Cross Disciplinary Virtual Reality for Lighting and Composition

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I. OVERVIEW
Advanced technology has made Virtual Reality a viable tool for widespread multidisciplinary use. We saw an opportunity to use VR to benefit multiple departments at RIT; 3D Digital Design, Industrial Design, Interior Design, and the School of Film and Animation. All departments wrestle with the problem of effectively allowing the students the speed to iteratively light, compose and compare work. The complexity and length of rendering time using previous generation (CPU rendering) 3D applications distracts learners from focusing on design. Light and Composition are two major elements of designs that are often buried under overwhelming technical obstacles.

Fig. 1. Accelerated Spline Tools for Lighting & Layout

VR is intuitive, realistic, and renders in real time (using the GPU). We developed design challenges, tools and tutorials for our students to accelerate their design within VR for understanding light and composition. The result was that their rendering quality improves, and our curricular vision gets implemented seamlessly. Pre-visualization, cinematography and environment design are three areas that we are already seeing improved results by students using our research.

Fig. 2. Tiltbrush for Cinematography & Composition

II. CONCLUSION
Immersing the creator and giving tools for instantly visualizing multiple potential shots as well as accelerating the application of materials and lighting allows for greater comparative iteration. Both approaches required additional hardware, software, and cinematic knowledge into curriculum. The integration of both a technical approach with scripted procedural toolsets as well as a visualization strategy both proved valuable to increasing quality of student work.