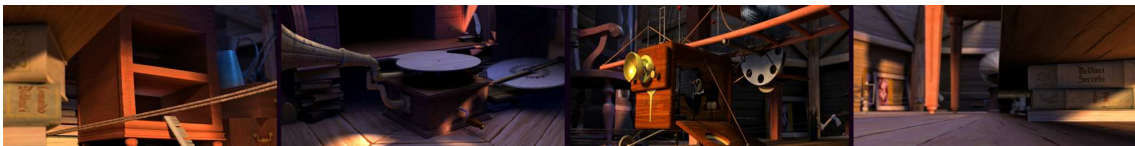# TEACHING CGI THROUGH REAL HANDS-ON EXPERIENCE

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Some 3D backgrounds produced by Euroview Animation for the feature film "Flying Heroes"

Abstract: Euroview Animation is developing a methodology for teaching CGI within the Department of Film, TV & Digital Media at the University of Navarra involving the participation of the students in actual production process. We base our educational methodology on the real hands-on experience: our students learn through their participation in the production of a real feature film. The production process of the film inspires and determines the learning process of our students. We consider that our project can be valuable for other educators in CGI because (1) our method has real consequences: our first feature film, Flying Heroes, will be in theaters in 2008, (2) as far as we know, this is the first of-its-kind experience with these requirements in a university and in the industry (3) this kind of project offers many possibilities of collaboration between universities.

Keywords: CGI, real hands-on experience, feature film, University, education.

1. Introduction

Our observation of teaching CGI production and also our experience in the industry has shown us that the usual teaching method has students develop isolated skills through fictitious exercises (not real projects in the professional world). We, at the University of Navarra School of Communications, think that this way of presenting the material lacks both in breadth and in depth. We are proposing a methodology that is more global and that includes the total production of CGI within the educational context of the university.

2. Education Goals

Our objective is to educate students within the University who, in the future, can work in the CGI industry, especially in the area of production. In order to make this a reality,

1- We will offer a real working environment with real projects (see last page)

2- The methodology should utilize long projects (at least one school year in length) and provide continuity (the projects should tie into the next to be able to offer continuous education). A feature film, because of its production time and its characteristics is the ideal task for this project. Also, an animated series can be a good choice, because its long time production fits properly with the academic calendar. A shorter running production like an animated short could be more difficult to fit into a student's calendar. Also, a project with these characteristics will contribute to have the "global" vision we want to give to our students. We also consider that a real project, with "real times" (deadline, production calendar, etc.) is a good training for our students.

3- The method has to allow a considerable number of students (so a long time project like a feature film or a TV series would be a better project than a short one) to be involved and should be compatible with their schedules and theoretical and practical classes.

With this system, the students will learn first hand the flow of work in a real production over the course of approximately three years. We include the main stages of a regular CGI production: preproduction (scriptwriting, visual development, storyboard modeling, shading & texturing), production (lighting, animation, layout...) and postproduction (render, compositing...). Through their participation in the production, our students are able to assimilate little by little the production techniques as they grow in experience, responsibility and their ability to work as a team. The students know that it is real, not simply a task.

We specially focus in the production process, considering that a global overview of the work can give the students more global knowledge of the area. We consider technical skills to be important, but regard them as mere tools. We give the students enough training to learn all the technical skills they could need to do their work, but we try to emphasize a more producer-point-of-view preparation of our students. It is a double-side goal: we want them to "know" and "know how".

Students learn directly from the production process. Being involved in it help them to get a general overview of all the stages, and work in each of them help the students to have the tools (theoretical and practical) to "know" and "know how" to work in every phase of the process. For example, they learn:

- scheduling and budgeting
- production planning
- project tracking
- team coordination

They know every part of the process working with Euroview staff, from the very early stages to the final ones, and also they receive a theoretical complementary education. It's like a strong internship with a strong theoretical education. Also, they have the opportunity to put in practice some knowledge they learn in other classes in the School of Communication, so it contributes to the "global" learning and practice we promote with our project.

3. Methodology

The methodology of the production work is similar to other production companies in the industry. The production plan marks out the calendar of work, not only for the production staff, but also for the students that are collaborating in it.
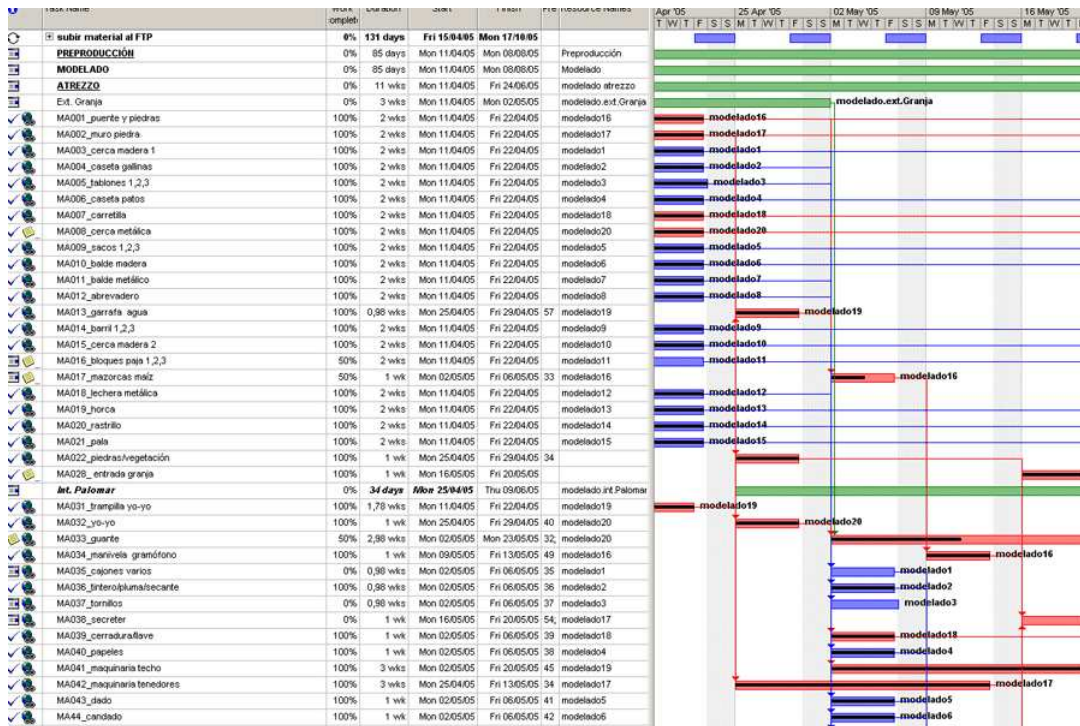
Piece of the Production Chart used in the production of the film Flying Heroes

The recruitment of the students is done through a selection process which includes a review of their resume, academic transcripts, and a personal interview. The application to this program is voluntary. As an extra-curricular activity, this program is not part of any course of the department.

Prior to the hands-on work, the student will have received the necessary skills for the task through their theoretical/practical sessions and the didactic materials developed specifically by Euroview for this purpose (video tutorials about the software and some practical skills, articles -some internally elaborated and others that we find in our continuous research-, a "hand made" manual, etc.).
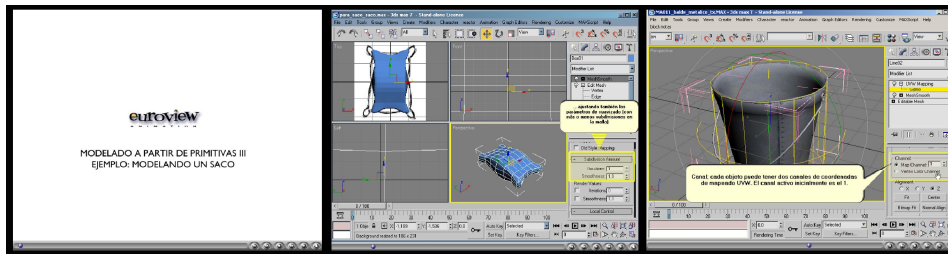
Several screens of Euroview´s self made video tutorials

Each student dedicates 8 hours each week to Euroview in blocks of at least 4 hours. When the student arrives, he or she will find a task card on their desk with the work that should be done and the time it should take according to the production plan. All the task cards and material are properly linked to the production plan, and the whole material is properly stored in a server every computer is connected to. To manage and control the huge amount of information created through the production, we have built an asset tracker and manager system that is connected to a powerful processing center.

We include some material we use in our project:

-Making of: this video shows some of our students working in the studio, to give an overview of Euroview environment

- Tutorials: tutorials are some of the early material our students work with. First of all, we give them some theoretical classes about general concepts of the area. After that, we have some sessions to show them everything about the project (in this case, our first project, the feature film Flying Heroes). Before our students start to work with us in the different stages of the production, they watch the tutorials and practice with the tools we explain in them.

- Cards: every task (modeling, textures, layout, animation, etc.) in the production process is explained in a task card. We use the task card (always linked to the production chart) to distribute the work, assign it to each student and control de state of the production

- Animation: we use final videos as additional material for class discussion

Example of one of the student´s task cards

The student participates in all of the phases of production (always following the real calendar of production). We believe that in order to know each stage of CGI production it is helpful to know how to do the necessary tasks of each part of the production. For this reason, we promote a balanced combination of "knowing" and "knowing how to do" (one concrete example: our students know how to act as a producer, establish a production calendar referring to modeling tasks because they also have an understanding of modeling). The preparation we give to our students can be similar to the knowledge they could acquire in an internship, with some differences. They can come to Euroview once they start their studies in the University (we have students from first to last course). Also, we work inside the School of Communication building, it is like an "in house" internship to our students, they can easy coordinate their practice here with their classes. Furthermore, the University environment is a "plus" value to our students, they work in an academic ambiance. There is another big advantage to our students: we try to fit the production to their schedules, they don't have to change their schedules or loose classes to be in our production.

Each month, we have sessions with all of the students to explain them the current status of the production and to help them deepen in some concrete aspects of production.

At the same time, members of the production company give theoretical/practical classes of CGI production within the department.

4. Assessment

We give special importance to attendance, punctuality and seriousness in this work. If someone misses more than three appointments without a justifiable reason, he or she is replaced by another student.

The students do not have to pass an exam or do assignments. The method of evaluation is quality of their work. Our evaluation is the standard of real quality: the task that is being done is the same that is going to be seen on the screen. If the work that is done by the student does not achieve the quality desired for the film, the work is redone by the production staff.

5. Conclusions

After testing out this system for three years while co-producing a full-length film, we have educated 40 students. None of them have suffered academically due to their dedication to Euroview, and all of them say that the experience has been enriching and fundamental to understanding how to produce a full length CGI film.

The movie will be released in theaters in 2008.

Our objectives include the possibility of co-producing a project of these characteristics with this methodology, along with other universities. Our intention is that the different universities provide experience in their areas of specialization within production.

The possible economic benefits that are derived from the production will be reinvested in the development of this educational endeavor and for scholarships for the students.

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Our first feature film, FLYING HEROES
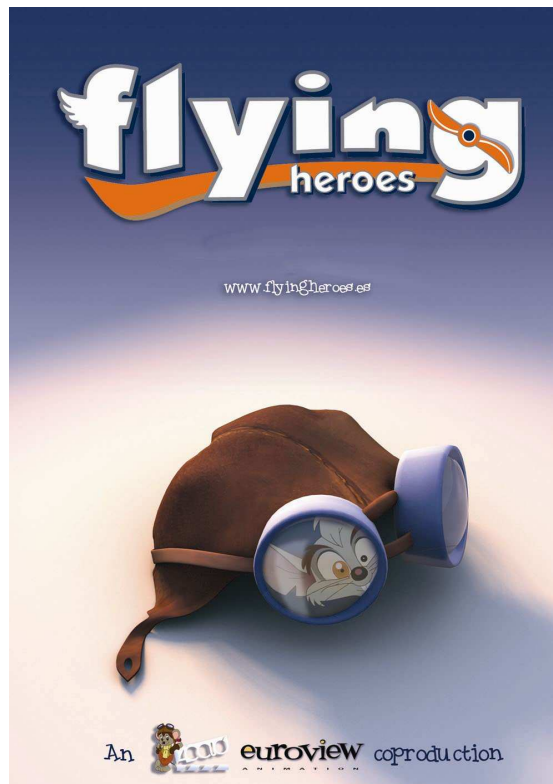
- An Acció, Euroview Animation, TV3 and DDF coproduction

- Budget: 7.000.000 Euro

- 85 minutes length

- 3 years of production, 40 students of the School of Communication in the University of Navarra has participated in the project

- About 100 professionals involved in the production, 5 teams in different cities

- www.flyingheroes.es

- Synopsis: October, 1918, the Argonne Forest (France). A wacky group of heroes come face to face with the crude reality of what and the cruelty of the falcon enemy. Their brave deeds will save their farm and the lives of more than 200 soldiers. Inspired in a real story.

-In theaters in 2008