The Creative Development Process and The Choreographer's Notebook

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ABSTRACT
This paper will discuss an application being developed in conjunction with the Dance.Draw project. Through the coupling of computer technology and art, the Dance.Draw research project is developing new tools to assist creative people and the creative process. The Choreographers Notebook is a web application designed to be used in the choreographing of dance pieces and to document the development processes of choreographers. Along with description of the Dance.Draw software, this paper will attempt to explain the importance of merging these two worlds and some of the difficulties that are part of the challenge.

INTRODUCTION
The combination of art and technology has its roots in photography, but with the invention of the computer and the internet, technology has more recently become a common partner in many forms of artistic expression. These fields, which were for so long considered separate, are now being merged as they expand their accepted boundaries.

Although the final products from both fields are different (one emphasizing utility and the other emotional expression), the development processes of each have many similar characteristics. These similarities are sometimes hard to see for those working in one discipline or the other, but for those in middle of the two fields, the development process is very similar and what is produced often has characteristics of both disciplines. Not that technology influences all art and that all technology has artistic design elements, but when they are combined the result is often enhanced utility or expression.

The book, The Computer Revolution and the Arts, explains that for centuries many of the greatest scientists have been artists. The scientist and poet J.H. vant Hoff was one of the the first to make the connection between the art and science worlds, his conclusion was "that the most imaginative scientists are also artists, poets, musicians or writers." [3]

Although the general population is mostly concerned with the final product, the creators of technology and art can agree that the process or evolution of the work is equally important. Things that limit, enhance, or shape the development of art and technology, whether they are visible or not, influence the quality and effectiveness of final product either consciously or subconsciously. The connection between art and science that vant Hoff recognized shows that many successful scientist have been artists as well, but more importantly it shows that both fields draw from the same human process of creative discovery.

Only the creators of the art understand the process that a piece of art goes through before being finished and presented to the public, but often they find it difficult to describe in an accepted way. "Some artist find it difficult to write about their work, preferring to express themselves solely through their artworks." [2] To improve the relationship between these two fields their needs to be a mutual understanding of each others development processes. The Choreographers Notebook has the potential to create this understanding by facilitating and documenting the communication between the different fields.

THE CHOREOGRAPHER'S NOTEBOOK
The main art form that Dance.Draw works with is dance, although some purely visual components are implemented during the performances. A portion of Dance.Draw is to choreograph dance performances that demonstrate the various stages of technological developments in the project. In the months prior to the performances, the different groups work on developing their parts of the performance, and then they come together to work the parts together. To ensure that the choreographer creates a good result, there must be communication between both the artist and the scientists throughout the process. This collaboration is novel and therefore the process has not yet been perfected. There are several reason for this. One is that the two groups do not have a mutual understanding of how the others work or at least they have the perception that their processes are very different. Another, is that the Choreographers Notebook tool is new and needs to be refined to match the requirements of the choreographers for exactly. The Choreographers Notebook is a tool for creative people, not only to improve the final product, but the process in which that product is developed.

The development of the Choreographers Notebook came about

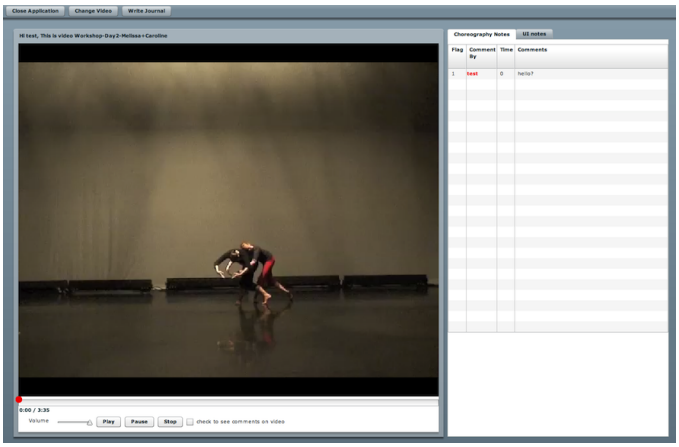

Figure 1. Current development of the Dance.Draw tool: The Choreographer's Notebook

after the scientists sat through several dance rehearsals and noticed there was a significant amount of time spent critiquing and discussing the dance piece. Creating a location, outside the rehearsal space, for these discussions would increase the time spent dancing during rehearsal and save money on the expensive rehearsal space. Using this Dance.Draw application, rehearsal video can be uploaded and the choreographer can critique and refine the dance piece after the rehearsal. Then between rehearsals the dancers can view the rehearsal video, read the choreographer's comments, and add their own. Although the initial motivation to development the Choreographers Notebook was economics, these teaching and other values that were discovered later. The application will be a place that contains all the documentation of the development of the dance piece. From this documentation will come a better understanding of the creative process and eventually it will become a forum for discussion of dance, visual, and technical components of a piece.

As seen in the figure above, the main page of the application contains two components. The video display portion (left side) streams videos of the rehearsal. The comment area (right) displays analysis and comments made by the choreographers and dancers. The comments are marked on the progress bar with a circular cue point that corresponds with the color associated with that user. Another component of the application (not shown above) is a journal component. This is an area where users could document longer comments and critiques. These could range from overall thoughts about a dance piece to personal thoughts about one dancers portion of the dance. Clearly this tool has an application in the academic world of dance. Professors could ask their students to keep an online journal that documents their creation of a new dance piece which would then provide material for analysis and critique in the same fashion that a students paper might be critiqued.

MY ROLE

This summer I was asked to help further developments on The Choreographers Notebook application. When I got the code it had many structural issues and I decided that I would restructure the application to be more understandable for people assisting on the project in the future.

The applications main feature and requirement is to manage the display of videos and for this reason Adobe Flex was chosen for its video capabilities. I had never worked with the adobe software development kit, Flex, or its scripting language, ActionScript, and I had only done small projects using mySQL databases. The first thing that I did was to find a few good resources and began to read about Flex. This also was the first web application that I had work with and I did not know the best way to structure it. I found a great book called Adobe Flex from the Source. It goes step by step through the creation of a rich Internet application and supplies code examples that you can run and test. In the past I had assigned textbooks, notes, and a professor to help me when I had a problem. Having to find my own resources really slowed the process, but I learned about relying on myself to answer questions. In order to speed up the reference search in the future, I gathered all the resources that I found most useful and passed these on to the people that will continue to work on the project. [1]

After I better understood of how to restructure the code, I went through all the applications current methods and reorganized them according to the tool components that they relate too. My plan was to create a few customized components that could be used in the main application file, decreasing its size and make it more readable. My other objective was to modularized the code by creating classes that correspond to each component of the application and separate the script portions from the main application file.

RESULTS

Although this application is still in the development processes and has not gone through formal testing, it has been developed along side a group of dancers and choreographers from University of North Carolina Charlotte (UNCC). This has been an advantage for development and usability. The dancers have used the application on their own and during workshops, and the applications development is discussed regularly by those that are using it. During these discussions the dancers describe issues they have and ideas for design improvements. Some of these suggestions include a notification system for comments pertaining to individual dancers. For example, if a choreographer has a correction for one person, they could tag their name in the comment and the next time that dancer logs into the system they would get a notification that would jump the video to that moment in the dance.

Once the team is satisfied with the beta version of The Choreographers Notebook, organized user studies will need to be done. Starting with the group of dancers here at UNCC, we will have them use the application for the creation of a dance piece from start to finish. Users should fill out a formal survey and be encouraged to email us if they have difficulties or suggestions while using the application. The survey should ask if the users had any difficulties using the software in general and then prompt them to describe issues with each com-

ponent. Then it would ask if they have any other ideas or needs that they think the software should meet. Finally, it would ask how visually pleasing the application is and how long it took to figure out how to use it.

After these initial tests, other professors in the department should be asked to use it and fill out the survey. While continuing development, colleagues from other universities should be asked to use the tool, and eventually it should be advertise it to all college dance programs. The benefit of it being an Internet application is that anyone could use it and give feed back.

CONCLUSION AND FUTURE WORK

Even with the modest progress made over the summer while working on this application, it is clear to me that art and technology can be merged and work together nicely, but the fields still need to grow together and become more comfortable with each other to fully understand one another. Analyzing the process that any design project (whether designing a dance or a piece of software) goes through provides an insight into understanding the final product and the field that it is part of.

Although this application is currently used to document the artistic (dance) process. I think that future developments will include more incorporation of the technical aspects. For example, the programmers could upload clips of ideas for visualizations that might overlay or accompany the movement seen in the rehearsal videos. These graphic elements would enhance the tools power to instruct and guide the development of the dance. These visuals could be critiqued, not only by the computer scientist/artist who created them, but by the dancers. This would increase the communication between the two groups, improve the usefulness of the tool, and lead to the creation of a better final product. The technologists could also use the journal component to share proposals for new visualizations and updates with the technology. For example if there is a desire for a new type of tracking devise, the technologists could post their ideas about it, share them with the dancers, and describe the types of movements they think would be most effective with the implementation of this component technology.

This applications purpose would then expand to bridge the gap of communication between the two groups during the development process and ultimately lead to better creative outcomes. Not only would we be better at defining the creative process that a dance piece goes through, but we would have documented the Dance.Draw process development itself. As I stated in my introduction, most of the difficulty in bringing the art and technology disciplines together comes from the misunderstanding of each others form of expression and the path each group takes to completion. Although I believe that art and technology go through similar processes, it would be valuable to let the people working in the combined field create a new accepted development process. Allowing the Choreographers Notebook to include all aspects of the development of a dance piece would redefine the process that art and technology projects undergo. The documentation on the Choreographer's Notebook could be used to assess the aspects of the development process that have produced successful work and use these to create a general standard for how a team of artist and scientists can work successfully together. Although this structure does not need to be rigidly followed, it would create a better work environment and in turn produce strong work (both technological tools for the artist and art itself), that has been thoroughly developed and scrutinized by all members of the team.

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