

Analyzing Instructional Design and Learning Theories with Joomla

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Introduction

The purpose of this paper is to analyze the process and theories related to designing instruction. The topic that I selected for my project is to design instruction that teaches customers how to use the Joomla content management software. Joomla is a program that helps simplify web creation and management. I work part-time for company that sells custom deployments of Joomla. When customers purchase a website, they are given a 1-hour demonstration. In the demo, the customers are simply shown how to upload pictures, create and manage articles, and create and manage menu items. Customers are also given a high-level instruction manual; there is no formal instruction. My goal for the design is to create progression-based instructions for customers who have little or no experience managing websites.

My intent for this project was to create a usable instructional product. However, the main purpose of the project is to help me make connections between the reading materials, my design ideas, and my understanding of the design process. As a result, the final product may not be the most effective design in a real-world environment.

Part 1: Initial Ideas

The first section this paper will present the initial ideas that I had before reading any of the materials for this course. When starting this project, I believed that my past experiences would heavily influence my design. For example, prior to starting the Instructional Technology (IT) program I did not have any formal experience in designing instruction. In a previous job, my colleagues and I were required to create and deliver a series of instructional classes for the school district's teachers. We were all young computer technicians and had no knowledge of design and learning theories. We simply created step-by-step tutorials to highlight basic features of the tools. When I finally did start the IT

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program, I took an Instructional Systems Design course which taught the Morrison Ross Kalman Kemp (MRKK) model (2009). It was my first and only experience in learning anything about designing instruction, so I believed that it would heavily influence my design idea. To be completely honest, I assumed that I would simply be following the MRKK model again this semester to design another instructional project. I did at least realize that there would be some differences. For example, in this project I knew that I would be acting as my own subject matter expert. However, I believed that I would need to perform a task analysis, learner analysis, define goals and objectives, and design generative strategies. It did not take very long for me to realize that the MRKK model was only one of many potential design paths.

Initially, I was uncertain about what the best delivery method would be for the Joomla instruction. My ideas were split between creating an e-learning website, recording instructional videos, writing instructional literature, or creating a hybrid of the three ideas. At first, my strongest inclination was to create web-based training that contained a hybrid of instructional text, screenshots, and video. This design idea was intended to teach customers how to access and log into the administration control panel, how to create a new article, how to add links and media to the article, and how to link the article to a menu item. I believed the strongest reason for creating an e-learning website was to allow customers to receive on-demand access to educational materials. Customers could use the website for the initial training and as a ongoing resource while maintaining their websites.

When starting this class I felt lost regarding what was being asked for in our project. I knew that I previously had only one other design class, and my background was not really in an educational field. I assumed that the students in our class who work as teachers would have no problem creating instructional materials. However, I was not entirely certain how to approach the project other than falling back on what I learned from the MRKK model. I also was not very comfortable with how to

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use Joomla to manage a website. I had experience setting up the back-end of the website, but had little experience with the actual site management. Since I knew that I would be acting as my own subject matter expert, I realized that I would need to learn the Joomla software while designing the instruction. Additionally, each installation of Joomla is slightly different based on the customer's specific needs. Websites could potentially include e-store tools, forums, user directories, image libraries, etc. Since each site has a unique design and features may vary with each site, instructional needs could vary greatly. My idea to approach the problem was to create a basic training plan with a generic installation. However, my idea made me wonder if customers might become confused when their site did not exactly match the training website and material.

Part 2: Redesign

As part of this course, we read through a variety of literature that discussed concepts related to instructional design. This section will document how my design ideas have evolved with my understanding of the literature. As I mentioned previously, I had taken only one other class that focused on actively designing instruction, so my initial project design ideas followed the MRKK model. This led me to adhere too closely to an ISD model. I falsely believed that all instruction essentially looked the same. However, after reading several of our assignments, and after a productive email exchange with Dave, I began to see that there could be other options to choose from. The MRKK model was only one of many paths of instructional design. I decided to set aside my initial design ideas, and start drawing a new map.

Clark (2001) quoted Schramm as saying “learning is influenced more by the content and instructional strategy in a medium than by the type of medium” (p. 206). I struggled a bit with Clark's claim. Initially, based on old assumptions, I leaned toward Kozma's side of the debate. I believed that

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various forms of media would serve as more effective delivery methods, which would help learners process information and improve learning (Kozma, 2001). Kozma provided the example of the ability of a children's program like Sesame Street to engage children and result in learning (Kozma, 1991). However, I disagree with Kozma's idea that Sesame Street is a valid example of media influencing learning. It does act as an effective delivery method, but I wonder if it could be equally effective if it were a live show. I thought back to when I was a child and watched Sesame Street. I was engaged and actively participated in the program by singing along with and answering questions from the puppets and cast. In a similar manner, I also remember going to the public library as a kid for children's programs which taught similar lessons. The programs were live people instead of a TV show. What the TV program and the live show both had in common was that I was an active participant. Media may not play as drastic of a role as Kozma has asserted.

As I progressed through our readings, I wondered again how my instruction might best be delivered. Should I stick with my idea of a web-based e-learning website, or would the customers benefit more from classroom based instruction? My original idea was to create an e-learning website because customers could benefit from it regardless of their location. I still think that my decision is valid. Kozma might argue that my decision for this format would demonstrate that media usage is a more effective delivery method and will influence learning. However, if Schramm's claim that learning depends more on the content than the medium, the decision regarding the delivery method is less important than the content. According to Clark, (2001) "it is important to derive media that are capable of delivering the method at the least expensive rate and in the speediest fashion" (p. 213). Based on our readings, I believe that the ability for someone to learn is connected to the material and strategies; the delivery method can simply be based on what is most practical and economical.

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I was happy to finally realize that the design of the instruction was more important than the delivery method, but I also found that this idea presented new obstacles. What was the best way to design my project? Were my initial ideas valid? I still felt lost. I looked back over my original design and noticed that it seemed to be fairly cognitivistic. My first ideas were simply to have a customer work in a single-learner, self-paced environment to learn the names and functions of the various tools in Joomla. I intended for the customers to work with a generic website, but I identified a potential problem. Customers could become confused when their custom website was not identical to the learning environment. I lacked confidence in my initial design ideas, and reading about adult learning theories caused me to further question whether my original ideas were valid.

According to Collins (2004) and Royer (2007), adults' motivations for learning are heavily influenced by their desires and life experiences. Adult learning has a “high level of interaction between the learner and all levels of the instructional area” (Royer, 2007, p. 2). Adult learners want their training to serve a clear purpose, they want to be involved in the instruction process, and they typically favor a problem solving approach. Adult learners also look to make connections between the instruction and their past experiences, although experiences will vary for each learner (Collins, 2004) .

As I gained a better understanding of how adults learn, new options seemed to emerge. Since adults seem to favor a problem solving approach, I began to look more closely at problem based learning (PBL). Students engaging in PBL are able to learn through the act of solving problems in a facilitated environment (Artino, 2008). PBL can also create flexible knowledge that can transfer from the instructional environment to the real-world application (Lin, 2001), which in turn could help the adult learner see the clear purpose of the instruction (Collins, 2004). I struggle with what I might present as the problem to be solved, but I imagine that the problem could vary with each delivery. This could allow a flexible instructional environment to meet the unique needs of each customer.

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One thing about PBL that seemed to conflict with my original design idea was that PBL appears to favor group learning rather than a single learner environment. I wondered if PBL might still be successful with only one learner and I was uncertain whether it really was the best choice for my design. Then I read about situated cognition. According to Brown, Collins, Duguid, situated cognition is basically teaching learners in a real world environment (1989). After analyzing how existing customers use their websites, I realized that they almost always maintain their sites as a team rather than individuals. It would make sense for the instruction to simulate how the tool will actually be used. The customers could learn as a team, just as they will work on their organization's website. They could be given a scenario to create a website similar to their own, or perhaps they could learn by starting to develop their own site. If the customers simply learn by working on their actual website, that could help eliminate the confusion of working on a generic website and it would also reduce their workload when their new site is ready to go live. The problem that I foresee is that customers may need to learn while their website's graphic template is still being designed. I may need to simply try one approach and reevaluate based on its success or failure.

When reading of PBL, I also noted that learners should be given opportunities for self-assessment (Lin, 2001). I had not put much thought into assessment with my initial design. I simply assumed that having a working website would be a sign of success. However, Lin points out that self-reflection will help to encourage the establishment of connections between experiences and knowledge, which meets another need of adult learners. I wondered what the best approach might be for encouraging self assessment. One idea that I read about in Anderson & Puckett's article was to have the student and instructor work together to create the rubric (2003). When we sell a website to a customer, we could first work with them to create a rubric to guide them through the learning process. The customer's involvement in developing the rubric could also help them to be a part of the learning

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process, which meets another need for adult learners (Collins, 2004). As the customers progress through the training, they can use the rubric to assess what they have learned and what they still need to learn. When the customer's website is ready to be handed over, we can then go through the rubric with them as a final evaluation to ensure that their learning needs were met. I could then use their final assessment as a tool to help me remap my design.

Part 3: Exploration Metaphor

When designing, I feel like an explorer. I may have a vague notion of where I am going, but I do not necessarily know how I will get there. When approaching this project I had the notion that I stood before a dense forest. I was intimidated by the realization that I needed to pass through the forest and I did not see a clear path. I did not know where I was going or how I would get there. I simply had to take a deep breath, pull out my machete, and start hacking away at the brush. As I made my way deeper into the wilderness, there were times when a trail would seem to emerge. I had a false sense that the road was becoming clearer, but then I would encounter an obstacle that required me to find an alternate path. Other times I might find myself facing multiple routes that required me to select one with the hope that it was the correct decision.

In past attempts at designing, I have felt a lot like my metaphor of exploration. My initial experiences have often had me feeling lost and intimidated. My motivations are often driven by a desire for discovery and a need to accomplish a task. Once the trek has begun, the small revelations, such as understanding how adults learn, guide and direct my journey. Sometimes when I was thick in the middle of the forest, frustration overtook me and I wanted nothing more than to turn around and give up. There were times when I read material about theories multiple times, but did not understand. I felt lost, frustrated, and confused. However, in these moments, my need to succeed and not

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disappoint others kept me motivated to trek on. Now I am standing on the other side of the forest and still wonder if I took the correct route, but at least there is always an option to go back and take a different path.

Part 4: Reflections

This semester has been a journey. I had no clue what to expect from IT500. When the semester began and I saw that we had to do a design project, I thought “oh great, I get to learn another design model.” However, I quickly learned that the real purpose of this semester was to learn theories about design. I did not understand. If this class was not a design class, then why were we designing instruction? What made it even more confusing for me during the first week was that we had to start brainstorming what and how we would design. My reaction was, “Shouldn't I first learn how to design?” My experiences this semester helped me to see that there is not one set way to design. Choices in design can lead in a seemingly infinite number of directions.

I used the metaphor of comparing design and exploration. Now that my journey has ended, I am able to review the course I plotted and identify various discoveries. One important discovery was simply understanding the definition of technology within instructional technology. I previously associated technology with electronics, computers, digital devices, etc. However, this semester we learned about writing as a technology which did not fit with my definition. I looked at a dictionary's definition of technology and realized that technology was a process rather than an object. I reflected on past experiences. I realized that there were times when I used writing as a technology to process information. In one specific past example, I struggled with my personal theological belief regarding the purpose of baptism. I had been raised with one perspective, but other church denominations had different views. In order to resolve my own personal beliefs in comparison to the Biblical text, I

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looked at the scriptures that discussed baptism, wrote an informal paper, and then revised the paper. Ultimately, my beliefs regarding Christian baptism changed and were strengthened. When I went through this writing process I had no knowledge of writing as a learning technology, but I still reaped the benefits. The realization of the power behind the writing process helped me to utilize it as a tool with the readings this semester.

Although I have done some teaching, I am not a teacher. Understanding learning theories has been a challenge. I have wondered the challenge is due to not having a background in education. In my past experience, I primarily solved computer related problems. I have been a student in academic and corporate training classes, but I never took the time to consider how people learn or how instructional materials are created and delivered. Perhaps having a different perspective from professional educators could be beneficial to me as a designer. I have worked in real-world environments alongside of other professionals. I understand challenges that are encountered in the workplace, such as deadlines, corporate structure, frustrations with management, and time constraints.

Going through this class has made me aware that a strong grasp of learning theories is beneficial for instructional designers. Terms from this course have been overwhelming, but I now find myself thinking about the learning theories in other situations. For example, I had encounters at work where the administrator pushed to obtain technology as a novelty. The belief was that the school needed to stay on the cutting edge in order for students to continue learning. Prior to starting the IT program, I might have followed along with blind excitement. However, I was able to draw upon the Clark and Kozma debate, explain that the media was not as important as the instructional methods, and I questioned how the tools would be used. Plans have since been revised to focus first on identifying how the tools will be used prior to making a large costly purchase.

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Edelson described research design as “a process in which design plays a critical role in the development of theories, not just their evaluation. In this theory development approach, the design researches begin with a set of hypotheses and principles that they use to guide a design process.” (Edelson, 2002, p. 106) Edelson's statement has me thinking back on my exploration metaphor. Our class began the semester by brainstorming the basic ideas for our design project. We came up with the topic, the audience, purpose, etc. In a sense, I see the initial brainstorming ideas as the hypotheses or the start of our journeys. We researched learning theories and made discoveries as we attempted to make connections to the design. I observed that the design process almost seems to be filled with more questions than answers. A simple question like, “How will the instruction be delivered?” seems as if it could be answered by an unlimited stream of “What if...?” questions. Perhaps this is where Edelson's statement that “design is a sequence of decisions made to balance goals and constraints” (p. 108) comes into play.

In my metaphor, I also spoke of being presented with multiple paths. When standing before a forking trail, the correct route may not always seem clear. There is a benefit of taking chances, experimenting, and simply making a decision. Edelson explained that new knowledge is acquired when design decisions are made, regardless of the results (2002). An example of this can be seen in my struggle early on regarding the context of the instruction. I first wrestled with the idea of whether the instruction should be delivered via a video presentation, classroom based instruction, or an self-guided online tutorial. I then looked at learning theories and settled on a PBL approach. The desired outcome of PBL is for the learner to gain a flexible knowledge that can be applied to other tasks (Lin, 2001). As of this writing, my decisions are untested so I do not know if they will be successful or not. After the design is implemented, I can analyze its success or failure. I can then reevaluate and revise the design.

*Analyzing Instructional Design and Learning Theories with Joomla***Conclusion**

This project has helped me to see that there can be more than one way to design instruction and I have a better understanding of how people learn. In IT510, I learned the MRKK model of instructional design. I began to approach this project in the same manner. However, I am happy that I was pushed to explore and discover new ideas. It seems that a designer can approach design by blending various design principals to best suit his design style, the target audience, and the instructional topic. Mistakes will happen, but the designer learns through the process. Existing instructional materials may be revised based on new knowledge and future projects will be influenced by the designer's experiences.

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