

Building the World-Wide Community of Graphics Educators

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Abstract

The fast pace of change in the computer graphics (CG) field makes it difficult for educators to continually design up to date, meaningful and robust curricula that address the full potential of the technology. We feel that the most valuable resource for CG educators is access to an international community of people who teach digital media in all forms. This forum will be a discussion about how we can build that community and how we can provide a method for the people involved to share information.

1 Introduction

The rapid changes in the discipline of computer graphics make it difficult for educators to keep the pace, design and update, meaningful curricula that address the latest and greatest developments of the technology. We feel that the most valuable resource for CG educators is ready and easy access to an international community of people who teach digital media in all forms. We would like to structure a forum around how we can build such a community. Furthermore, we want to discuss how we can provide a method for the people involved to share information. In addition, we will ask how the community can collaborate and move forward all disciplines that use digital media.

We further need a system, preferably web-based, that educators can use to share information. What should that system be? What is the best way to build it? Ultimately, the online system could grow into an online community of interactions that will spur collaborations, foster creativity and make rich connections to further the field. How do we get to this end?

Our forum will use the *Computer Graphics Educational Materials Source* (CGEMS), an emerging online referred repository for curricular materials related to computer graphics, as a springboard for discussion and a framework for audience members to address the above questions and suggest ways that the online system could grow into the online community.

2 Theoretical Underpinnings

We are presently experiencing a cultural shift that is embracing the evolution of a new digital medium that we do not yet fully understand. We are still developing the appropriate language to describe what new digital media is. Indeed, the entire impetus behind Lev Manovich's *Language of New Media* [Manovich 2001] is to attempt to create "... both a record, and a theory, of the present." He further states that he aims "... to describe and understand the logic driving the development of the language of new media." In Manovich's examination of new media language, he seeks to describe it and thus define its cultural role in today's society. This, of course, might very well change, as new digital technology becomes a more conventional part of our culture.

Describing new digital media or computer graphics is especially important to those who teach it. A landscape that changes every six to eighteen months does not provide much time for those who use digital media to do something meaningful with it. To add to the complexity, many digital innovations provide novel functions that invoke unique ways of thinking. Educators need to understand the implications of the technology and design appropriate curricula in a timely matter.

These are only some of the reasons why we believe a worldwide community of digital media and computer graphics educators who share information is essential to our field and will help move the discipline further.

3 Community Building

Since the beginning of the Internet, before the emergence of World-Wide Web, people used electronic bulletin boards (BBS) to connect with each other and share resources, files and other information. This was the start of online communities. Today, virtual or online communities have become a common the daily lives of millions of people across the world. As described in [Preece 2000], these communities arise out of groups and individuals who mainly cooperate to share resources and satisfy each other's needs. People join online communities mainly to socialize, work together, share ideas and engage in topical conversations. To build such communities there are a few steps to follow: (1) identify a target audience; (2) determine what tools must be provided to serve the purpose; (3) determine how to host or facilitate the community; (4) build it; (5) draw in members; (6) and nurture it [Boetcher 2002]. Recent studies reveal that a shared common purpose appears to be the main indicator of success in an online community. Indeed, unity of purpose is what drives people to connect, provide valuable information and to come back, not to be regarded just as non-contributors [Abrams 2003].

The forum will use this research and our work with the Computer Graphics Educational Materials Source (CGEMS) as a foundation to solicit input on how to further build a community of computer graphics educators.

4 CGEMS: Part of the community

In an attempt to build the community that we feel will foster growth in computer graphics education, we have launched the *Computer Graphics Educational Materials Source* (CGEMS), which is a system that will help educators share materials. We would like to present this system as a way to initiate discussions that address issues about community building.

CGEMS is an online system that provides curricular material for computer graphics educators. The system includes a method for contributors to submit and editors to jury and control the quality of content to ensure sound and robust materials. The shape and components of CGEMS arose from fruitful discussions around, during, and after the Workshop on Computer Graphics Education (CGE02) held in Bristol, UK in July 2002.

Our system supports a way for educators to easily access quality course materials and for contributors to share and get recognition for their curricular innovations. To achieve its goals CGEMS supports submission of, and access to a comprehensive set of materials on all subjects relevant to teaching CG. Acceptable materials range from course mechanics including syllabi, lab notes, example assignments, problem sets, annotated student work, such as images and interactive videos, to teaching gems, presentation slides, course notes and interactive demos. To encourage maximum reusability and to promote dialogue among the community, the preferred modality of submission is the *course module*. A course module is a self-contained teaching unit including some or all of the above materials as parts to an articulated whole. Examples of these are transformations in CG, principles of texturing, shading techniques that impact the mood of a narrative, concept development, etc. Typically a course can be construed as an articulated set of modules organized according to pedagogical criteria.

Another important criterion for success is to ensure maximum usability and accessibility of materials. As such we encourage submission in vendor-neutral formats. To ensure quality materials, the server implements a thorough refereeing process similar to that of a journal.

We feel that CGEMS can be used as an initial path to build an online community of computer graphics educators. However we would like to use this system as a way to get the audience to discuss further ways to bring this idea to fruition.

5 Summary and Conclusion

The fast pace of computer graphics and digital media technology creates unique problems for educators in the field. Not only do we need to know about the technology as it changes, but we need

to understand its implications so we can teach students how to use it in meaningful ways. A moving target such as this is hard to pin down and those in the field are best served if they can share innovations, understandings, curricula, and resources. A worldwide community of CG and digital media educators who share information will help alleviate these concerns and provide support unique to CG fields.

We will start by presenting one step towards building a worldwide community through our CGEMS system. We will then use the system to elicit input from the audience about how we can move forward to construct a viable and cohesive community. Specifically, we will address the following issues:

- How can we build a worldwide community of computer graphics and digital media educators?
- How we can provide a method for the people involved to share information?
- How can the community collaborate to move disciplines that use digital media forward?
- How do we build a system for educators to share information? What is the optimal system and what should it look like?
- How can the online community spur collaborations, foster creativity and make rich connections to further the field.

References

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