The planning phase leads inevitably to the development phase, which Alessi & Trollip define as "the entire process of producing, refining, and validating the program.

## Our first question:

#1: As our groups are continuing to develop the prototype for our tutorials, which aspect(s) of the development process will your team spend the most time on? (Text Components, ActionScript code, Graphics, Video, or Audio). Which aspect of the development process has been the most troublesome? What is the main cause(s) for the extended time? Is it what your team expected?

I can only speak from my perspective, but I think it is safe to say that the ActionScript coding has been the most time consuming aspect of our project and will continue to be so throughout the Alpha and Beta stages. To date there hasn't been any actual ActionScript coding necessary because I am using a new Adobe product called Flash Catalyst to build the initial stages of our project. The actual development stages so far have consisted of the building of the storyboards, then converting each board into Photoshop layers or grouped images and text, then importing the native Photoshop file into Flash Catalyst where each Photoshop layer was converted into a FC page/state, then the necessary transitions between each state were created, then interactions for each of the navigation buttons was created which identified which transitions would occurred for that button when the program was in a given page/state. The Catalyst process saved hand coding but still took a considerable amount of time due to the fact that it is the first time I used this program, so there was a considerable amount of learning the program that needed to be done in order for the project to be developed using the FC tool. The next step will be to export the Catalyst file into a FXG format so that it can then be imported into the new Adobe Flash Builder CS5 which is based on the old Flex Builder product released by Adobe last year. I have had some experience with Flex but not the new Flash Builder yet, so I expect there will be some more learning that needs to occur and a lot of adding and modifying the code generated by Flash Catalyst which is in three formats, Spark, MXML and ActionScript. The reason for taking it into Flash Builder is so that the finishing elements of our project can be added. Flash Catalyst has a number of limitations including: only a maximum of 20 screens/pages can be built for any one project and our project exceeds that number, it doesn't have a way to track which page a users was at before moving to another screen which limits the functionality of our Help and Exit screens because users won't be able to return to their previous screen. Again, I can't speak for my other team members, but this is pretty much what I expected of our project once we hit the development phase. It is a lot of work now, but it is the best way I know of to learn new software - which will pay off tenfold in the long run.

The latter part of Chapter 15 discusses evaluation. The "four levels of evaluation" developed by Donald Kirkpatrick (1996) describes a framework for evaluating the effectiveness of training programs and can also be used to evaluate instructional media. The third and fourth levels of evaluation, "Assessing Behavior Change in the Intended Environment" and "Assessing Results and Return of Investment (ROI)" while important, are in practice not always done.

## Our second question:

#2: How does your organization a) determine that transfer of learning has occurred and b) determine that training and/or instructional media has accomplished its hoped-for results and that the investment of time and money was worthwhile? In other words, are level 3 and 4 evaluations conducted? If so, how? If not, should they be?

At MSJC, where I teach, and more specifically in my classrooms, in addition to multiple choice quizzes to make sure that students are reading their textbooks and learning the terminology they need, I focus a lot on skills-based testing. Whether it is in my face-to-face or online classes my students are expected to accomplish skills-based assignments like building Web pages using techniques they are learning each week. In the ActionScript class they are expected to build prototypes, Alpha, Beta, and final versions of a product in a similar fashioned to how it is done in this class. ROI is not something that I take the time to evaluate in my classes nor do I think it would be possible. The college itself may look at numbers like student success rates to determine if an instructor is improving or not, but if they do, I am not aware of it.