

Introduction

I wanted to know how to motivate design students to improve their digital workflow, and what technologies are present to aid in this. The students I work with are at the college level and are heavily geared towards getting into the design industry, so I wanted to not only look at this from the student perspective, but also the view of an up and coming professional.

Literature Review

The first step was looking into preexisting research, and what insight it could offer. My research indicated that motivation is key to keeping students engaged and enthusiastic about whatever it is that they are working on. This motivation is key to a commitment to growth, which is an increasingly invaluable attitude to have in the workplace. When moving into the workplace, it is paramount for the students to continue to seek out professional development, keeping themselves relevant in their field, and for design professionals, technology is a key area. There are a number of motivational factors that cause professionals to learn and stay up to date on technology, both internal and external. These include the user's perceived usefulness of the technology, the desire to better one's career, and the fear of falling behind one's peers.

For designers, one of the lynch pins of a solid technological strategy is maintaining a strong digital workflow. There is any number of ways to create and maintain a strong digital workflow, but metadata is a key technology that can help graphic design students, both while in school and when moving onto the professional world. Metadata is data that describes or identifies a file, and provides context for the content of the file. Anyone can collect assets, but the ability to relocate and reuse efficiently and effectively for a variety of purposes is what really gives those assets value. Metadata is key to being successful at this. Metadata has been around for some time, but hasn't been widely used or understood, and as a result there lacks a standard format for metadata. While it currently doesn't look likely that a standard will emerge anytime soon, in 2001 Adobe introduced its eXtensible Metadata Platform (XMP),

which is getting more and more widespread use. So it was time to move on to working with students, using what I had learned to motivate students to seek out professional development, specifically in their digital workflows.

Putting the Challenge in Place

Phase One

My Challenge Based Research project involved two different groups of students, both of which I introduced to the idea of metadata and software to manage it. The first group consisted of twenty students enrolled in the Digital Arts & Design Bachelor of Science degree program at Full Sail University. My main challenge for them was to discover what is metadata, how is it used, and why is it important. I presented them with a lecture on metadata, and also introduced them to Adobe Bridge, a piece of software that can read and write XMP metadata. This was accompanied with a worksheet that was created as another way to get the information to the students, using techniques that would not be considered normal for a college level course (such as a word search.) After this the students were put into groups and challenged to do additional research into metadata and create a presentation that would be given to the class at the end of the month.

My students responded to the challenge fairly favorably. There was some initial trepidation as most of them didn't know what metadata was beyond what I had explained, and also because I asked them to solve the challenge in groups of my choosing, which can always bring about a few issues. Overall though, the students responded positively and generated good projects.

The students came together in groups of 5, and worked together both in class and out of class. Once the students were in their groups and working, my role was primarily one of a facilitator, making sure they were on task and on schedule. I was also available to provide any technical assistance should it come up. Different groups took different approaches, some working more together as a unit, while others worked individually and then came together to wrap everything up.

The students researched the questions they were given to answer on their laptops, using various resources on the Internet. This information was then compiled into a presentation using numerous different programs, including Adobe Photoshop, Illustrator, InDesign, Bridge, and Acrobat, Apple Keynote, and Google Docs.

They all chose to do slide presentations displayed on a projector connected to my laptop. Some groups used Keynote, while others created a multi page PDF and others used Google Docs. Some groups had all members present, while others chose to only have some members speak.

These presentations were given to the entire class, including the instructors. Both those presenting and those watching positively received these final presentations, displaying the students' knowledge of metadata.

Results

The students responded favorably to the information about metadata they learned from the experience. Seven of the twenty students came in with no knowledge of what metadata was, while another eight had limited knowledge of the subject. All students, including the remaining five who had prior knowledge of metadata, reported to learning something they could take with them past the class.

Some of the growth was quite drastic, such as in the case of one student, who when asked at the beginning of the month "What is metadata and how can it help you?" answered with "I do not know what metadata is and how it is able to help me." At the end of the month this same student responded to the same question with this answer: "Metadata is data about data. It can help me keep a good record of my files.

There is a lot of information about the details of a project that can help me have a nice backup plan. I can also prove where and when something was made."

To further express what the students learned, all twenty students said they would implement metadata into their digital workflows, this after only five of them reported already using metadata in their workflow coming into the class (with three of those being in a very limited fashion.) When asked in one-on-one

interviews, all of the students expressed positive feelings towards metadata and its usefulness. They could all point to something they learned as part of their group projects as something interesting they could take with them.

In the end, all of the students expressed, to some degree, a motivation to continue to use metadata and to develop and grow their knowledge of it.

Phase Two

My second group of learners was comprised of fourteen students enrolled in the Digital Arts & Design Bachelor of Science degree program at Full Sail University. Just as with the first group, I presented the students with a lecture about metadata and Adobe Bridge, again accompanied with the worksheet. This time, however, the challenge was an individual one, requiring each student to come up with his own design piece about metadata. This group was a little less enthusiastic initially about the challenge I presented to them. Once again, most of them didn't know what metadata was, or those that did, generally didn't utilize it. In the end though, the students took to the material and produced solid individual projects.

The students were given the task of creating an infographic to represent information on metadata. A list of fifteen questions was provided to the students, from which they needed to pick a minimum of four to answer on the infographic. There were no technical limitations or specifications on the piece, leaving a lot of room for creativity. This assignment was given to each student individually, however, the students were able to collaborate and help one another through the process, as long as each one produced a unique piece. The students had time to work both in class and out of class. Once the project had been given, my role was primarily to give guidance and assistance, making sure they were on task and on schedule, and answering any questions they had about the content. I was also available to provide any technical assistance should it come up. There were no milestones in place with the project, requiring the students to manage their own time. Some jumped on the project early, getting the research done well in advance,

allowing more time for the design, while most (unsurprisingly) were slow to get moving on the piece.

The students researched the questions they chose to answer on their laptops, using various resources on the Internet. This information was then compiled into an infographic using numerous different programs, including Adobe Photoshop, Illustrator, InDesign, Bridge, and Acrobat.

Every student chose to create a static piece, however many different styles and techniques were on display. Some were successful in their use of images and symbols, while others relied more heavily on text and typography. Some were very clean and organized, while others were more complex and busy.

One student even created a model of a library card catalog in a 3D program drawing the comparison between that analog system and digital metadata. Some of the pieces were more successful in the amount and quality of information they conveyed, while others were more successful in the design and creativity aspect. Unfortunately most students struggled to strive at both, however, most pieces could be considered at least somewhat successful.

The infographics were saved out as PDFs with a second page for resources attached and then turned in on the student server. These files were then available to be viewed by all members of the class, both students and instructors alike.

Results

For the most part, the students reacted positively to the information about metadata they learned from the class. Half of the fourteen students came in with no knowledge of what metadata was, while four more had limited knowledge of the subject. All of the students reported to learning something about metadata and digital workflow that they could take with them past the class.

Some of the growth was quite drastic, such as in the case of one student, who, when asked at the beginning of the month “Do you currently use metadata in your workflow?” answered with “I do not. I hadn't previously considered using metadata for my schoolwork.” At the end of the month, when this same student was asked if he planned to incorporate metadata into his workflow, he responded: “Yes,

metadata will become a permanent part of my workflow due to its incredible potential at keeping my folders better organized.”

Twelve of the fourteen students said they planned to implement metadata and other organization techniques into their digital workflows, which is pretty remarkable considering all of the students came into the class not utilizing metadata. When asked in one-on-one interviews, all of the students expressed positive feelings towards metadata and its usefulness, with only one student expressing that it just “wasn’t for her.” Even she, however, along with all of her other classmates, could point to something from the class as interesting and useful to take forward.

By the end of this second month, all of the students concluded, to some degree, metadata is a useful tool, and all but one of them expressed a motivation to continue to use metadata while expanded their knowledge of it.

Conclusion

I entered this wanting to know if I could motivate college level design students to improve their professional development through technology. An area I discovered that was important for them to do this in was their digital workflow, and a piece of technology that could be of great aid in this is metadata. This research gave me the foundation and inspiration from which to approach my two groups of learners, as I introduced each of them to these topics. Both groups of students responded well to the information, even when most of them had little to no knowledge or experience with metadata. They produced strong work, illustrating the knowledge they gained, and expressed an interest in continued use of metadata in their future academic and professional careers.