

Improving Instruction and Staff Development by Building K-12/University Partnerships

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Artists have long been the voice of society and civilization. Whether creating art for the masses, for the select few or for themselves, they have kept a finger on the pulse of evolution. Computer animators bring life to the imagination with digital manipulation and personal observation from high up on the wave of the Zeitgeist, by producing art that has strong didactic and entertainment potential.

As a computer animator working in three-dimensional graphics, one of us draws on personal experience to give clients an interpretation of the concept they have developed for a particular project, client, or design. As a teacher of computer animation, he gives his students a peek into a finite world that allows for an incalculable number of personal interpretations of any single idea or vision. Most of those students are seeking a Master of Arts degree in communication arts, specializing in computer graphics for advertising design and animation, or in television production. Many of them have little or no experience with computers; most are traditional artists. With those students, a good place to start is by having them tap into their own experiences and resources to develop a personalized approach to 3D graphics, without letting the complexity and technical demands of this medium discourage them from pursuing a career in animation. The most challenging aspect of the job is the varied levels of computer literacy and 3D theory encountered in those classes.

What has made the job of college instructor easier is that the growing use of computer animation for educa-

tion, science, business, medicine, law, and entertainment has widened the playing field for the animators of the future. People from all walks of life are likely to find something that will interest and occupy them in computer animation. Far from dehumanizing, the computer has the power to bring the individual closer to the life rhythms that fuel the artist's vision.

Computer graphics has truly become an artist's medium; it is now a matter of making these new tools available to those who would benefit most from using them. As an introduction for these university-level students, we like to tell them that they have all been prepared to work in 3D computer animation, because they live in a three-dimensional world. They are asked to think of tasks they might have performed recently, or observations they might recollect with any sort of detail. Have they looked, but really looked, at the way light reflects off an apple, or the way sunlight enters through a window? One student actually said that she had no practical experience that relates to 3D modeling, but she had been working as a recreational therapist in arts and crafts.

What is most fascinating about working in 3D is that instructors are called upon to connect with and use almost everything they have learned and experienced in an entire lifetime. Some connections are obvious and quite practical: photography, ceramics, sculpture, fabric design, dance, and music. Some are less obvious: watching television, reading, looking up at clouds, cutting up a pear (while observing it carefully) and just living and soaking up

the environment. It is good to think that everything is useful because 3D is so all encompassing. A recent project had one of us digging into memories of observing abdominal surgery because the client wanted realistic "living" organs: a heart, a stomach, and intestines. Photographs were a big help, but what helped most were recollections of light, translucent and reflective tissue, and true, living color.

Today, 3D software packages are available for the PC, and they range in price from the very affordable to the expensive, but not quite as expensive as they were five or 10 years ago. That affordability was the impetus for this paper. We wondered about ways in which university and K-12 educators might collaborate to take advantage of all that is now available. Many elementary and high school students are actually already experimenting with computer graphics and 3D art; the animators of the future are already training and preparing themselves for this growing industry. As educators at these different levels, we can all work together to guide and motivate students who have an interest in the field and want to acquire practical skills that could further their goals as future animators. Besides the obvious – skills in traditional animation, computer science, film and video – there are a number of extremely useful endeavors that would assist students in their goals of entering this field. These are just a few of them: dramatic arts (acting, directing, lighting, set design), performing arts (dance, music, opera), writing, storytelling, studies in folklore and mythology, photography, yearbook layout and illustration, drawing, painting, color

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theory, sculpture, ceramics science, physical and biological sciences, history, art history, architecture, mathematics/geometry, computer-related and business-related communication, sports and physical activity in general, television and film production.

A student can derive a great deal of pleasure from a project that focuses on personal interests. A teacher can get a lot of mileage out of that student with a well-directed project, and a lot can be learned by both of them in collaboration. One of us has strong memories of a dialogue written for high school Spanish that would easily translate into a good animated short. It is based on a fable by La Fontaine.

How does this partnership work? The North Rockland Central School District and New York Institute of Technology are near one another but are certainly not next door to one another. NYIT has several campuses, but the closest is at least a 90-minute commute from the school district. So, the partnership was established using the facilities of the district. Fortunately, North Rockland is a public school district with a strong commitment to technology and the arts. The district, which has 7,500 students, commits over \$1.5 million per year to technology, creating state-of-the-art computer laboratories, placing computers in individual classrooms, and putting time and money into staff development. The commitment to staff development is also reflected in the presence of a busy Teachers' Center. It is the Teachers' Center that manages the program that NYIT offers in Rockland, taking care of the mundane details of registration, room assign-

ments, etc. The Teachers' Center is located in North Rockland, but it also provides staff development for eight other school districts, thereby increasing the pool of students.

A consideration of such a partnership is that it must operate within the context of the needs of the participating teachers. There are many teachers in the region who are anxious to explore the use of computer graphics. However, the reality of the certification rules in New York and New Jersey (the areas served by the partnership) is that most teachers cannot achieve certification with degrees in computer graphics. What we have done through our partnership is incorporate significant components of computer graphics into education courses that meet the state standards for certification. Teachers in our courses explore successful models of the use of computer graphics in schools. As an example, as part of a computer graphics component of our Introduction to Educational Technology course, one of our students explored art education in traditional classes (Dana 1993) and in gifted and talented classes (Banbury 1996). One of the ways we have made those courses successful is through an annual Summer Institute in Educational Computing, which the North Rockland School district runs with the support and assistance of NYIT. That institute gives K-12 faculty an opportunity to explore a number of areas relating technology to education. Computer graphics is always one of the more popular.

What impact has the partnership had on our students? Because of the train-

ing that our faculty have received in a variety of courses in the NYIT partnership, our teachers are using computer graphics at many levels with their students. At the elementary and middle school levels, teachers use programs as simple as Microsoft Paint and Print Shop to teach basic concepts in art and design. At the secondary level, teachers across many curriculum areas use software such as Photoshop, AutoCad, and Corel Draw to help students learn concepts of art, design, and even engineering.

As we contemplate the many digital microcosms of 3D graphics, we think of Vincente Huidobro, a Dada and "Creationist" poet. His aesthetic theory for Creationism proposed to "create a poem the way Nature makes a tree _ make real that which does not exist ... say things which [without you] will never be said," and ultimately stated that "the poet is a small God."

References

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