

SCHOOLS WITHOUT WALLS

BY TIM LOCKETTE

EDUCATION PROFESSOR RICK FERDIG SEEKS TO UNDERSTAND THE IMPACT OF VIRTUAL ENVIRONMENTS ON GAMING AND EDUCATION

If you grew up geeky in the 1980s, Rick Ferdig's workplace may closely resemble your idea of heaven. Here in the Educational Technology lab in the basement of Norman Hall, you'll find rows of Macintosh computers where, every summer, middle-school kids design their own video games. A 4-foot-tall stuffed Sonic the Hedgehog lounges on a well-worn sofa near a rack filled with *Wired*, *GamePro* and other computer-oriented magazines. In a side room, you'll find a row of PlayStations, set up for a Tecmo Bowl tournament. It's a Gen-Xer's idea of an after-school paradise.

Your grandmother might not approve, but there is a method to all this computer madness. Ferdig, a 35-year-old associate professor in UF's College of Education, is at the vanguard of a new generation of scholars who understand that video games just might be good for you. Rather than rotting kids' brains, those "wasted" hours in front of a glowing screen may actually have helped build better problem-solving skills, or so the new theory goes. And Ferdig is literally taking that idea

to school, exploring the ways video games — real, *fun* video games — can help teachers get their ideas across.

"Computers have been in the classroom for a couple of decades," he says. "But we're just now beginning to understand how to really use them."

Ferdig is the editor of the *Handbook of Research on Effective Electronic Gaming in Education*, the first-ever comprehensive compilation of research on what has become a hot topic: the educational benefits of video games. Drawing on research from 150 authors in 15 countries, the 1,759-page, three-volume collection goes far beyond the old "skill-and-drill" approach that characterized early efforts at educational computing — efforts like Oregon Trail and Reader Rabbit — and asks deeper questions about the games people play. Why do some kids struggle to learn their ABCs but have no problem memorizing the names of characters in Pokemon? How can we make educational games with the appeal and addictive power of Super Mario? Better yet, how can we turn existing games into teaching tools?

“People are beginning to realize that when kids disappear into an online world, they’re learning at an amazing rate,” he says. “But most of us don’t realize that they’re also developing self-confidence and identity, and maybe even trying a new job.”

Ferdig has been conducting in-depth research on the psychology of video gaming for most of his life, though for much of that time he didn’t know it was research. As a kid in Holland, Mich., he whiled away the snow days in front of a video console. As a graduate student at Michigan State University and later as a visiting scholar at WSP Teacher Training College in Krakow, Poland, he would study and teach educational psychology by day, then spend his nights blasting his colleagues to smithereens in networked games of Doom and Duke Nukem.

One of Ferdig’s friends suggested his gaming might be, well, unhealthy. It might have been meant as a warning, but Ferdig and his gaming buddies took the question more philosophically.

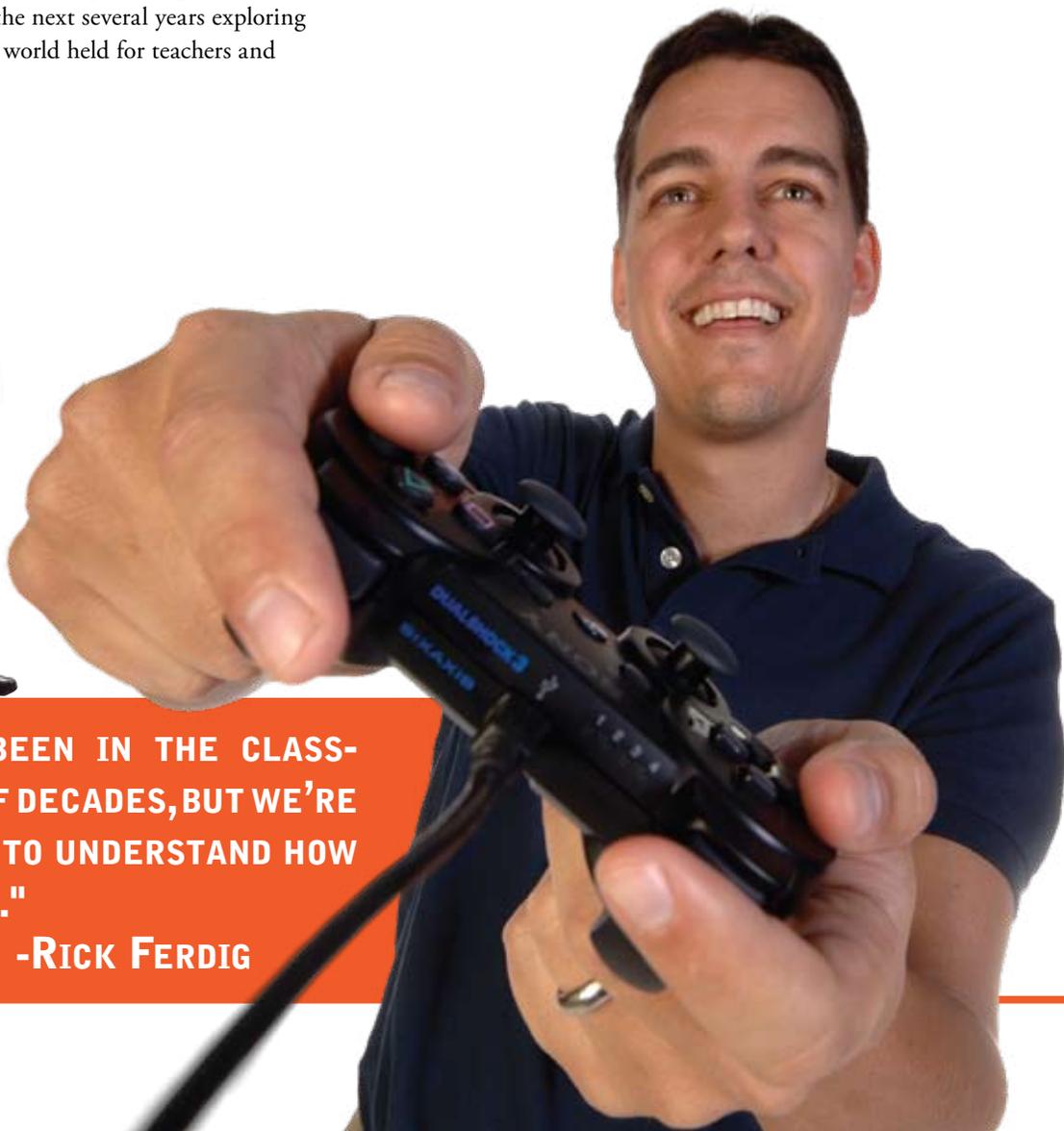
“We started this in-depth conversation about what we were accomplishing by doing this,” Ferdig says.

For Ferdig, that conversation grew, and is still growing. Applying his background in educational psychology to the evolving Internet, Ferdig spent the next several years exploring the implications the new online world held for teachers and students.

Pioneering though it is, gaming is not Ferdig’s only avenue of research, or even his best known. As the principal investigator on a \$600,000 grant from the AT&T Foundation, Ferdig is heading the first comprehensive assessment of practices in the nation’s growing number of virtual K-12 schools.

More than a decade has passed since states across the U.S. began investing in “distance education” programs for K-12 students — programs that would use the Internet to allow students anywhere to take courses from teachers qualified in hard-to-find subjects such as Latin, macroeconomics or Advanced Placement physics. The boom in online learning has opened new academic doors to home-schooled kids and students in rural areas, but there is little data to show whether the rising tide has lifted all boats.

“In most virtual schools, the final grades are sent to the schools and are stored and tracked by the schools,” Ferdig says. “Most states haven’t done a detailed analysis of which courses are really effective in producing learning gains, or which techniques are working.”



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Ferdig isn't accusing the virtual schools of selling "silicon snake oil." There's already research to show that, in general, online students learn just as much or more than students in traditional classrooms. What's lacking in virtual high schools, however, is a detailed look at who is learning, how much, and why.

"Florida, for instance, may know that its online students generally do well on standardized tests," Ferdig says. "But does virtual schooling work as well for students in Miami as it does for students in Gainesville? And if it doesn't, why not? That's what teachers really want to know, and that's the kind of data we're collecting."

The project reaches well beyond Florida, however. In all, 22 states are participating, offering Ferdig data on millions of students. And Ferdig is looking at more than just grades and lesson plans. The most important elements in online learners' success, he says, may not be the things you see on the computer screen.

"Learning online takes more than a teacher, a student and a couple of computers," Ferdig says. "We're very interested in the support the students receive. How much help do they get from parents, and from mentor teachers in their schools? Do administrators understand the role of virtual schooling, and how does their understanding affect the results their students have in online courses?"

Alex Brown, a 17-year-old senior at Santa Fe High School, has taken two virtual classes and knows what is necessary to succeed in them. Brown took Personal Fitness and Life Management Skills through Florida Virtual School, a 90-course virtual school that served 60,000 K-12 students in the '07-'08 school year. She received an A in both classes.

"My teacher was really nice and helpful," Alex says. "It was really easy to learn because I got to do it at my own pace. I could work out on my treadmill, under the fan, with my music on."

Alex would study modules online and converse with fellow classmates in message boards. She also would speak to her instructor on the phone to discuss that week's topic.

"I liked the setup a lot," she says. "It was easy to express yourself and work on your own schedule."

That's an aspect Alex's mother, Chris Brown, liked as well.

"The teacher was available throughout the day," Brown says. "I could talk to her about how Alex was doing whenever I needed to."

Alex had to exercise regularly and record her activities in a work log. Brown would then sign off that the log was accurate.



It was never a problem making sure Alex did the work, Chris Brown says.

“I think the flexibility was key. She would have had to drop anatomy or art, which she really loved,” if the classes hadn’t been available online.

Chris Brown acknowledged that engaged parents are essential to virtual schooling, though.

“A student without an involved parent could make the work logs up.”

While many virtual school teachers have successfully made the transition from the classroom, as the program grows Ferdig worries that there won’t be enough technically savvy instructors. That’s why Ferdig is working with colleagues at UF and bucking tradition by piloting the nation’s first online teaching internship.

“The old adage was that you needed to have three to five years of classroom experience in order to excel in an online teaching environment,” Ferdig says. “But it’s really kind of hard to see why that face-to-face teaching requirement is in place.”

In the traditional classroom, Ferdig notes, an expert teacher is one who can diagram sentences or do long division while monitoring 15 to 30 kids in a single room. Anyone who has tried that can tell you that it takes a special talent, and most teachers look unfavorably on any teacher preparation program that doesn’t require its students to get some experience in the classroom.

Teaching online requires special talents, too, but not necessarily the ones you need in a face-to-face classroom, Ferdig says.

“Online, I don’t have to worry about whether Johnny is throwing paper at Sarah, or Sarah is sticking gum under her chair,” Ferdig says. “But I do have to worry about a number of other things — like creating community among students who can’t see each other and moderating discussions online.”

In cooperation with the Florida Virtual School (the nation’s largest virtual K-12 school), Ferdig recently supervised a group of education majors in an on-the-job training experience that had them looking over the shoulders of the state’s best online teachers, all without leaving Ferdig’s lab in the basement of historic Norman Hall.

The virtual internship may go against the grain of the teaching profession, but it’s just one example of Ferdig’s outside-the-box approach to education and technology. For another, just follow Ferdig on one of his trips to Rwanda, where he is helping school officials come up with ways to bring 21st-century educational technology to schools that sometimes can’t even afford pencils and paper.

“Rwanda is probably the last place most Americans would expect kids to be using computers in schools,” Ferdig says. “After all, we’re talking about a place where students sometimes have to practice writing in the dirt because they can’t afford school supplies. But they’re ready.”

Known to most of the world for the brutal civil war it endured in the 1990s, Rwanda is looking for ways to start over, rebuild and attract foreign investment. As in many African countries, Rwanda’s educators have big dreams for public education, but they lack the infrastructure to make those dreams a reality.

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But the Rwandans see their under-resourced schools as clean slates, ready to be converted into 21st-century wired classrooms. Provided, of course, that someone finds computers they can afford.

Ferdig, whose travel was funded by UF's Center for African Studies, has been looking for ways to use handheld computers to meet those needs. While people in the United States use PDAs mostly as portable address books, the tiny devices have far more computing power than the Apple IIe computers American schools were using in Ferdig's high school years. PDAs are easily transported from school to school, and unlike the famed "\$100 laptop," they're readily available right now.

Ferdig is also looking for ways to introduce software that meets the Rwandans where they live. Too often, when educational books or computer games make their way to crowded African cities and remote rural villages, they're hand-me-downs from the West, depicting suburban environments that are alien to many Africans. Ferdig is looking for ways to Africanize the content of the educational software the Rwandans use in the future.

While Rwanda may seem worlds away from his lab in Gainesville, Ferdig sees a common theme in all of his work in educational technology. Whether you're bringing handheld computers to Africa or setting up a virtual high school in the U.S., he says, educational computing is about more than devices with bells and whistles. The computer works as an educational tool because it gives kids a chance to use their knowledge to create new things — and the power to show those creations to the public.

"If kids aren't creating something," he says. "They aren't learning." ✕

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