

3D Animation: Difficult or Impossible to Teach and Learn?

Moderator

Francis Schmidt

Bergen Community College

Panelist

Jim Jagger

Panelist

Jim McCambell

Ringling School of Art and
design

Panelist

Craig Slagel

Electronic Arts

Francis Schmidt - Position

Teaching the skills needed to animate in current 3D software is difficult. Learning it may be more so. Being the only totally digital art form, it does not fall neatly into computer science or art. It does share an abundance of the complexities and consternations of both. Current applications can feel like a hodge-podge of ideas from drafting, particle and Newtonian physics, geometry, and puppet animation, forcing the student to face the most complex interface in computerdom. The programs get harder to learn as you read this.

This panel is for anyone who has ever been frustrated by 3D software, which probably includes just about anybody who has ever tried one of these programs. The panelists attempt to determine the nature of current educational practice in 3D animation. They examine the situation from three viewpoints (user, creator, and educator) and search for a consensus on what works and what doesn't. Multiple insights will help us understand where we are in the evolution of 3D education and what directions to explore in the future.

Particular emphasis is placed on the existing model: coursework, demo projects, internships, employment, and continuing development of software. What are the negative and positive aspects of this situation? How does this compare to other areas (film and video, photography) of digital imagery training? Who is getting what they need out of the situation? Should education be application-specific? Should it be delivered in a trade school or a liberal arts college?

Panelists were selected for their positions in the infrastructure of 3D training: educator, employer, or software author. This may be the first time representatives from all these groups have gathered to discuss how people learn to produce the virtual worlds they create.

Jim Jagger – Position

My name is Jim Jagger and I am a Senior Animator within the video game industry. I have been a part of many AAA projects including the Tony Hawk and Neverwinter Nights series. My love for animation began at the age of six when I fell under the spell of Disney's 'Snow White and the Seven Dwarfs'. As a child, I started animating as a hobby and though it has since become my career, it has never ceased to provide the enjoyment and fulfillment it did as a youth.

As an industry professional and a former student of Computer Animation (BA Hons - England), I feel I would be in an excellent position to discuss what is being taught and what needs to be taught in schools and colleges today.

I studied Computer Visualisation and Animation at Bournemouth University, England, where the philosophy was that practitioners need a good understanding of both the technical and creative aspects of the Computer Graphics. The course covered theory and practice relating to computer visualisation and animation including, for example, programming and maths as well as 3D computer animation and related practical skills.

I am of the strong opinion that that to be a great animator it is vital to have both a flair for timing, weight, acting and performance as well as a core technical understanding. Having worked in studios in the UK, US and Canada, the strongest animators I have met are those who balance their technical and artistic understandings equally.

In my opinion, practical experience is a bonus but not essential. Why spend an additional year at University only to mount more debt and be paid pittance while working as an intern? Complete your course and apply for work as a professional. In all my time making video games, I have never seen a company willing to take an intern.

Although most animation students will rile at the thought of studying the fundamental maths behind 3D graphics (as I did at the time), with hindsight I passionately believe this is the best way to approach 3D animation and prepare yourself for the future. Nobody knows how computer animation will develop in the future. By having a technical foundation you will be in a far stronger position to evolve.

Jim McCambell -Position.

It is difficult, but absolutely not impossible to teach 3D animation successfully at the college level. The challenges do not come so much from issues of hardware and software, but instead from harnessing much more elusive resources such as people, focus, work ethic, and of course... time.

Teaching computer animation requires a tremendous time commitment on behalf of both faculty member and student that extends far beyond regularly scheduled class time. Both must be prepared to make this investment. Many institutions tout the usage of industry professionals as adjunct faculty as an advantage, but, more often than not, these talented individuals are unable to commit the kind of time it takes to guide students sufficiently and structure curriculum with the larger Institutional picture in mind.

To be truly successful, teaching 3D animation requires a faculty which is highly collaborative, and one which is willing and able to donate a considerable amount of personal time towards creating a curriculum that is integrated. It is imperative that students make connections across classes and visualize each course's contribution to the production pipeline. If they don't, they will invest themselves only in the classes in which they see the apparent value. This typically means they will work hard in the courses that teach 3D software, and forsake the others... even though those others may be the very courses which would have given them the conceptual skills that would have resulted in something significant to animate.

One of the most overlooked components of a successful curriculum is balance. Students who excel in computer animation are typically adept both technically and conceptually. Savvy faculty will recognize that good storytelling skills come from two different areas... 3D and Concept Development. Too many programs today lean too heavily in one direction or the other. Too much 3D and not enough Concept and you will have a host of sword fights, fantasy characters, Anime, and aliens. Too much Concept and not enough 3D frequently results in animation rife with technical errors or ideas that are so complicated they become cumbersome and tedious to watch. A properly designed curriculum will teach the methods of idea generation and refinement with the same fervor as they do courses using 3D software. Done properly, the result is a well-developed, unique idea executed with a convincing performance that exudes personality.

Another point to be made on the topic of successful teaching is the structure of lab time. We have found that it is important to make sure that students do not work in the vacuum of their own dorm rooms, but instead in the animation labs as a group. Using the labs as a learning space provides an opportunity for the cross-pollination of ideas and techniques. It enhances student learning by exposing them to the methodology of faculty other than the ones teaching their classes, and the students comprehend the material better when they help each other problem-solve. The ability to work in a collaborative group is a highly desirable skill, and a non-competitive, supportive group of peers instills a sense of camaraderie and underscores the power of using a group for problem-solving.

Lastly, since I am running out of room here, I would recommend that faculty avoid approaching any 3D class from the angle of teaching software. Instead, the class should focus on teaching animation and storytelling skills... you just happen to be accomplishing that using (your favorite brand here) software. This approach helps students realize that you are able to differentiate the tool from the craft, and will set them on the course toward developing an aesthetic that is story-centered rather than technology-centered

Craig Slagel – Position

Teaching 3D animation is difficult – but not impossible. EA has been training its employees in 3D animation for more than 4 years now. From our experience, it is certainly easier when you have students who are willing to learn, but more importantly, being open to different techniques is what makes training most effective.

On this panel, Slagel will share his expertise on different aspects of teaching 3D animation that has been nurtured for more than a decade as a trainer. Slagel has been responsible for the development and delivery of training at EA studios worldwide for more than 4 years. EA's training department, known as "EA University," works closely with and trades pointers with leading University professors and Trainers of 3D animation, who often times contribute their time and expertise to training EA employees.

In this panel, Slagel can address the various techniques that can be used to teach 3D animation, i.e. hands-on training. Giving students the opportunity to have fun, and letting them create whatever they want (within some guidelines), has proven to be the most effective way to learn. At EA, we use tutorials selectively – more or less as a starting point – because understanding the concept of animation is what really helps artists succeed. We also look at other industries for inspiration and techniques – film, architecture, industrial design and acting are a few. In fact, we teach an “acting in animation” course at EA that helps our artists better understand facial expressions and body movements.

In games there are many limitations to consider, because we are working in real-time and we are restricted by technology. As we gear up for next generation games and consoles, there will be new courses to teach that address techniques currently used in film, as well as game techniques that we are unable to use now.

Electronic Arts is well positioned to address this topic at Siggraph. EA's Worldwide Graphics Training program provides employees with the best technical and aesthetic training that enhances their skills and our products to a level that leads the game industry.

We have designed a curriculum and a facility that reflects the changing demands of the evolving interactive entertainment industry. We have also designed a flexible learning environment that is responsive to production needs. By delivering courses that meet artists' immediate production needs, and adding to their skills, we make them more productive and better artists. While technology offers new and complex challenges, it is our charge to teach artists to interact with these tools transparently. We enable our artists to perform again as artists - teaching both proficiency and creativity. By combining both technical proficiency with a strong foundation in the traditional fundamentals of art and design, we are able complement both the digital and analog aspects of our artists' needs