

## Panel A1

Auditorium

# Education and Animation I

Matt Gidney

## "Herding Cats"

An Animation Studio Pipeline for University Students



### Abstract

**In this paper I want to understand challenges of approaching student animation production in a commercial manner. To what degree adopting automation and systematic production management techniques can help or hinder the quality of a creative and learning outcomes. John Gardener said, and we have observed, "Creative Minds Are Rarely Tidy" (Gardner, 1964). Often we find that students with the strongest creative potential will have an extra challenge beyond strong outcomes, that being to develop habits of process, communication and discipline.**

### Teams

Students enter university as individuals. Choices, risks, assessments and rewards are a contract between the individual and the University. (I am speaking broadly about undergraduate students here). There is normally an amount of group activity within subjects but ultimately this is sifted into a relationship between the university and the individual.

Commercial animation is a highly collaborative, creative activity. Digital production techniques have markedly changed the fidelity of the imagery being produced, yet not so the fact that animation remains a highly specialized and labor intensive activity. Look for example at the lengthy credits on any feature film that is animated or has a high content of visual effects. Studios engage creative and technical staff individually and place them in teams. Work is scheduled and broken down into activities that are executed by groups with similar skills and abilities. Creative teams are fundamental within commercial animation studios. Strong individuals who do not fit-in do not succeed in the larger studios (Catmull, 2014)

Animation undergraduates wishing to build a career within the expanding commercial animation industry must engage with two broad challenges. First to develop high level of craft skill and knowledge, and secondly to evolve those skills to be effective within creative teams.

### A Case Study

This paper presents a case study, examining the how students in a creative program engage with technology and function as creative teams. I look closely at the cohort of students engaged in the UTS animation programs. The cohort consists of some 300 students engaged in 3 and 4 year undergraduate degree programs. Work is normally done in our campus animation studio. The design of which increasingly resembles a commercial studio, with workstations, tools for production management and review, servers supporting rendering and storage resources.



Figure 1 Creative Group Work

I want to look at the strata of challenges students face and to try and understand if there are specific challenges that relate to highly creative students.

Ability, maturity, experience, expectations, social skills, work ethic, and confidence contribute to the momentum a student has to take on difficult tasks outside of their personal comfort zone and to succeed. These factors enabling creative success are amplified or frustrated when in a team. Where cooperation and negotiation are necessary, and the normal decision making pathways are interrupted for the individual.

To be able to gauge the students ability to succeed in industry, we try to create similar production environment on campus and reflect upon the process as being as significant as the outcome<sup>1</sup>. This micro studio dynamic represents the second

<sup>1</sup> Meaning the finished film or animation.

There are some key questions that we are attempting to understand.  
What kind of tasks effectively engage creative teams?  
What sort of creative teams best succeed in our animation studio?  
What studio structure provides enough relevance to a commercial studio? and yet can be easily maintained?  
What level of automation and convention is the best fit when the user base is relatively inexperienced and untechnical?

## Craft Skills and Automation

Beyond the interpersonal challenges of group work, students are introduced to tools and conventions that are unfamiliar and sometimes unintuitive.

Commercial animation studios leverage automation to efficiently accommodate repetition, and complexity. Maximizing in production efficiency directly effects the profitability and viability of a studio. The term 'pipeline' in a studio refers to the dependency and connectedness of processes and assets in a studio, it is a model of production defining how an idea becomes final frames and embodies automation, iteration and review.

Generally, as the scale of production becomes smaller the need for rigid pipelines diminishes. The lowest end of the model would be an individual student working alone creating work without any specific pattern or convention. Highly rigid pipelines are often purely database driven systems with custom user interfaces and complex dependency rule sets.<sup>2</sup> All aspects of production are defined and controlled. Somewhere in the middle then, is a model for small student teams who can get by with practically no automation, and a meandering approach to conventions such as naming, organizing work, and managing time.

There is a limit to the complexity of the work that one student can do in one semester, this is expanded in the group model, but this scalability is never linear (Brooks, n.d.). Understanding how to manage resources is an important aspect to learning which students might expect to acquire in their animation degree program, and should be seen as a valuable experiential outcome next to the final work. Therefore, it is important to create a framework that is systematic in design specifically to afford students the experience of a commercial studios strictures and methodologies.

## Results

In this case study I look at profiling productions to determine what type of studio pipeline best supports both learning and creative outcomes. This study remains in progress and will be published upon completion. The evolving tasks can be summarized as:

Survey to understand student ability and expectations,

---

To collect and evaluate evidence of student's organizational ability including their ability to estimate and understand the whole picture and their ability to recognize when a process can more effectively automated.

To evaluate student thoroughness of understanding of current and available tools.

Evaluate student inventiveness and tenacity to experiment.

Evaluate student agility to create their own systems of automation by combining existing toolsets, or creating new toolsets.

Assess the quality of outcomes against the process, the complexity and the ability of the creators.

The ultimate goal here is to design a metric that can be used to evaluate the best balance of technical skills and experiences, creative students will need to acquire during their undergraduate years.

Different learning styles, principles of universal design. (Bowe, 2000)

## Conclusions

Understanding and aligning the way in which we ask creative students to work in a studio structure aligns students to future employment opportunities. Whether or not graduates find themselves working within such a studio pipeline or are having to create one for their own projects, having experience of and understanding the rationale for the studio pipeline model is valuable, and enabling.

## Bibliography

- Bowe, F. G., 2000. *Universal Design in Education - Teaching Nontraditional Students*. Westport(Connecticut): Bergin and Garvey.
- Brooks, F. P., n.d. *The mythical man-month : essays on software engineering*. Reading(Mass): Addison-Wesley Pub. Co..
- Catmull, E. E. W. A., 2014. *Creativity, Inc. : overcoming the unseen forces that stand in the way of true inspiration*. s.l.:Random House Canada.
- Gardner, J. W., 1964. *Self-Renewal: The Individual and the Innovative Society*. New York: Harper & Row.

## Contact

Matt Gidney  
School of Design, University of Technology Sydney  
Broadway, NSW, AUSTRALIA  
matthew.gidney@uts.edu.au

## Briefly

I am currently senior lecturer in the design school at UTS, teaching animation.

I hold a BE with first class honours (UTS), Grad Dip in Film and Animation (Swinburne), MFA (UNSW).

My areas of interest and research include: software development for animation, photography and digital workflows, stereography, local and regional history.

I am relatively new to academia, having commenced at UTS just 3 years ago.

My industry experience and research as an engineer covered software development, field acoustics and oil field services, in particular wireline engineering within exploration.

However, in the past 25 years I have been heavily involved with the emergent animation and visual effects industries. I have had key craft and supervisory roles in companies such as Lucasfilm, Animal Logic, The Moving Picture Company, Framestore, and Double Negative. I have been visual effect supervisor, CG supervisor, Stereo supervisor, Digital supervisor, Technical director, Animator and FX artist across many titles including "The Lego Movie", "The Clone Wars", "Troy", "The Matrix Revolutions", "Charlie and the Chocolate Factory", "The Medallion", "The Lord of the Rings", "Chopper", "Legend of the Guardians", "Pitch Black", and a myriad of commercials and short form work.

My own films exhibited in The Sydney Film Festival, Tropfest and The Melbourne Film Festival.

I am the main developer for all animation studio tools at UTS.