

Case study

Digital Animation Studio at Middlebury College chooses HP 3D Structured Light Scanner Pro S3 with Dual Camera to enhance creativity



Incorporating the HP 3D Scanner into the digital animation workflow enables creators to focus on art first and technology second

Industry

- Digital Animation

Approach

- Deploy HP 3D Structured Light Scanner with Dual Camera into the digital animation creation workflow

Challenge

- Fill the gap between creating a concept with physical tools and bringing the concept into the virtual world of digital animation
- Focus on art first and technology second for students studying digital animation
- Improve quality in creation of digital characters and keep students engaged in the whole digital animation process

Solution

- Incorporate HP 3D Structured Light Scanning into the digital animation creation process
- Capture the character concept which was hand sculpted in clay, then digitize this clay model with the HP 3D Scanner
- Utilize the high-resolution mesh created by the HP 3D Structured Light Scanner as a basis for digital animation

Results

- Within an hour, animators are able to manipulate their hand sculpted clay model in a virtual space
- Students are more involved with the creation of digital animation
- Digital animators can concentrate on their art and improve the quality of their digital animation characters, without wrestling with technology



“Sculpting an object with your hands creates an idea in your mind of what that object is. To see that exact same object appear on the screen in a virtual space for the first time is magic.”

– Daniel Houghton, Director, Middlebury College Animation Studio

In the year since they added the HP 3D Structured Light Scanner Pro S3 with Dual Camera to their workflow, Middlebury College Animation Studio have been able to bridge the gap between creating the concept of a character with traditional methods (such as hand-sculpting with clay), and being able to easily digitize this physical concept, ready to import into a digital animation environment. Because the physical object can be digitized within an hour with the HP 3D Structured Light Scanner, digital animation students can concentrate on creating great concepts, without worrying about the application of technology to bring concepts to life digitally.



**Middlebury
College**

“When the students sit down with the 3D Scanner for the first time, they are genuinely excited. They get to see something they made with their hands come to life on the screen, in a way that they never have before.”

– Daniel Houghton, Director, Middlebury College Animation Studio

Challenge

HP 3D scanner fills the gap

Daniel Houghton, the Director of Middlebury College Animation Studio, is working to foster the next wave of digital animators. Despite keeping up with the latest technological innovations in the digital animation space, there remained a gap in his process.

“How do you go from the concept of a character to a 3-dimensional digital character, to be animated in your short film?”

Creating a digital character from scratch is extremely difficult. Students were finding that they couldn't make the character they were recreating in their digital animation software match what was in their minds. What was being created in the virtual space lacked the fidelity of their real-world drawings.

The digital animation process was also time-consuming. While a student could draw a character in minutes, recreating it on screen would take many hours. Adding a third dimension to the character, plus a virtual world for it to exist in and play out a story, would take even longer.

Students were becoming disillusioned with the digital animation process. They were spending too much time wrestling with technology. To build up their skill set, they needed to spend time conceptualizing, drawing and animating. Art was suffering at the expense of technology.

Solution

Precision, accuracy and speed are key

In 2016, Daniel incorporated the HP 3D Structured Light Scanner Pro S3 with Dual Camera into his setup. Students conceptualize a character, then sculpt that character out of clay. The sculpted character is placed on the scanner's turntable. As the turntable spins, it scans 12 dimensions of the clay model, covering all 360 degrees. The 3D scanning technology does the rest.

Daniel explains, “The scanner bar has two cameras on it, each pointing in at the object, capturing the object from two angles at the

same time. It allows us, with a single scan, to capture an object with a fidelity that we can quickly complete.”

The HP 3D Structured Light Scanner with dual camera works with exceptional precision and accuracy, capturing everything to the smallest minute detail. It is fast and simple to use. It also provides accuracy, enabling Daniel's students to create high quality digital characters for animation. “It provides a high-resolution mesh of anything you put in front of it. This lets us throw a clay object down on the turntable, and within an hour or so, get a workable 3D mesh that we can start putting into our animation projects.” Multiple scans are fused together to create a watertight 360-degree digital surface model. The 3D mesh produced by the 3D scanner is then exported to digital animation software, where the character is brought to life.

Results

Focus on what matters

In one sitting, a digital animator can go from a simple line drawing, to a clay sculpture, to a workable 3D mesh. It was no longer a complicated, technically challenging process to go from concept to producing a high-quality 3D digital character.

Students could quickly see the results of their concepts and collaborate as a team. Students with different skill sets are now coming together, playing and experimenting. They can see that professional standard digital animation is achievable for them.

They also can now experience the raw thrill of seeing something they created come alive. Daniel explains, “They've seen something they made in the real world exist in the virtual world, in a way that they never could before.”

The features of the digital animator's art that were being lost in the technological aspect of the process, line, form and shape, now translate perfectly into the digitized world. Daniel sums it up, “With the arrival of the HP 3D Structured Light Scanner, finally we were able to begin with art first and wrestle with technology second.”

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