally creative," I was actually thinking "minimally supervised." I absolutely don't believe, nor mean to imply, that art and music aren't creative.

- Allen Varney

learning the GAMING WAY

by Shawn Williams

When someone mentions "educational gaming," it used to be the only games we could discuss were games like *Mario Teaches Typing* or *Number Munchers*. They were games meant to teach you measurable skills in hard-wired subjects like math, English or - if you were lucky enough to sport a high-end Apple II in your classroom - you could fire up *Oregon Trail* and learn how to make your entire family die of cholera.

In our enlightened, modern era, it's become more obvious that sometimes the "education" you can receive from games extends beyond adding and subtracting. While many games can teach valuable skills like complex problem solving and how to manage a budget, there are some games that have educational benefits that go beyond what you learn in a classroom.

Oftentimes, the trick lies in identifying exactly what it is you want to learn.

Identifying A Problem

As in any marriage, mine is divided into various roles, which my wife and I then carefully sort according to our talents. Striking a blow for feminists everywhere, my wife Becky banished me to the kitchen to cook dinner while she balanced the checkbook.

On occasion, I would consult the checkbook while I browsed the Alienware website and drooled over the latest gaming rigs. Looking through our many debits and few deposits, I would dream about ignoring such unimportant bills as rent, groceries and car payments in order to save up for the **ultimate laptop**.

It was during one of these daydreams I noticed an error. It was a game-related charge, of course. When I spotted an extra monthly fee being charged to our checking account in our checkbook, my initial thought was Becky had rolled a night elf character in *World of Warcraft* – an act so downright vile and inexcusable that apparently she had bought another account in the hopes I wouldn't find out and descend upon her in all my Horde fury. When I noticed the fee was being charged to **my** bank card, I thought she was **really** being devious – but then I noticed other discrepancies: Mundane charges being entered twice, checks being recorded for the wrong amounts.

The sort of mistakes Becky just didn't make.

When I pointed out the errors to her, she turned to me with shame in her eyes and asked if I could take over doing the checkbook for her. The simple task of balancing the checkbook had become too difficult for her.

You've Got Cog In My Nitive

Becky was diagnosed with multiple sclerosis in April of 2000. Multiple sclerosis is a chronic, often disabling disease of the central nervous system. It attacks the myelin sheath surrounding nerve cells, causing them to misfire and damaging the nerves themselves. The symptoms are varied and extremely numerous, but one of the most common is cognitive dysfunction.

Becky has a wonderful neurologist that she regularly works with, Dr. Hany Salama. He's a handsome, intelligent, young doctor that could have walked out of the set of a medical drama on TV. He always makes time to talk to us and is very receptive to trying out new suggestions and therapies that might help. But when we approached him about treatment for the cognitive problems Becky was having, he could only offer a few aides: Making use of a notebook or PDA, using a calculator, etc. There just aren't that many treatments; most rehabilitation centers don't have any programs in place for cognitive therapy and instead focus on "work-arounds," ways to compensate for loss of ability and tools to use in place of relying upon your memory.

As we researched possible therapies and read up on various treatments that had proven effective for some of our friends in the MS community, many of them talked about the benefits of simple puzzles and mind-games, like Sudoku and crossword puzzles.

We asked Dr. Salama what he thought of this. "The brain is like any other organ," he told us. "There is some evidence to support that mental exercises can help it, but nothing definitive."

We didn't need definitive. We began looking into any sort of therapy that showed benefits to cognitive abilities. We read up on diets, vitamin supplements, every color of tea you could imagine – Becky even tried such radical treatments as **reading books**.

Chatting with one of our online friends, they talked about a study in the New England Journal of Medicine that pointed out potential protection from dementia by "engaging in regular cognitive activities such as reading and crossword puzzles." We went back and forth on whether protecting someone from dementia is the same as helping them with cognitive dysfunction, but when you're desperate, you'll grab at any possibility, no matter how tenuous it might appear.

Videogames As A Treatment?

When I first heard of *Dr. Kawashima's Brain Age*, I wrote it off as a clever marketing ploy. I mean, come on – a **videogame** that helps your brain do anything other than plot violent rampages in schools? Ridiculous. We all know that videogames were created to subvert children.

I wanted to ignore it, but I kept hearing about it on news sites – and not just the gaming news: It seemed while titles like *Grand Theft Auto* were being dragged before the sacrificial altar of the U.S. Congress, *Brain Age* was quietly earning attention as a game that was proving helpful to people worried about cognitive

We began looking into any sort of therapy that showed benefits to cognitive abilities. We read up on diets, vitamin supplements, every color of tea you could imagine - Becky even tried such radical treatments as reading books.

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function. And when you read a quote from the National Executive Director of Alzheimer's Australia espousing the value of playing *Brain Age*, it's hard to simply dust off his opinion as "uninformed."

I didn't expect to buy *Brain Age* for Becky and find her miraculously cured. In fact, I didn't expect to buy it for her, period. I thought maybe I'd show it to her the next time we were at our local gaming store. I'd tell her about it, possibly get her to try the demo, see if it were something she'd want to try. But the idea of my wife, a woman that refused to hunt with me in most MMOGs because I didn't spend enough time killing things, interested in a game that didn't involve stabbing or shooting people? No way.

I went into the experiment not worried in the slightest. Maybe it **would** help, after all. And even if it didn't, it wasn't going to do her any harm. Spending some time every day working out her gray matter? What could possibly go wrong?

Not A Treatment So Much As An Addiction
At first glance, *Brain Age* is a simple game: A few very simple exercises you

can do every day to train your brain, and a test to measure the "age" of your brain that is supposed to show the health of your brain by comparing your chronological age with the mental age of your brain.

On the surface, it sounded completely innocent. The games, as simple as they are, are actually a lot of fun. But I expected Becky to play it for a little while and become bored fairly quickly – we both have a large collection of games that we've had for years and still haven't managed to make much progress through, so I thought this would get added to that pile.

Instead, it became her constant companion.

A casual gamer in the past, she became die-hard almost overnight. And if the scores in *Brain Age* are to be believed, it was having a strong impact on her brain. Within a week, she had knocked off a decade. After a month, her brain age was approaching her chronological age.

Her cognitive skills began to demonstrate an improvement as well. She was having an easier time reading, she was able to

concentrate better and, worst of all, she had started double-checking my entries in the checkbook and pointing out mistakes.

I started playing not so much out of enjoyment, but rather in self-defense. If I was going to be trapped with some sort of developing super-genius, I wasn't going to go into this unarmed. I've seen *Akira*; I know how this ends.

Unfortunately, with two of us wanting to play and only one DS between us, I quickly learned that she was being taught other subjects beyond those needed for *Brain Age*.

Every time I sat down to take the *Brain Age* test, she would suddenly think of some chore I had forgotten. If she couldn't get me off the DS, she'd make a game of interrupting my gameplay. She'd ask me something about bananas so I'd keep thinking "yellow" and screw up my test. Sometimes she'd hide the cartridge. Once, she even put in *Barbie Horse Adventures* and insisted it was a new level I'd achieved.

> # I started playing not so much out of enjoyment, but rather in self-defense.

I made it all the way to the Blue Ribbon round before realizing I'd been outsmarted.

Sometimes, what we have to learn is simply that we **can** learn.

Broadening Her Horizons

It wasn't just *Brain Age* helping Becky anymore. She joined me in *Puzzle Pirates*, and quickly surpassed me at sword-fighting and drinking. (In the game, I mean – in the real world she's **always** been better at sword-fighting and drinking.)

Pirates was a perfect fit for her, because it was full of the sorts of games she loved – and they were all games at which I am terrible. Plus, she got to yell obscenities at me with a pirate accent; if there's a better selling point for a game, I've yet to see it.

She wasn't just improving at playing the games. She began **scheming** - coming up with elaborate plans to deprive me of my possessions in the games. When I finally managed to get my hands on some doubloons in *Puzzle Pirates*, she came up

with a devious plan to swindle me out of them. I won't go into details out of shame, but it involved a sword-fight, a pint of Ben & Jerry's and a ghost costume.

She began to be interested in other aspects of games, as well. She spent several days last week designing an elaborate quest in the *Ryzom Ring* expansion for *Saga of Ryzom*. The goal of the quest? You go from NPC to NPC, gathering a number of materials. Each time you turn in one of them, the NPC tells you some new embarrassing fact about me.

Imagine my pride as a group of adventurers defeated a horde of evil Kitin and turned in a jewel they guarded, only to be rewarded with the knowledge that I wear homemade Zach Braff Underoos.

Finding Solutions

Sometimes, what we have to learn is simply that we **can** learn. Games will always entertain; that is their purpose. But when they give us more than entertainment, when they teach about **ourselves**, that's when they move into an entirely new realm.

Becky isn't ready to start debating Stephen Hawking, but from where she was just a few months ago, it's a drastic improvement. I'm not even sure the game was **really** doing anything – it could have been simply that seeing her score increase gave her the confidence to try harder and work through her difficulties. The result was the same – she was showing improvement. The game taught her that all her hard work would pay off, that she wasn't helpless.

And that's a lesson we could all stand to learn. COMMENTS

Shawn "Kwip" Williams is the founder of N3 (NeenerNeener.Net), where he toils away documenting his adventures as the worst MMOG and pen-and-paper RPG player in recorded history.

Playing to the Test

by Chris Dahlen

Nothing can judge you better than a videogame. You spend hours or tens of hours feeding information into a system that gauges your abilities, tests what you're capable of and rewards your improvement. With the right design, a game not only knows if you're winning or losing, but where you're strong and where you need help.

In education, and especially in the school system, tracking students' improvement is everything. In the U.S., the No Child Left Behind Act requires that students show demonstrable progress in basic learning areas; from grade to grad school, we endure regular standardized tests. And from the dawn of education, teachers have been forced by the people who pay their salaries to prove their students can read and write more words at the end of the year than they could at the beginning. While a great education system matches the particular needs and strengths of each student, you can't get away from keeping score.

Games were **made** to keep score. So, why are games in the classroom treated as a sideline and a bonus activity instead of an integral aid to the curriculum?

Many developers coming out of academia, the "serious games" movement or the educational software business want to see more games in schools. But as they make their case, one of the biggest hurdles they have to cross is assessment: If you can't prove a game's efficacy, and if the work – sorry, play – students enjoy in a game doesn't lead to a number in a grade book, it's hard to add it to the curriculum.

Will games ever find a place next to textbooks and multiplication tables? Can games even measure the kind of performance that counts in school?

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When you watch students play games from the Education Arcade, you don't think about pedagogy, you think about how much fun their games look. The Education Arcade is a joint project between the University of Wisconsin and MIT. Three years old, the team set out to "catalyze new creative, teaching, and learning innovations around the next generation of commercially available educational electronic games," according to the mission statement on their site.

In *Environmental Detectives*, students run around the MIT campus, racing to find the source of a made-up toxic waste spill while juggling updates from Palm Pilots attached to GPS units. In *Revolution*, built on the *Neverwinter Nights* engine, you can explore Colonial Williamsburg and take sides for or against the British. And in a game that looked as engaging as it was low-budget, the Education Arcade team handed out Pocket PCs with infrared ports to a classroom of kids and watched them pass viruses back and forth to each other – and then challenged them to deduce who started the outbreak.

I caught Eric Klopfer, co-director of the Education Arcade and Associate Professor at MIT, and undergrad Nick Hunter presenting these games on a bitterly cold night on the MIT campus last December. The games looked great and the ideas were solid, but I couldn't help but wonder: How do you sell this to a principal whose biggest problem is No Child Left Behind?

Today, educational software can come in elaborate forms: Large courseware products with years' of content that deliver textbook excerpts, online instruction, tiny videos of teachers scrawling on whiteboards and, of course, assessment activities, mostly of the "drill and kill" variety. They come with charts and efficacy studies, but they're missing a key ingredient: They're not much fun – especially compared to a game about toxic waste.

But then, there's the issue of assessment. Use a major courseware product, and it'll rank and rate your students in quickie parent letters or sprawling, district-wide spreadsheets. Watching the Education Arcade's test subjects spread a virus to each other with handhelds, it wasn't clear how you would judge their performance.

When I spoke with Eric Klopfer this July, at the Education Arcade's labs at MIT, he explained that in their projects, traditional assessment usually takes place after, not during, the game. For example, students who play *Revolution* are asked to make a video diary of their experience, which the teacher grades. This also keeps teachers in their comfort zone: The kids may work freely inside the computer, but at the end of the day, they're rated through the usual pop quizzes and essays.

What about assessing the student during the game? Scot Osterweil, Creative Director at the Education Arcade, doesn't feel like the need is there – largely because the market isn't demanding it. Osterweil is a veteran of educational gaming and the co-designer of Broderbund's acclaimed *Logical Journey of the Zoombinis*. *Zoombinis* was remarkable for weaving math instruction naturally into the gameplay, instead of settling for the clunky hybrid of lesson-and-reward found in most "edutainment" titles. But he's discouraged by the current climate in schools: In his view, No Child Left Behind has made it even harder to get software in the classroom, and "it has forced us [instead] to think about how games outside the classroom might help us in the classroom."

Today, educational software can come in elaborate forms.

This is not to say their games can't track what students are doing. Like any group of researchers, the team lives and dies by metrics, such as what choices students make, how they tackle and solve a problem and how much time they spend on various tasks. The difference lies in the metrics they're after. While educational products that come from gigantic textbook publishers and survive statewide adoptions focus on meat-and-potatoes skills like math and reading, the Education Arcade favors "softer skills" – problem-solving, critical thinking and teamwork.

Teaching these kinds of skills comes naturally to games. When we talk about "incidental learning," we're referring to the kind of intellectually-challenging activities that we learn by solving roundabout puzzles in *Myst* or *Grim Fandango*, or by mastering the tactics of a real-time strategy game. Massively multiplayer online games teach teamwork – for the players who are inclined to learn it – and they reward a variety of approaches and skills. This isn't to say they can't teach you hard facts about science, or that *Revolution* doesn't contain solid historical content, but the rote coursework shares space

with the other skills. Klopfer says the goal is to create an "ecology of games," with something to fit and engage every student's style.

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But if games naturally veer toward exploration and creative play rather than strictly regimented learning, can they really "keep score" on the student's progress?

The most popular games on the market suggest you can. Take *World of Warcraft*: Its finely-tuned leveling system moves, grades and advances the player as impressively as any educational product. You gain experience for clearly-defined tasks. You can always watch your progress, thanks to the progress bar sitting right on your screen, and every challenge you encounter comes with a ranking and color-code. If a quest is too difficult, it's marked red, or it's not even offered to you; if a monster is much weaker, its level shows up in gray. You score fewer experience points for tasks that are too easy, but if you go for a monster that's way above your level, you're not only going to get clobbered, but the damage you deal against it is

reduced to the point where it's actually impossible for you to win. Instead of letting you think you should take a wild swing and see if you get lucky, the game reinforces that you should tackle a challenge that's right at your level.

Gamers feel the most sense of accomplishment when they're always facing just enough of a challenge – as described by Mihaly Csikszentmihalyi's concept of "flow." You can credit *World of Warcraft*'s addictiveness to how well it paces those challenges – and plenty of

smart educational technologists beat and tinker with assessment algorithms, trying to accomplish the same thing. So, what if a game like *World of Warcraft* could be built around educational content – say, instead of killing murlocs, you're solving math problems? And would students get just as pumped about reaching the next proficiency level?
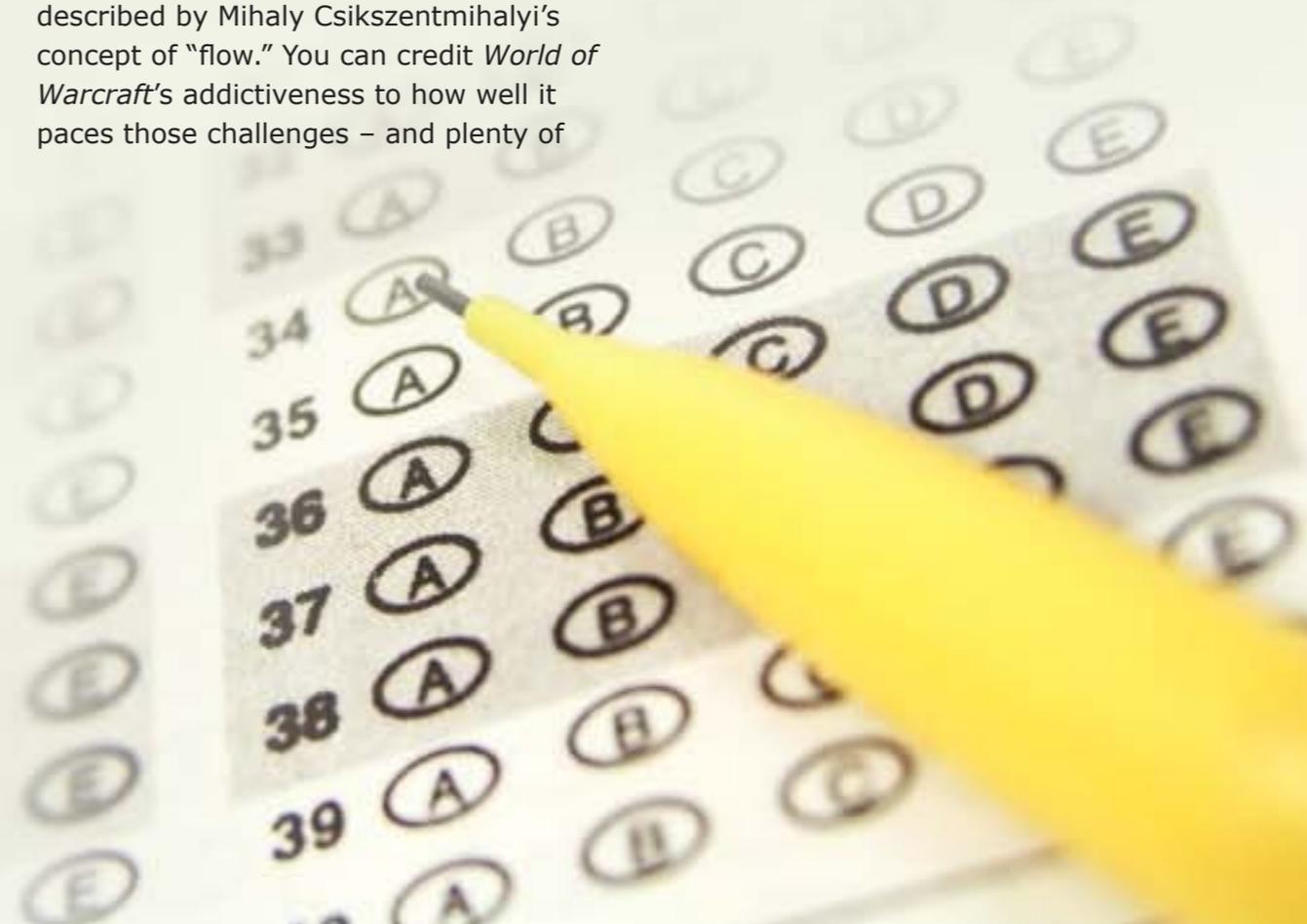
> **"The gamer generation learns differently than from lecture. They are not passive learners."**

It's not that you can't build a game around educational guidelines. A number of researchers, including those at the Education Arcade, have even brought commercial games and sims like *Civilization IV* into the classroom. Elizabeth Simpson, Assistant Professor of Special Education at the University of Wyoming, ties commercial games to state standards: For example, she taught both a business and a social studies class using Enlight Software's *Restaurant Empire* and correlated the students' play to actual state standards. As Simpson explains, *Restaurant Empire* was an "anchor" for the class: Students used it to gain exposure to how a restaurant works, and then went out into their real-world community to talk to restaurant owners.

"What we found was that students were able to talk about economic problems and culturally-based issues," says Simpson. "They had virtually apprenticed being a restaurant owner." The actual restaurant owners they met later were impressed by how well they understood the restaurant business. By working through the game, failing **and** succeeding, they thought through some of the same problems a real restauranteur faces every day. Even the game's cultural shortcomings – most of its chefs are male, and most of the women appear as wait staff – helped fuel classroom discussions.

State standards often focus on the bigger picture and more conceptual questions, giving the students room to explore and explain ideas, rather than just memorizing facts. "The gamer generation learns differently than from lecture. They are not passive learners," says Simpson; they favor "trial and error." And in her research, games have proven to be a fantastic teaching tool – and an incredible motivator.

But while Simpson tied the games to the state standards, the actual assessment still took place outside of the games.

Even in games written for the classroom, there's still a strong tendency to fall back on drill and kill activities as the simplest way of measuring students: Rigid, linear exercises like a series of words they have to learn, or techniques they have to master. Klopfer explains the difference between drill and kill and actual play as a matter of freedom. When you're banging through exercises, you have to complete the problems you're given exactly the way you're told; in even the most linear games, you may have to kill exactly nine guys to proceed, but you can choose your weapons and how you dodge and maneuver. Or as Osterweil puts it, "If a golf course were laid out telling you which club to use on which hole, it wouldn't be much fun."

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In a sense, the divide between the educational software that sells now and the educational games that we'd like to see in schools is what they expect the student to achieve – their own goals, or the goals of the school system?

There's no simple answer. Strip away the controversies and problems in No Child Left Behind, and you can see why

President Bush's original plan drew support from as far across the aisle as Senator Ted Kennedy: It promised to find and save failing students. If you catch students when they're falling behind in crucial life skills like literacy and math, you can help them catch up before it's too late. It's intriguing to watch kids learn problem-solving with classroom games, but it's vital that they learn to read in the first place.

On the other hand, Klopfer argues it's not that simple. For one thing, drill and kill may be the best way to help remedial students, who can struggle with a lesson for as long as it takes until they get it right. But what about the next challenge? "I've trained them for this particular task … and then when I have a different version of that task, evidence shows they perform really poorly."

The "softer skills" are crucial tools to the "21st century citizen." "Being able to solve problems, having a fundamental understanding of scientific issues – these are all important to becoming a good citizen, and viably employable." Unfortunately, today, even if teachers **do** value deductive reasoning and critical thinking, they're too busy teaching in preparation for standardized tests to make time for other curricula.

Although they continue to test their projects in the classroom, they're putting more weight on using them outside of school: "My goal is to improve learning in schools. But that may happen through gameplay outside of the schools." It's easier to fit "play" into an after-school or summer slot than in the middle of a classroom. Of course, that also means the kids who can't afford or can't get access to the game hardware will just be left behind.

However, when games break into the classroom, the grade book won't just change the games; games could change what we value in education. When students choose their goals, they have more freedom to learn the way that works for them. For example, in an online game, they can form teams or go solo, collaborate or compete; they can choose a track that fits the skills they enjoy; and they can advance at their own pace.

And they might crash an even bigger barrier: The dogma that the score is all that matters – and that a perfect score comes from perfect performance. In games, you're allowed to screw up. Almost nobody gets to the end without a few deaths and disasters – but we can learn from our mistakes, and we can learn never to be scared to take chances. "If you're always a straight-A student, maybe you're not being challenged enough," says Klopfer. "If you fail half the time and succeed half the time, maybe that should be an A."

COMMENTS

Chris Dahlen also writes about technology and culture for Pitchforkmedia.com*, The Onion AV Club and* Paste Magazine*, where he is games editor.*
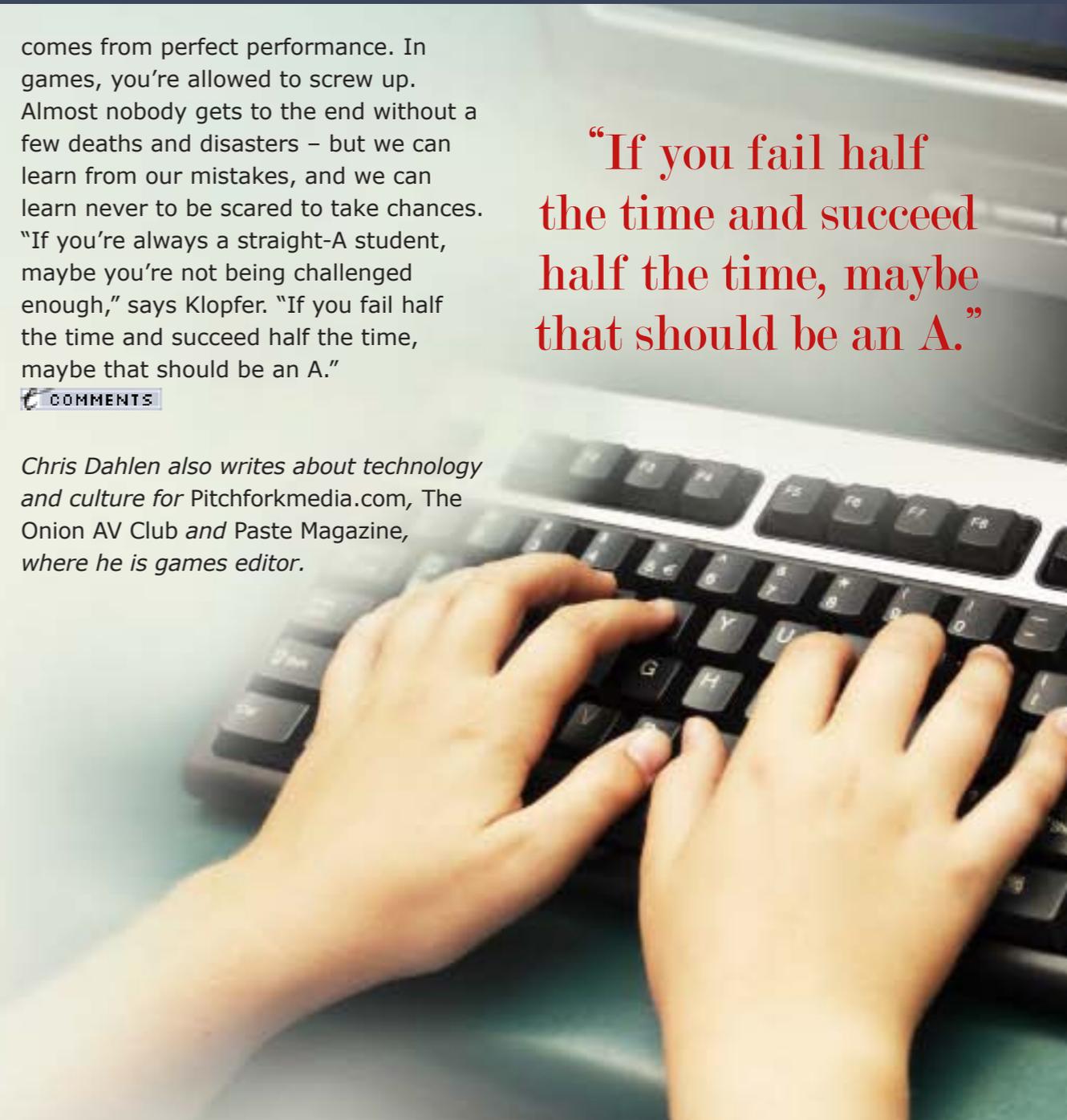
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EVEN BETTER than the REAL THING

by Tim Stevens

In the world of motorsports, autocross is to Formula One as your local soccer league is to the World Cup; there might be a few sponsored players out there who earn a little money, but most everyone buys their own shorts and cleats. Likewise, most autocrossers bring their own cars and tires. Hardcore competitors regularly drop $1,200 a month on tires that might survive a month's worth of abuse, racing after a prize that's often little more than a $5 plastic trophy.

But, for every speed racer blowing the price of a small car each year on tires, wheels, sway-bars, dampers, trailers, lodging, race schools and who knows what else to squeeze a few hundredths of a second off their time, there are dozens more who autocross just for kicks. I fall somewhere in-between, not hardcore enough to spend thousands of dollars on go-fast bits, but competitive enough to want to win. What I needed was an edge. Something to offset the advantage gained by those with the resources to dump wads of cash into their hobby. One winter I found it; the perfect training regimen for cheapskate racers like me: videogames.

Not just any videogame, of course. Real training requires some sort of simulation. In the world of flight training, it's typical for a new pilot's first non-simulated flight in a new jet to occur with passengers in the rear. That seems a little disconcerting, but the benefits of sim training over real-world training are straightforward: A sim can throw a pilot into just about any problematic situation imaginable and do it safely, enabling him to repeat the exercise until he gets it right. All this without having to worry about investing in any farmland.

Where flight sims have been pretty serious business for a number of years, it's taken longer for the racing genre to mature into something more than idle entertainment. It was Papyrus' 1998 *Grand Prix Legends* that broke the mold. Still an obscure game by most standards, it perfectly combined realism, challenge, fun and, perhaps most importantly, **timing**. *GPL*'s innovative (at the time) internet connectivity also enabled gamers to share setups, lap times, cars, tracks and eventually full mods that changed everything but the game's core physics. Now, eight years

after the game launched, players are still adding new content every week.

I've been playing racing games since the Atari 2600 and Commodore 64 days, but it wasn't until the beginning of 2003 that I finally got serious. That holiday season, I received *F1 2002* for the PC as a gift - one of the most hardcore sims of its day. Before I even turned a polygonal wheel, I installed a mod called *GTR 2002,* replacing the twitchy but furiously fast F1 machines with a series of slower but far more enjoyable sports cars. While I was having a great time getting a feel for the game, I soon realized I was absolutely terrible. I spent hours and hours practicing before my first online league race, qualified on the back of the grid, then, after just a few laps of chasing the pack, I spun onto the grass. My car stalled and my race ended; a modest start to my sim racing career.

I didn't give up. Fueled by competitive spirit and aided by the fact that I could practice whenever I wanted without paying track fees or buying new tires, I kept at it. Soon, I was able to actually finish races. Eventually, I landed on the podium. I even won once or twice.

I didn't realize it, but I was learning the instincts a racer needs in real life in the process: How to counter-steer; how to find and hit the apex of a turn; how to focus for 45 minutes straight and, most importantly, how to push myself to find the extra tenths of a second hiding in every corner. Comparing my race telemetry to others' showed me exactly where I wasn't using all of the simulated grip and power available to me. With my racing sim in-hand, I now had the technology; I could rebuild my confidence and improve my skills. And it worked. The harder I worked, the faster I went. I was learning.

When the spring thaw came and the autocross season heated up, I discovered something wonderful: I now had a better feel for my car than I'd had in the fall, in spite of the fact that I hadn't taken it out of the garage in months. I could drive it harder, feel the tires braking away earlier and make corrections sooner. I was **fast**, and that summer, I won my class twice, and never finished lower than second place.

The ability to log hundreds or thousands of hours of seat time at just about any track in the world from the comfort of your own home is a huge advantage to a racer on a modest budget. But even the racers with corporate benefactors buying their tires for them are warming up to the idea or racing sims. These days, it's common to find a variety of professional racers online, even big names like Dale Earnhardt Jr., who runs his own online league.

Me, I'm still not the most consistent autocrosser, and I still haven't bought those sticky tires, but nowadays, I do most of my racing online anyway and leave the car in the garage. When the track time is free, the competition is intense and the safety is unparalleled, sim racing ceases to be just good practice and starts to become a good alternative. COMMENTS

Tim Stevens is a freelance writer who autocrosses in a 1991 Toyota MR2. He also does the occasional ice race and rallycross in a 2002 Subaru WRX. He blogs about racers and racing games at DigitalDisplacement.com.

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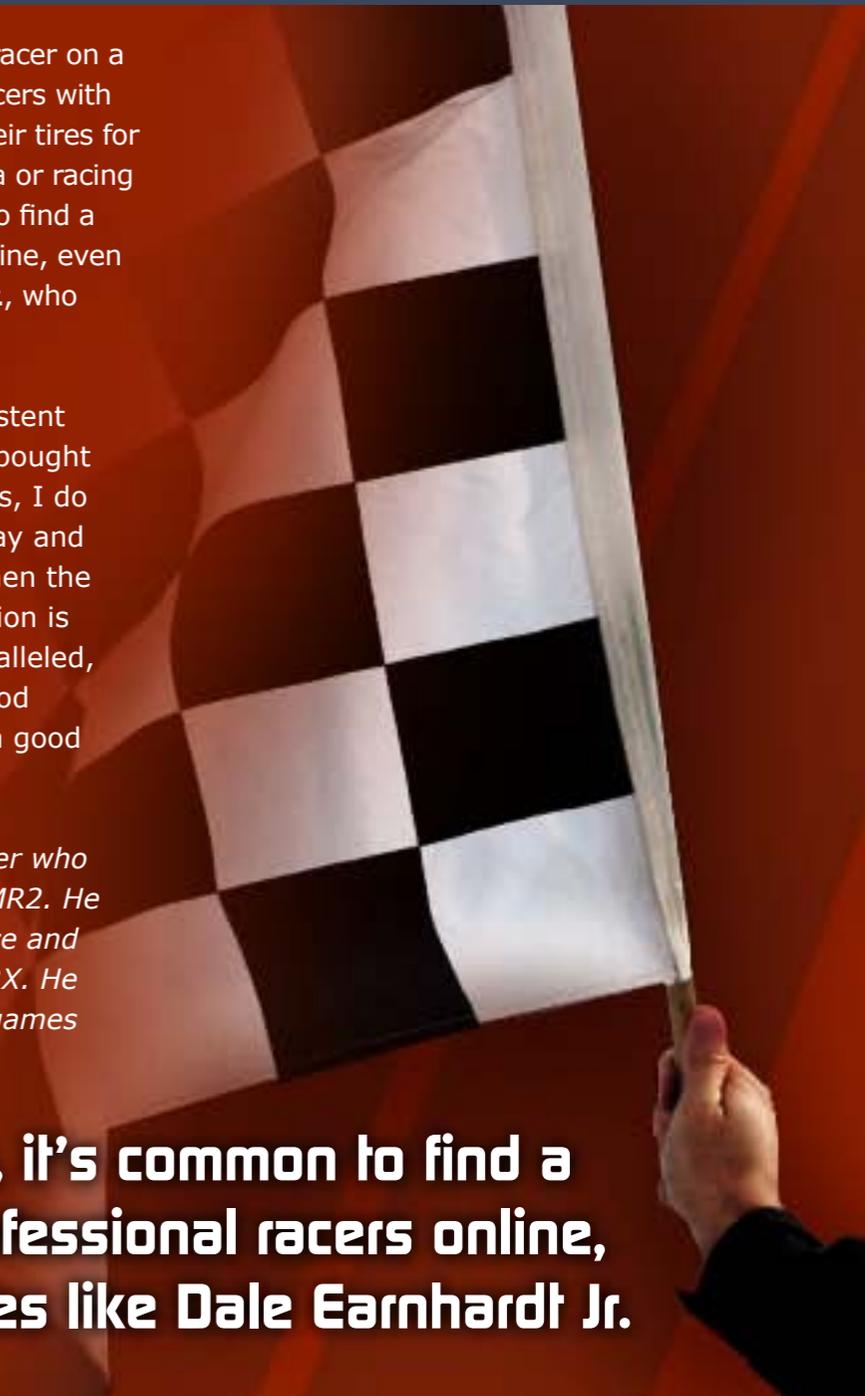
Piano Wizards

by Shannon Drake

Plenty of kids wind up press-ganged into the car, driven to a house that smells of cats and shouted at as they mangle Mozart, but it's seldom fun. Consequently, I was intrigued when I was presented with Allegro Rainbow's *Piano Wizard*. While *Oregon Trail* taught me a little about heading out west — naming a character BUTTS added to the hilarity when it died horribly — and Mavis Beacon was one hot babe, I'd seldom experienced a program that combined enlightenment and entertainment in a significant fashion. Playing through "Piano Man" in a *DDR*-style rhythm game with a full-size keyboard was fun, but then they upped the difficulty, and I recognized the strange shapes moving across the screen. It was my old enemy: Musical notation. Merciful heavens, I was learning. What manner of sorcery was this?

Chris Salter, Allegro Rainbow's CEO, has been carrying this particular vision — fun meets learning — for quite a long time. "I have double degrees in Linguistics and Music, and a Master's from UCLA. I'm particularly fascinated with how we learn language and how we can learn music." During his Master's research in Brazil,

that sort of learning was his focus, and he "saw the relationship of visual anticipation and cues to learning rhythm and guitar and realized that would be a huge asset if we could incorporate that into a game."

His post-grad career of selling voice recognition software and joysticks at trade shows led Chris to a realization. "If I could build it and show it to people, I could definitely sell it," he says. "And that gave me the courage to start this company." He managed to find an entrepreneurial support network and raise the funds to start the company in 2001. "We were able to raise money even in that challenging market," Chris says, after reflecting forming a company in the middle of the dot-com recession probably wasn't the best time to do so.

He called his company "one of those overnight sensations," but from talking to him, it's clear that these are the fruits of a long labor of love. And it feels like this man and this company are on the cusp of something big. Maybe it's the business relationships he describes as we continue talking about the business side of Allegro Rainbow. "A lot of our

strategic partnerships are all coming into alignment and fruition, and those are kind of the key to our ability to get very big very quickly. Because we're just software and intellectual property. We're not a hardware company. We don't build pianos or keyboards. We certainly don't have computers. We're not really content providers or creators of content, either. We just have an amazing engine that lets virtually anyone take virtually any piece of music and play it."

Business logic dictates that they will need people who do those things, which has been the key in developing these partnerships. "For example, Fisher-Price in the toy industry embraced it very early on; about a year and a half ago, they approached us and wanted to take it into the toy market as an educational toy."

Apple is another key partner, he says. "With [Apple], they are huge in the education department, but one of the things we really need to show off the game is computers. And if we can help them sell more computers, they love that. … We can help them transition iPod users into Mac users." As we spoke, he was working on a deal to demonstrate

the game in 50 Apple stores. The key difference between his company and the rest is: "We are really about people who want to be musicians or want their kids to be musicians, not a niche market of musicians. That's a much, much bigger market."

Perhaps remembering the cranky old teachers of my youth, I asked about that much bigger market, and whether he's run into any resistance bringing his game out into the world. "First of all," he responds, "we have people who are in the trenches, working with kids, and they embrace it right away. Anything to get the kids excited. And if we have the time to educate them about the way we're transitioning to musical notation, I would say two-thirds to three-quarters of those teachers and educators, at that point, they're very excited [because they realize that] under no circumstances do we think this is a replacement for a piano teacher or a music teacher." In fact, it makes their lives easier by doing two things: "This game teaches notes very, very well. It lets kids practice very, very well," but he emphasizes that *Piano Wizard* doesn't teach the rest of it, saying, "It does not teach phrasing,

dynamics, interpretation, all the art of music has to be taught by a human being, that's just clear to us. And the kids will reach bottlenecks anyway with their techniques, fingering and so on."

"They need a teacher," he says. "We can give them highly motivated, highly practiced kids who are eager to go to the next level and get the higher scores on the game and want to know how to do that. As the kids learn a few songs, they recognize the songs, and the music drives them to learn more than the game does."

They aren't waiting for the school districts to catch on, either. They're using the game as part of a guided curriculum in a program called *Piano Wizard* Academy, using college kids to help teach young children to play piano.

I asked to know more about the Academy, and Chris sent me to Southern Illinois University Professor Don Beattie. They go back a long way. Chris was one of his first students and they kept up over the years. Eventually, Chris showed him the program he'd developed, and Professor Beattie found it to be "a marvelous medium for people to play
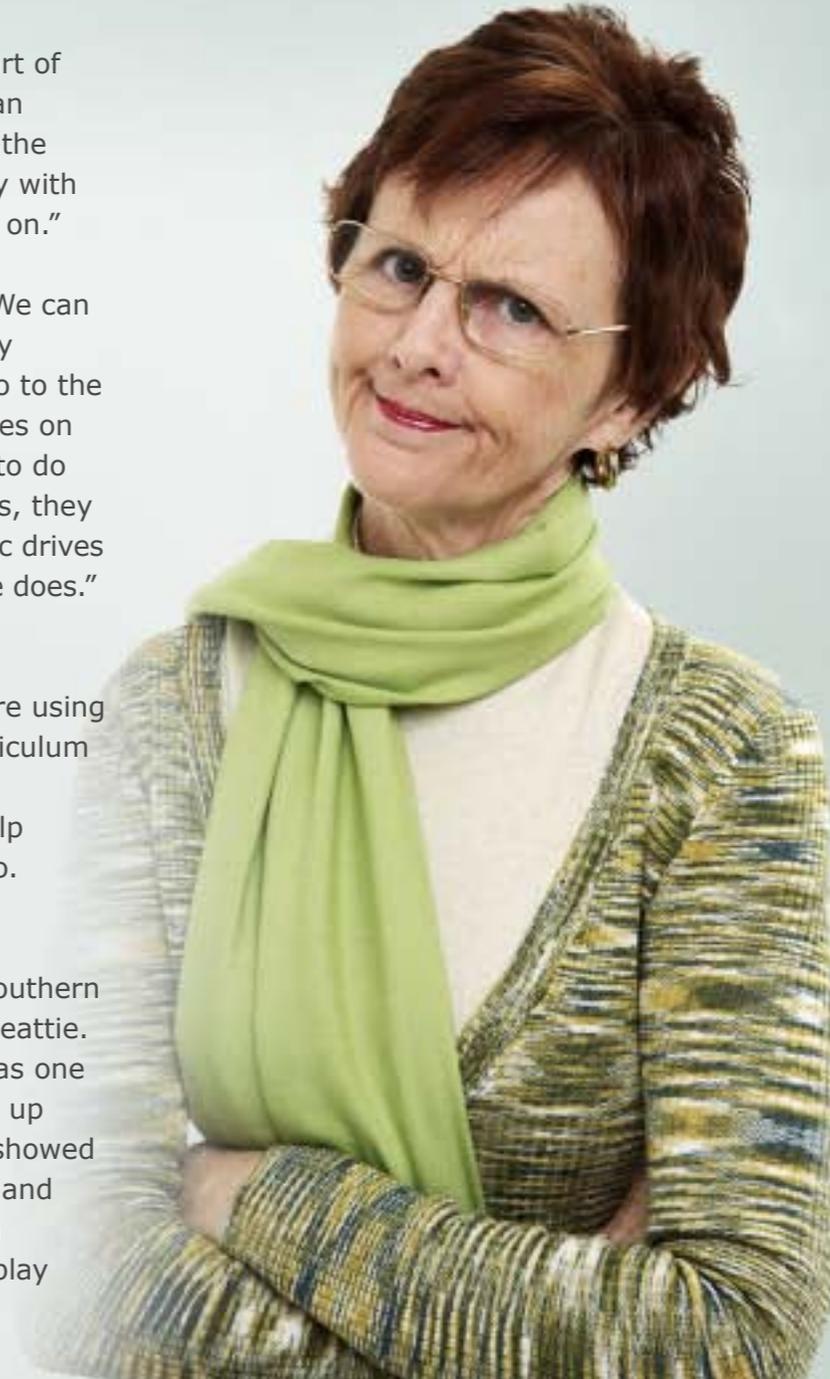
piano." The veteran piano instructor brought it into the classroom and found things were different right away.

The kids went right to it, for one thing. Professor Beattie told me that he and his wife don't usually teach children as young as 3, as they don't usually have the hand coordination and strength to really play piano, but they went right to *Piano Wizard.* More importantly, the program worked. I asked for his opinion on why, and he gave me two reasons.

"First, the game promotes music literacy," he said, telling me that many students learn how to play piano, but rely on playing by ear rather than from sheet music. *Piano Wizard* teaches its students to read music, but eases them into it with a system of "music first, study second." "It's a terrific practice tool, because it never really seems like you're practicing. If you center on the joy of the experience, you'll get where you want to go." *Piano Wizard*, he says, "meets [students] where they are, and takes them where they want to be."

The biggest remaining question I have is why the system works so well. Having played it myself and watched other people play it, it definitely grabs

attention, and it is a lot of fun to play. But why does it help kids learn so well? "You can really atomize the musical process into extremely simple, achievable tasks, and then expand that as their coordination and abilities increase, and they increase pretty quickly," he says. "You see the kids hitting that tempo button, speeding the game up, almost immediately. They want more stimulation rather than less. They want to go faster, they want to get them all, and sometimes we have to back them off because music is quite challenging. As great a tool as it is, there's music out there that's very challenging, and there's music out there that's very tough to go through."

The game also speaks their language. "This is a videogame world," he says. "Kids are very multimedia, their nervous systems are extremely high stimulus."

The videogame aspect is what gets them and pulls them in, and then they have the same revelation I did. "We've had kids literally say, 'Hey, I can learn to play piano with this,'" I have to interrupt him to tell him I said exactly the same thing, then let him continue. "At first, it's just hand-eye coordination for them. It's a game. I've got to get that turtle. I've got to get that rocket. That's all they're really thinking. Then, the music starts to speak to them, and pretty soon, they're real excited."

Piano Wizard's simple elegance, and the "it's just a game" aspect, obscures a deep and powerful engine. "It looks very kiddy and limited, even," Chris says, echoing a concern of mine. Color-coded keys with turtles and rockets in videogame form don't seem to convey the seriousness generally associated with piano study. "My motivation was to learn how to read music. I started with that end in mind. I started with all the complexity of musical notation, the 12-tone chromatic scale, and that's why every single part of that scale has a different color. It's not just starting with the white keys and 'Oh, what do I do about the black keys?' I started with the

Piano Wizard's simple elegance, and the "it's just a game" aspect, obscures a deep and powerful engine.

full chromatic scale in mind. And that being said, it allows us to plug in literally any music. It's deceptive in its simplicity. That simplicity unlocks great, great potential. We have just begun to explore that." Further explorations include a version for guitar (already under development), and possibly a similar system focusing on percussion.

> **I'm the visionary who had the idea of the game design; when we had to choose between excitement and educational, we chose educational.**

While the idea for *Piano Wizard* had been percolating for a while, there was something about the When that intrigued me. After carrying an idea around for 10 years, why now? "I really thought I would get a brain tumor if I didn't get this out of my head," he said, laughing. "It just made too much sense. I mean, this was something that I could see would help not only myself, but millions of people, really. I have used this … this kind of bizarre study of languages and music. I kind of practiced this musical code in a sense, and I could see that this would help a lot of people."

He describes his role as, "My role is as the producer, if you want to look at it like that. I'm the visionary who had the idea of the game design; when we had to choose between excitement and educational, we chose educational. With the 3-D worlds they have now, they can get so immersive and distracting that the music would be lost, and we didn't want that to happen. Education is always our primary consideration, but the game has to seduce the kids into playing the notes the right length or at the right tempo. So we've done that with kind of that bifocal agenda. Know that the kids have to love

it, or it doesn't matter. And parents have to understand where it's going, or it doesn't matter. We've been able to straddle that."

"I believe that if I can expose this, this can be something for generations to help, a new way for people to learn music," he says, by way of closing. "And that our goal here is that this year, we're going to get on the map, we're going to get in the consciousness of the United States. There's so much skepticism in the world about music education. Many of our memories are so painful, and there's some doubts to overcome, and I appreciate your help. If we could just get the world to line up and play it, we'd be home free." COMMENTS

In 1972, Shannon Drake was sent to prison by a military court for a crime he didn't commit. He promptly escaped from a maximum security stockade to the Los Angeles underground. Today, still wanted by the government, he survives as a soldier of fortune. If you have a problem, if no one else can help, and if you can find him, maybe you can hire Shannon Drake.

Anne died
of dysentery
by Dan Dormer

The words flashed across the screen, and I knew I had failed in my promise to Anne. I promised that despite her coming down with dysentery, I would not let her die. I had failed her, and I knew one thing was for certain: She would definitely be less inclined to swap PB&J for tuna at lunch time.

While there have been a variety of educational videogames - *Reading Rabbit*, *Math Blaster*, *Number Muncher*, *Super Solvers Midnight Rescue*, just to name a few - none rekindle as many fond memories as *Oregon Trail*, which could be called the quintessential edutainment title of the late '80s and early '90s. The *OT* (as kids on Facebook call it when they reminisce about the game in various discussion groups) challenged young players across a variety of skill sets; The three R's to make it to make it all the way from Independence, Missouri to the Oregon Territory.

The game forced students to make various decisions that would ultimately affect their entire journey. When planning the thousand-mile journey, there were a variety of factors to

consider. First off, what type of job would you take? Sure, you could be a teacher, but just like nowadays, teachers in the 1840s got paid squat. If you were a doctor, you'd be rolling out with $1,200 and able to treat members of your party who got sick or injured along the way. Not wanting to be broke, and not wanting to be remembered as the guy who selected easy mode, I settled for one of the professions in the middle - the blacksmith: $800 purse and some mechanical know-how, in case the wagon broke.

Then came the purchasing of goods. The general store had all the necessities any party would need to make the trip to Oregon. Based on the profession a player selected, he was allotted a certain amount of money to budget for the supplies he needed. Oxen, clothing, bullets, food and spare wheels, tongues and axels - all this could be yours, if you had the necessary funds to procure it. Frugality was the foe here, as many players, myself included, underestimated just exactly what they would need for the trip. Who knew wagon wheels would break so frequently? How was I supposed to know that two spares

wouldn't be enough? Cars only came with one spare, and that seemed to work for them just fine. Ah, the logic of a child.

The journey began, and I couldn't wait to see if my motley crew could make it to Oregon intact. While I was worried about two other friends I simulated, Ryan and Jessica, I really didn't care so much if they made it; just that Dan the blacksmith and Anne made it safe and sound to their destination. But that was going to be a tad more difficult than I originally thought.

The first hundred or so miles came and went without much fanfare, but when I came across my first river, I made a terrible, terrible decision. While I thought it would be smart to pay the $5 to use the ferry to cross the river, I succumbed to peer pressure and decided to ford it. It was catastrophic: Oxen died, we lost clothing and the whole party lost some of its vigor. With many more rivers to cross, we learned a valuable lesson early on: Never, ever try and ford the God damned river.

When our group was first struck with illness (Ryan met the business end of a snake), we feared the worst. We rested in hopes that he would recover, and luckily enough, he did. So, when Anne fell ill, we figured she would be right as rain in a few days, as long as we rested. We knew that dysentery, whatever it was, would be a dys-tant memory in short order. Or, so we thought. Despite days of rest, there was no marked change in her health. And in a few more days, she passed away.

The rest of the journey was somber, but, despite a rather harsh winter on the tail end of our journey, we made it. Fates be damned, we were in Oregon now. And now, class, what did we really learn from

challenged children to think twice about shooting 15 animals, because while it might be fun, shooting more than you need only means the food you take back will spoil. And, maybe, it taught us a little about life and death. But hey, even if *Oregon Trail* didn't actually teach kids anything about problem solving in the real world, at least they walked away with one lesson learned: Never, ever ford the river. **COMMENTS**

Dan Dormer is a videogame freelancer who keeps a poorly updated blog at his personal site. He's also afraid of seeing scary movies. True story.

Oregon Trail taught kids more than just how to add, spell or read.

this journey, this expedition from one side of America to another?

Oregon Trail taught kids more than just how to add, spell or read. It taught kids that sometimes a variety of options present themselves, and it's up to the leader to choose which option to take. It

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