



Quardev Monthly

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Welcome!

Welcome to the Quardev Monthly !

We look forward to sharing insights and helpful information in the areas where we know a thing or two - testing, quality assurance, technical writing and documentation, project management, and consulting.

This month we want to share an experience report from a recent project that involved testing software and electronic

whiteboards. The article is a joint collaboration between Jacob Stevens, Senior Test Lead, Ian Botts, Senior Test Lead, and our guest editor Jon Bach, QA Manager at NexisLexis.

Enjoy the newsletter with our compliments and please contact us with questions, comments, or article ideas.

-The Quardev Crew!!

Education and Electronic Whiteboards

Contributors: Jacob Stevens, Ian Botts, and Jon Bach.

Forget chalkboards, the classroom of the future will likely contain whiteboards. And not just whiteboards, electronic whiteboards. And imagine not just electronic whiteboards, but electronic whiteboards that are linked to software. In the middle of this marriage of technology stands a student, demonstrating knowledge.

This is the kind of configuration that Quardev was hired to test in a recent testing compatibility project for Oxford University Press, an educational software publisher.

The application was built in Flash and wrapped in a stand-alone application in order to be compatible not only with multiple operating systems but also multiple whiteboard technologies.

Having a technology "marriage" of software and hardware like this for learning instruction leads to having an electronic, centralized tool set in the classroom. No more locked desk

or cabinets containing pencils and paper; no more secret teacher's edition versions of textbooks. Imagine instead a projector connected to a laptop at the front of the classroom, projecting a fill-in-the-blanks math problem. The student goes to the front of the room to the electronic whiteboard to fill in those blanks.

Those answers are captured by the software because the marker and the whiteboard are equipped with sensors that record its travel, converts it, and then records it by the software, thus embedding it just as if it was written on the laptop itself. Vector-based graphics technology for this application uses the Windows interface layer to create overlays of different kinds of User Interfaces (UIs).

In short, this is virtualized learning - a "three-dimensional" experience where the student is immersed in the text. Not just writing, not just presenting, but interacting.

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With this interactive setup (which can include customized, dynamic content), the student may be better able to demonstrate an ability to retain information or problem-solve in front of others, just as the Nintendo Wii encourages game enthusiasts to get up off the sofa and interact physically with what is seen on the screen. This means that learning is more of an experience, not just information to absorb and regurgitate. In this scenario, education becomes more engaging rather than something that most students suffer through. It gives the student experience in presenting, but it also gives a chance to collaborate electronically on exercises because each student can write on a different layer (or overlay) of the software and then project it for everyone to see.

"When I saw the capabilities of the software-whiteboard interaction, I realized the number of things it could do to enrich the experience of both teacher and student," said Jacob Stevens, a Quardev tester on the Oxford University Press project. "It was incredible."

With any hardware-software mix there may be compatibility considerations for testing. After exploring the software and whiteboard independently, Quardev implemented a test matrix of both the Mac and PC platforms. From this matrix, test sessions were created that allowed the Quardev team to track progress toward coverage. The team managed their testing through the use of sessions (time-based exploratory testing with charters, or mission statements) which allowed them the freedom to learn the context in a short amount of time, but also be accountable to project stakeholders by way of reports about their testing toward those missions.

The application not only had text and graphic elements but also audio, fill in the blanks, "circle-the-correct" statements, and checkboxes to select correct words and sentences, and a team-based quiz application. The aim was for it to be distributed globally, intended mainly to be used in Vietnam where 90 percent of schools are equipped with electronic white-

boards and PCs furnished by the Vietnamese government.

This was the first true application of its type, and while many elements were in place to make this a next-generation learning experience, the door for future expansion was left open. With one or two more integrations and feature expansions of a product like this then the education interactive learning space could revolutionize teaching for all groups internationally.

Quardev Test Manager Ian Botts said, "This type of interactive innovation is, in my opinion, as significant as the printing press was to the distribution of knowledge and thought."

The ability to involve a student in an immersive environment but also allow the student to interact with peers in a collaborative and positive setting might help knowledge retention but could also build a foundation for other necessary social skills required in today's competitive workplace.

With that kind of meaning and significance behind the software testing projects we get here at Quardev, we hope to leverage our years experience in education technology to work on many more projects in the educational vertical.