

Ratava's Line: Emergent Learning and Design Using Collaborative Virtual Worlds

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Abstract

Ratava's Line is an online, 3D virtual world fashion and interactive narrative project created collaboratively by students at both the Fashion Institute of Technology (FIT) in New York City and at Interactive Arts at Simon Fraser University (SFU) in Vancouver, Canada, using emergent, collaborative 2D and 3D systems. This distance learning project, developed over two months and culminating in an online event in multiple, remote locations, integrated three key design elements: the translation of original 2D fashion designs from FIT students into 3D avatar space; exhibits of artwork of student and professional artists from New York City and Vancouver in virtual galleries; and creation of an interactive narrative "fashion cyber-mystery" for online users to participate in and solve in a culminating, cyber-physical event. The overall project goal was to explore how online collaboration systems and virtual environments can be used practically for distance learning, fashion and virtual worlds design, development of new marketing tools including virtual portfolios, and creation of cross cultural online/physical events. The result of this process was an interdisciplinary, cross-institutional, international effort in collaborative design in virtual environments, and a successful exercise in emergent, collaborative distance learning.

1 Introduction

Just as content creators need to integrate current digital technology into their design and distribution methodologies, so also digital communication systems need compelling content to make them alive and useful. It is not true that "if you build it, they will come," for if you build it and there is nothing interesting to do there, they may come, but they will leave quickly. Tech substrate alone is not enough; content designers must fill that substrate in new and creative ways. Collaboration is the key to bringing the creative and computational together.

Nowhere is this clearer than in the modern classroom, where both students and faculty need new conceptual frameworks and collaborative systems that leverage the strengths and benefits of the digital age. Today's educational system adapts too slowly, if at all, to the rapidly-changing economic realities of the increasingly digital marketplace. Students need new methods and strategies for development of skills and systems that bridge the gap between schoolwork and professional work and make them viable in the digital marketplace. Educational institutions must envision and define a wholly new pedagogy for the digital age. Educators must function as digital facilitators, not merely information providers. This new teaching and learning model, developed in and facilitated by digital data delivery formats, must be fast, flexible and fun if it is to compete in the digital landscape. It must be virtual, visual, collaborative, iterative and emergent.



Figure 1. One of several 3D 'virtual fashion-cyber mystery show' spaces, here before the virtual crowds arrived. These models "wearing" original fashion designs are click-able, revealing additional 3D galleries of the designers' work.

The Ratava's Line project is an experiment in the design and implementation of this new pedagogy. Ratava's Line is a collaborative design / e-learning research project between two university professors/researchers and their students from two different countries working with and about online virtual tools for fashion and virtual world design. The project began in March 2002, when Daria Dorosh, Fashion Design Professor at the Fashion Institute of Technology (FIT) in New York, and Steve DiPaola, Computer Graphics Professor at Simon Fraser University (SFU) in Vancouver, Canada, were introduced by virtual worlds expert and FIT project facilitator Galen Brandt, and agreed to participate in an online, virtual distance learning collaboration between their students in the disciplines of design and interactive computer graphics.

This new project would build on Steve DiPaola's work at Stanford University, where students in his "Interactive Narrative Design" course had explored new forms of interactive communication and delivery by using a research practice approach which involves creating a new methodology as the work is explored. The project would extend DiPaola's research in its exploration of new forms of design collaboration. The project would also serve Professor Dorosh's pedagogical goals: to extend the range of communication and career options for her fashion design students and to introduce them to the experience of participating in a digital collaborative community. Brandt and her partner Bruce Damer, founder of DigitalSpace, helped enlist an industry partner to complete the collaboration process: Adobe Systems Inc., and their then-beta (since released) software Adobe Atmosphere, a 3D virtual environment platform.



Figure 2. Collaboratively created cyber-fashion show: Original design sketches (white background) from FIT fashion designers are turned into 3D avatar models (black background) by SFU students via an iterative process - all using distance collaborative tools between two coasts and countries.

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2 The Project

The collaboration between SFU's "Immersive Environments" fourth year class and FIT fashion design students of Daria Dorosh culminated in *Ratava's Line* - a collaborative cyber-fashion-drama project. *Ratava's Line* integrated multiple design elements: presentation of original fashion designs from FIT designers

translated into 3D space, virtual exhibits of artwork of artists from both New York and Vancouver, and an online narrative mystery for users to participate in and solve. The culminating event of the project was hosted simultaneously in cyberspace and in the physical realm of both FIT in NYC and at SFU in Vancouver.

Key questions began to emerge as the collaboration took shape:

1. How can teaching and learning prepare students for the new emerging digital paradigm related to art, design, and technology? What skill sets will they need outside their discipline to be attractive to the industry in gaming, fashion, communication, product development, etc.?
2. How can an educational institution partner with other members of the academy and industry? What kinds of projects would be a bridge to this new paradigm? What kind of educational tools are needed to address the issues of partnership, research, development, and assessment of student outcomes?
3. How can resources be identified to support hardware, software, program development, bandwidth, release time, and technical support to implement new projects? How does this relate to an institution's mission?

3 The Process

Guided initially by DiPaola and Dorosh, and at key developmental and presentation stages by Brandt and Damer, the students at SFU and FIT worked via several online collaboration systems in an iterative process. Collaboration took place at many levels of the project:

- creating and translating fashion designs and narrative characters to explore how they relate to and come to life in virtual environments
- exploring how virtual worlds can support graphic artists (artwork was included from NYC and Vancouver)
- creating interactive narrative performance (characters were played live by actors simultaneously from both coasts/countries)
- discovering how collaborative projects can bring people and countries together
- exploring as a group that never met in physical space, the issues of the "real" and the virtual.

Initially, original fashions were designed and drawn by Dorosh's FIT students using traditional 2D methods. DiPaola's SFU students translated these drawings into 3D, designed and modeled avatars, and placed the virtual garments on the avatars using a variety of software and tools. SFU students then designed a fashion world comprised of multiple 3D environments and placed the "virtual mannequins" in-world. Finally, students at both schools collaborated on an interactive narrative - a fashion cyber-mystery that included fashion avatars and additional narrative characters to take place in-world at a culminating event for students, faculty, press and outside participants. Students collaborated on all aspects of character design, story writing, and creation of an international, online, two-city event. The event included a meta-look at what is real and what is virtual in the fashion industry, computer graphics, media events, and the collaborative process itself. In addition, students and outside facilitators collaborated to create virtual portfolios of the students' work in the form of virtual galleries for presentation to faculty and prospective collaborators, clients and customers.

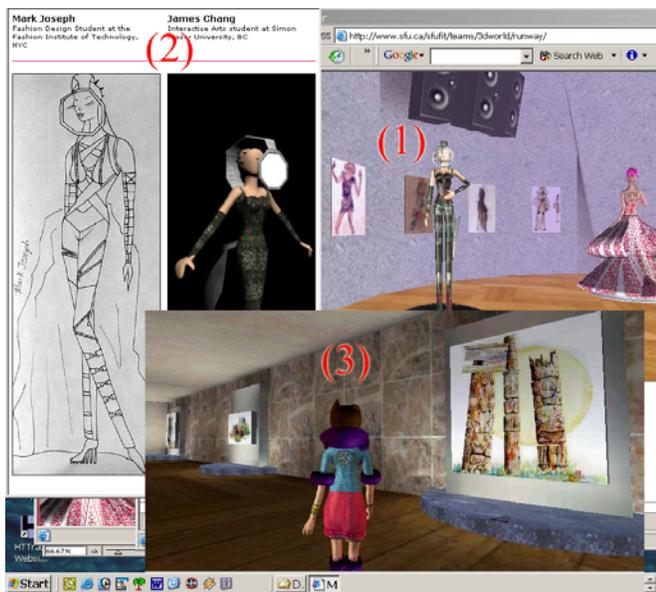


Figure 3. 1) The audience browse and chat as avatars in the main 3d space; view the fashion models and click on one they may be interested in, which 2) then brings up an HTML window of the designer and avatar artist. Users can then 3) hyperlink to that designer's 3D gallery to walk around and view his/her related work -- alone as above or with a community of viewers.

Collaboration occurred entirely via virtual online systems -- no one from FIT or SFU (including the faculty) ever met physically during the project. The researchers, looking to understand how technology can help provide new design and learning skills, guided and documented the students as they learned to work with new design and learning skills. The collaboration took place across a range of environments -- 2D, 3D, physical, virtual and live -- and ultimately across a range of media: fashion show, art show, interactive narrative and game, and live performance. Students, faculty, and outside and industry facilitators collaborated as a distributed international team, exploring the full range of interdisciplinary communicating, thinking, working, negotiating and presentation of results.

Online collaboration tools were used in every phase of the planning, teaching and design process, as well as in the execution of the final event. These tools included:

- Shared virtual 3D spaces for design collaboration and creation of virtual portfolio
- Real time chat
- Video web-cam during the seminar and event.
- Open source discussion forums with team and topic threading.
- Collaborative web tools (Wiki, open permission website)
- Phone conferencing

The learning/research hybrid culminated in a live fashion show opening and interactive cyber-mystery event on April 23rd, 2003. The event audience was invited to attend physically at either NYC or Vancouver; or online via the created 3D worlds. This simultaneous international and online event displayed original fashion designs using 3D avatars, demonstrated how virtual collaboration can work and included an interactive cyber mystery

where fictional characters in the fashion show were played by online actors on both coasts. Earlier in the day, a seminar for academics, the press and industry was held with participants and speakers from SFU, FIT, NYU (Professor and Media Lab Director Ken Perlin), the game industry and the press. Student physically at FIT and via a web-cam or via online 3D avatars participated at SFU. Ratava's Line and the seminar garnered positive press from a range of publications including fashion industry trade newspaper "Women's Wear Daily", and the academic journal Chronicle of Higher Education. Several additional seminars continue this exploration on the future of emergent collaboration in design and virtual worlds.



Figure 4. Exploring what is Real: In exploring these ideas, FIT designer Leon at the seminar event in NYC, clothed in his original designs, standing in front of different virtualities of himself and his creations.

4 The Virtual Worlds Technology

Adobe Atmosphere was used as the web 3D client and builder. The school collaborated closely with the Adobe Atmosphere team whose product was in beta at the time (thus the software itself was emerging). Students used the Atmosphere software to create avatar fashion models, a series of fashion worlds, and an interactive mystery narrative to take place in the space. All fashion models spun around in place, allowing the invited public (as chatting avatars) to discuss and examine the fashion work in a party-like and informal environment. The fashion models as well as the art work in the virtual galleries were clickable and brought up hyperlinked web pages of additional information about the artists and work. That information led to additional Adobe Atmosphere spaces which showed a 3D gallery of the specific designer's work that a viewer could explore at his or her own pace. Atmosphere uses standard JavaScript as a scripting language to build this programming and hyper linking into 3D objects in world.

What emerged was a new model and medium of content creation and distribution a new way for creators and audience alike to experience and participate in both the creative process and its result.

5. The Prototype and Its Implications

The emergent process used in Ratava's Line was modeled on that used in industry, in which a proof-of-concept rapid prototype is conceived, developed and brought to market using an iterative, collaborative process. This process proved ideal for the project and demonstrates its appropriateness in a pedagogical context. Indeed, it opens the door for new ways of looking at and constructing curriculum as a series of project-based collaborative iterations on cross-cultural themes and disciplines.

6. Conclusions and Future Directions

Fashion is an inherently visual, collaborative, shared, 3D social space -- an expressive cultural language -- a three-dimensional visual medium that needs to be seen and shared. The fashion business is humans designing clothes for other humans to express their sense of identity, both imagined and real. Like the cultural space of fashion, virtual worlds are collaborative, 3D, visual, social spaces that make sharing possible, globally, 24/7. Thus fashion and virtual worlds are an ideal cultural and pedagogical marriage.

Ratava's Line functions as an architectural site, a game, an interactive narrative, an art gallery, a collaborative social space, a shared experience, a marketplace and an international, interdisciplinary cross-institutional classroom. As a result of the iterative, emergent process used to create the project, students in both institutions used new, online creative and marketing tools to learn new skills, work with new collaborators, tap new markets and new careers, and find new ways of marketing themselves to a global audience. These methodologies respond to the increasing challenges of the fashion marketplace in which design and manufacture on demand is becoming a reality. Further, students learned design skills in the multiple contexts of Ratava's Line and thus came to conceive of themselves and their skill sets in new ways: as digital designers in a digital landscape that can include gaming, interactive narrative, world design, set and costume design, industrial design, and others.

Said one FIT student of the process:

"As a designer, there is nothing more essential than getting a visual understanding of your designs and the excitement of having your design picked by a customer, in this case an avatar-maker or an audience member who wants to wear my avatar...The power of a virtual mannequin is enormous and the exposure on the web is beyond understanding. This is a medium of personal expression I can use to my advantage and invite potential costumers and customers to come and see my gallery or show room at their own time. I can place in it any artistic statement I wish to discuss, as a designer, a photographer, an artist. I can attract people from all over the world...I live in Manhattan. It's very expensive here, and I need all the space I can get to exhibit my art...This is a field I believe in and want to explore further. What we've reached is just the tip of the iceberg, we can see the light at the end of the tunnel and I feel this is only the beginning."

Thus the project opens up new ways to experience the multiple mediums of fashion and virtual worlds design, and to devise new collaborative strategies to benefit creators and consumers alike. Teaching how to learn, not what to learn, through an emergent and iterative process created jointly by students and faculty, is a viable pedagogical model with important implications for curriculum development, distance learning, industry mentoring, and economic stimulus. Future developments include new ways of assessing the results of this model, and continuing the multi-university

interdisciplinary collaboration and industrial partnership. Now in progress is a new project between Adobe Atmosphere and students at SFU, creating a knowledge learning game using author James Burke's "Connections" database.

This iterative process will result in better tools, better processes, and a more inclusive and realistic understanding of multiple disciplines, cultures, literacies and perspectives. The ultimate aim is to leverage the immediacy of the digital medium so as to fulfill the promise of interactive, emergent, process-based learning.

Acknowledgments: The lead students: Owen Milburn (SFU), Erika Glover (SFU) and David Aliperti (FIT) and all the students who participated. Bruce Damer and DigitalSpace Commons as well as the Adobe Atmosphere team.

See <http://www.sfu.ca/sfufit> for additional information and to enter the design worlds discussed here.

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