PORTFOLIO FOR KATHERINE WALRAVEN

Welcome to my electronic portfolio!

At Virginia Tech, the Instructional Technology Program has been patterned around the Association for Educational Communications and Technology (AECT) domains. This electronic portfolio provides example of the five AECT domains, which include design, development, utilization, management, and evaluation, as well as showcases technology competencies established by the International Society for Technology in Education (ISTE).

Additional links have been added under ITMA domains that are required by the Instructional Technology program at Virginia Tech. These domains include research, resources, resume, and reflections. These links provide the user more information about myself.

Each page in this electronic portfolio contains two key components: a brief overview of the specific AECT domain and links to samples of my work with a reflection accompanying each artifact. The components highlight acquisition and application of instructional design as well as

About Me...

My name is Katie Walraven. I am currently teaching Astronomy and Earth Space Science in Arlington, Virginia. I am pursuing my Ed.S. in Curriculum and Instruction at Virginia Polytechnic Institute and State University (Virginia Tech).

Contact Information

developmental skills that I have gained as a student in the ITMA program.

The user is able to navigate through this electronic portfolio by using the navigation bar at the top of every page. There is also a link to my e-mail account that may be used to contact me to the left of this dialog on the home page.

DESIGN
PROCESS OF IDENTIFYING THE LEARNING CONDITIONS

Design is, for me, the fundamental aspect of instructional technology. It is where planning happens in many forms. I did not realize prior to this program how detailed and extensive the design component was. I had never fully reflected on learner characteristics or the actual design process before. From these assignments I learned to take into account learner characteristics and how to write objectives. From there I discovered how to design instructional strategies that coincided with learner characteristics and met the objectives. From a technology hardware aspect, I was previously unaware of how technology can affect the design. If I know that my learners love webquest activities, I can now write my objectives and choose instructional strategies which are suitable for that specific learner characteristic.

Instructional Systems Design *Microsoft PowerPoint and Quicktime required*
"Instructional Systems Design (ISD) is an organized procedure that includes the steps of analyzing, designing, developing, implementing, and evaluating instruction" **(Seels & Richey, 1994, p.31).**

Multimedia Authoring Project (122 KB Word) - This is a design document for an interactive multimedia tutorial about dimensional analysis which was created in the Multimedia Authoring class. Each stage of instructional systems is included in the document: design, development, utilization, management, and evaluation. The design document shows how I have to create multimedia for this project and that multimedia had to be utilized in a fashion that was beneficial to my students. This design document was great because I put in a lot of time and I was proud of my work and was able to use the process of design in real-time with my Astronomy students. I learned how important design is to creating a lesson. If I was to do this differently, I would have more examples and another set of videos for students who did not understand the first set of videos in the tutorial.

Instructional Design Project (241 KB Word) - This project was the first project where I had to design from the bottom up. I was required to investigate needs and learner characteristics before designing the instructional strategies. This is important to me because I became very frustrated with the process of designing. However, once I had completed the project, I realized how good it felt to finally have followed the process through to completion. I would have changed my approach to the entire project because now I know how important the actual process is and why each step is vital to the whole.

Lesson in Audio Final Project (112 KB zipped file) - This document illustrates the steps of design as well. It includes objectives, analysis, and a final product. But more importantly, it allowed my design experience to extend to audio as the main instructional media. The steps, which I centered on an audio clip, helped me to showcase that audio while simultaneously achieving my instructional objectives. This project was important because it was different than my usual presentation-centered designs and because I have the potential to use it in my classes with some success (based on my

design projection). If I was to do this assignment differently, I would like to have different audio options and have my students progress through the text with audio concept instead of stopping at one audio selection.

Message Designs *Adobe Acrobat and Microsoft Word required*

"Message design involves planning for the manipulation of the physical form of the message" **(Seels & Richey, 1994, p.31).**

Audio Storyboards (4.9 MB Word) - For this project, I used an audio sample from "The Milky Way," part of the Cassiopeia Project. In the storyboards for this assignment, I manipulated not only the audio but also the text to suit my instructional needs. This was valuable because I focused on two ways students learn: through visual and auditory perception. Through this assignment I realized that I do not have to use entire clips or whole texts to achieve my instructional objectives. This assignment is important because I teach a high school class but would like to incorporate college-appropriate material where it would be beneficial to the instructional goal. By using storyboards, I can see where the information is going and in what order. If I could change something it would be using a shorter clip, but using multiple selections to have more practice for my students.

Multimedia Storyboards (1.4 MB PDF) - For this assignment, I designed a project demonstrating how to complete dimensional analysis problems. I decided to deliver the instruction through a tutorial which included massive amounts of practice so that the instruction would be retained for longer than the tutorial itself. In this assignment I learned to incorporate solid plans for retention into my design of a product. In the storyboards I detailed how I was going to incorporate the pieces of my multimedia video into the tutorial. This was important because I not only spent a lot of time on this assignment, but I also experienced the benefit of altering my own message. If I had to do it again I would record all of my video and audio clips at the same time and then edit them into individual pieces instead of putting them together piecemeal.

Instructional Strategies *Microsoft Word required*

"Instructional strategies are specifications for selecting and sequencing events and activities within a lesson" **(Seels & Richey, 1994, p.31).**

Strategy for Instructional Design Project (134 KB Word) - This strategy for my project on the rock cycle demonstrates the importance of sequencing in strategies. I had to take into account how much time should be spent on each group of instructional strategies. Prior to this course I had not examined how events within an activity within a lesson should be micromanaged to produce optimum results. I would have put choice into the instructional strategies if I could. Ideally, I would have multiple activities which teach the same concept so the students could decide which activity suits them and their personal learning style the best.

Strategy for Multimedia Authoring Project (121 KB Word) - This portion of my Multimedia Authoring project focusing on the specific sequence for the lesson. It described the layout for not only the placement of the tutorial, but also what strategies were used in conjunction with the multimedia. The

steps were grouped together and then placed in an order within the groups. This project helped reinforce my organizational needs within my designs for lessons. I learned to follow the process because the process includes all aspects of designing a lesson. I would use more reinforcement of my instructional strategies within in my design.

Learner Characteristics *Microsoft Word required*
"Learner characteristics are those facets of the learner's experiential background that impact the effectiveness of a learning process" **(Seels & Richey, 1994, p.32).**

Multimedia Authoring Project Learner Descriptions (74 KB Word) - This document includes a description of my learner characteristics which I analyzed when designing my Multimedia Authoring project. It is important to include learner characteristics in design, such as the descriptions in this document, because learners are the focus of the lesson. This particular description is included because it details descriptions of my Astronomy class, which were students in the first upper-level elective course I ever taught. I learned about my students through observing them for this assignment. If I could do something differently, I would give students options beforehand, such as a tutorial or a webquest or a worksheet, so that I could design my lesson around that activity.

Instructional Design Project Learner Descriptions (69 KB Word) - This learner description deals with a project on the rock cycle. This description is consequential because it addresses the prior knowledge my students may have regarding the rock cycle. In general my students have heard about the topic, but I am unclear as to the context of their background. The learner description looks at that prior knowledge at the beginning of the design process so that I can take it into consideration in my planning. From this specific assignment I learned the importance of learner descriptions before a lesson has been created. Again, I think I should have consulted my students before designing this lesson. If I had formally assessed their prior knowledge, my instructional strategies and timings I designed may have changed.

Reference

Seels, B.B., and Richey, R.C. (1994). *Instructional technology: The definition and domains of the field.* Washington, DC: Association for Educational Communications and Technology.

DEVELOPMENT

MAKING DESIGN SPECIFICATIONS INTO A PHYSICAL USABLE FORM

The development component is the creation of real instructional materials and experiences, in addition to actual products. Through completing assignments related to this component. I learned how to create valuable materials and experiences that are directly related to my instructional objectives. Before this program, I had not consciously thought about either the process of technology or the hardware side of technology as part of the development of lessons. However, I have since realized how technology can exist in so many forms in lessons. Technology really is a benefit and a great resource in any form. In the future, I think I would like to create more materials. One worksheet is great, but now that I have the confidence and the understanding, I can use technology even more.

Print Technologies   *Microsoft PowerPoint required*

"Print technologies are ways to produce or deliver materials, such as books and static visual materials, primarily through mechanical or photographic printing processes" (Seels & Richey, 1994, p.37).

Graphic File Formats (362 KB PowerPoint) - This presentation demonstrates the design of graphics in various formats. This is vital to the production of graphics because without understanding how the format affects the graphics, you cannot put the graphics into presentations and other media. Prior to this assignment, I had not looked into how the formatting of graphics affected their appearance and saved my graphics without contemplating how they may be altered by their saved format. I will now use this knowledge in the development of graphics in my instructional products.

Modifying Existing Graphics (1.2 MB PowerPoint) - In this presentation I prove that I can manipulate and alter graphics to better fit my needs. I had graphics, and changed them to be more appropriate in their application. I learned about shading and cropping, two modifications which I had never applied to my instructional endeavors. This was important because now I can not only create my own images, but I can alter them as well. For example, my images can now be cropped of unnecessary edges or changed to a more eye-catching color wash.

Audiovisual Technologies   *Microsoft Word and Quicktime required*

"Audiovisual technologies are ways to produce or deliver materials by using mechanical devices or electronic

machines to present auditory and visual messages" **(Seels & Richey, 1994, p.38).**

Lessons in Audio Final (4.9 MB zipped file) - For this assignment, I used an audio sample from "The Milky Way," part of the Cassiopeia Project. I downloaded the Cassiopeia Project from iTunes and then edited the audio to suit my specific focus. This is important to me because I could use this assignment as a trial run for teaching or reinforcing scientific context to my students. In this project I realized that it is not a giant task to edit audio clips and retain only the portions of the audio that are necessary. I would make this lesson a little longer, including having more audio selections and practice with the material.

Lessons in Video Project (185 KB html file) - This assignment represents the culmination of the Video Design course. I had created two videos, one edited and one unedited, on different subjects. I had not edited video for instructional purposes in a few years, so this assignment was beneficial as it focused on the strengths and weaknesses of my video directing and video editing skills. I learned that not all instructional media should be a solitary endeavor, especially when one person is trying to be cameraman, director, and actor! I would definitely ask others for help next time I shoot video scenes.

Computer-Based Technologies *Microsoft PowerPoint and Adobe Acrobat required*

"Computer-based technologies are ways to produce or deliver materials using microprocessor-based resources" **(Seels & Richey, 1994, p.39).**

Computer Literacy Presentation (1 MB PowerPoint) - This was one of the more basic assignments in the program, but it was effective. In this assignment I had to create a PowerPoint presentation. I chose to do mine on the structure of the Earth's interior. This assignment is important because I produced a usable computer-based presentation that could be used in a one-computer classroom with a whole group or on individual computers. I would change how the format of the presentation differs between slides. It does not look uniform from page to page on every computer and that needs to be addressed.

Project and Report Guided Worksheet (106 KB PDF) - This project was a website to teach students about the life cycle of an average star. Using Microsoft Word, I was able to create a worksheet which the students could use to guide their focus on the website. I liked this worksheet because it had pictures (which my students love) and structure (which I love). It was a good combination of "fun" and instruction. I would definitely create more instructional activities such as this one in the future. I do, however, need to reexamine the difficulty of the worksheet. I should add another page, but this worksheet is a good guide for this particular website.

Integrated Technologies *Microsoft PowerPoint and Quicktime required*

"Integrated technologies are ways to produce and deliver materials which encompass several forms of media under the control of a computer" **(Seels & Richey, 1994, p.40).**

Multimedia Project (101 MB zipped file) - This tutorial was created using many different computer technologies. I used PowerPoint, Quicktime, GarageBand, and many other programs to create one product. My students could access the tutorial on a computer and complete it individually when appropriate. I was very proud of this project because it incorporated many facets of my technological

knowledge, both process and product, into one program. If I had more time, I would have added a second "layer" to the tutorial where my students who didn't understand the first time could have a second option to have the instructions delivered in different words.

Project and Report Final Project (8 KB html) - This project is a website detailing the life cycle of an average star. I created a page for each stage of the life cycle, but took it one step further to incorporate an extra page for each stage with information that was interesting but not vital to the students' assignment. This project took a lot of time and it was my first attempt at creating a webpage with text, video, graphics, and voiceovers. I was very pleased with the end result. Again, if I had more time, I would add more pages about the life cycle of a massive star so that the project was more of a complete lesson instead of one portion of a whole lesson.

Reference

Seels, B.B., and Richey, R.C. (1994). *Instructional technology: The definition and domains of the field.* Washington, DC: Association for Educational Communications and Technology.

UTILIZATION
ACT OF USING PROCESSES AND RESOURCES FOR LEARNING (Seels & Richey, 1994, p.46)

The utilization aspect of instructional design is how users will interact with technology as a product and a process. This component also deals with how a user of instructional technology can convince other educators to use a specific technology. These assignments took a lot of effort on my part because I do not consciously consider such aspects as a program's "user friendly" label or what support was offered. When I use hardware or designs, I try to use programs and guidelines that I already know instead of venturing into another arena where I might not know the components or requirements. However, I did appreciate how I have the ability to facilitate a user's perspective in regards to instructional technology products and resources. In the future I will be more aware of the limitations of instructional technology products as well as more certain of the validity of certain products.

Media Utilization *Microsoft PowerPoint, Microsoft Word, and Quicktime required*
"Media utilization is the systematic use of resources for learning" **(Seels & Richey, 1994, p.46).**

Quality and Credibility of Web Sites (34 KB Word) - This is a valuable tool when dealing with students and the internet. My students have to complete various research-based projects through the year and must examine the validity of their sources. It is quite easy in a science class to view a "respectable" looking website to find that the information has no documentation. This is an important artifact to include because it can be used to show students how to use the internet for reliable sources. From this assignment I learned how important it is to view multiple features of a website, not simply its author, before deciding if it is credible. I think in the future it would be useful to post a list of criteria for credible websites in my classroom so that it is available to my students and myself at any time.

Multimedia Authoring Project (101 MB zipped file) - This tutorial I created had a very specific purpose. I designed it to be a stand-alone supplement to prior instruction. My students needed to either review or relearn dimensional analysis, and so I aided them with this goal through the use of technology. Within the tutorial students are also given instructions on how to use the tutorial. I was very pleased with the result and the ease of use of the tutorial itself. I learned that students like using technological programs, as long as they understand how to use it and are not left confused and frustrated.

Diffusion of Innovations *Microsoft Word required*

"Diffusion of innovations is the process of communicating through planned strategies for the purpose of gaining adoption" (Seels & Richey, 1994, p.46).

Software Evaluation (51 KB Word) - In this assignment, I found a simulation of plate tectonics online and used a set strategy to determine its effectiveness. I needed to have a method to compare the objectives of my lesson to the objectives associated with the simulation. This is important because I needed to relate the simulations to the objectives for presentation to my entire content team in order for the simulation to be approved as a viable activity. From this assignment I realized that a simulation may look easy and align with objectives, but it is beneficial to have a method of comparing the benefits and deficits of the simulation. I think if I were to redo this assignment, I would put the "ID Expert Review" section at the beginning of the assignment and the data supporting my conclusion afterwards so readers can see my opinion before they read further.

Digital Audio Comparisons (33 KB Word) - This assignment was completed with the goal of choosing one audio player (either Windows Media Player, Real Media, or iTunes) to use in my classroom and ideally the entire school. This is important to me because I do not have administrative rights on my computer and must persuade my colleagues, and specifically the technology lead teacher, to download the program which I deemed to be the most beneficial to my students and my instruction. From this assignment I learned how to gauge the program's merits for instructional purposes instead of personal preference alone. If I had to do this assignment again I would have more structure to my argument for the media player that I chose.

Implementation and Institutionalization *Microsoft Word required*

"Implementation is using instructional materials or strategies in real (not simulated) settings. institutionalization is the continuing, routine use of the instructional innovation in the structure and culture of an organization" (Seels & Richey, 1994, p.47).

Supporting Technology (43 KB Word) - This assignment was a string of questions which I answered about technology in schools and its effectiveness. This fits under utilization because I am arguing that technology is necessary in school and why it should be implemented. This is important because it solidifies my views as to why technology should be used in the larger school environment. One difference I would make would be to have more facts in my statements of opinion to make them more credible.

Media, Technology, and Learning (26 KB html) - In this assignment I had to analyze a situation where I used media in my instruction. This is important because my school currently has common video websites blocked (such as youtube.com) from both student and teacher use. I can argue through the instructional strategy presented in this assignment that using video clips is beneficial to my students' learning. This is very important to me because I love showing my students real life videos of the natural events we are discussing in class. I think if I were to redo this assignment I would be sure to include state standards and their correlation to specific videos to solidify my argument.

Policies and Regulations *Microsoft Word required*

"Policies and regulations are the rules and actions of society (or its surrogates) that affect the diffusion and

use of Instructional Technology" **(Seels & Richey, 1994, p.47).**

Implications of Using the Internet (36 KB Word) - This document consisted of a compilation of websites with educational value. Most importantly, some of those websites included copyright issues and privacy issues. This is an important artifact because I need to know about issues teachers face using the internet on an almost daily basis. I maintain a class website and I appreciate websites that clearly dictate what is and is not permissible. I learned how many fair use policies there are dealing with instruction, and specifically instruction and the internet. I think if I could do this assignment again I would focus more on security, which I realized I need when I am posting students' scores online.

Copyright Issues (29 KB Word) - This document addresses three issues which instructors may encounter with fair use policies. I looked at the time restricted programs, media use in presentations, and copying books for use in class. This is important because it directly affects my instruction. I learned that it is acceptable to randomly include media in presentations. It is very reassuring to know that including a portion of a popular song to cue students' memories is legal!

Reference

Seels, B.B., and Richey, R.C. (1994). *Instructional technology: The definition and domains of the field.* Washington, DC: Association for Educational Communications and Technology.

MANAGEMENT
ART OF CONTROL THROUGH ORGANIZATION, PLANNING, AND SUPERVISION

The management section of the AECT domains seemed to focus more on the organization of the information than creating new activities. In management, I learned that there must be micromanagement of the projects and instruction themselves, the resources for the projects, the system delivery, and information within the project. I did not realize that management was a major component of instructional technology, both technological processes and hardware. It seemed to me that every aspect of instructional technology simply came together and that was the end of it. However, after having completed this program, I realized just how big the management portion really is. Management plays at least a small role in the majority of projects and plans. The technological hardware aspect of management surprised me. I suppose I have adapted to using technology to manage items for so long that it is second nature to me now. If I was to approach management in a different way I would be sure to be more aware of what I was managing and the best way for it to be managed. Sometimes a table is sufficient and sometimes it is not.

Project Management
"Project management involves planning, monitoring, and controlling instructional design and development projects" **(Seels & Richey, 1994, p.50).**

ASSURE Lesson Using Video Clips (39 KB html) - In this website I demonstrate that I can develop a plan where I am managing many different medias simultaneously. This lesson was centered upon clips featuring Yellowstone National Park. This is important to me because it is what I consider a "functional" assignment, one which I can implement immediately if I so choose. I learned that it is difficult to monitor and manage video clips which are online. The Discovery Channel site, for example, changes its videos a lot, which means I have to continuously update the links in the project so that the correct videos are shown.

ASSURE Lesson using the Density Gizmo (21 KB html) - In this lesson I demonstrate that I can manage the planning of a computer-based lesson. I was very excited about this assignment because I truly appreciate management when I am surrounded by my students asking a million questions simultaneously. I solved that problem in this lesson by creating a presentation to model how to work the density gizmo. I learned that management of a lesson or project has to be fluid because some aspects need more managing than others. If I was to do this assignment differently I would have allowed for instances where the resources did not function and I would need to have developed a backup plan. That seems to be a very wise management technique.

Resource Management *Microsoft Word required*

"Resource management involves planning, monitoring, and controlling resource support systems and services" **(Seels & Richey, 1994, p.51).**

Project and Report Time Log (127 KB Word) - In this document I have a detailed list of the time I spent doing specific planning and preparation pieces for my Project and Report submission. The time is broken into categories and then each category is further broken down into time spent on specific activities. This is management because I am demonstrating how I can not only use my time wisely but also that I can set aside times for one specific aspect of a project. I learned how time consuming projects can be as well as that time management is an integral part of creating lessons and multimedia. Without scrutinizing my time management in the first place, I would have never been able to analyze what pieces were monopolizing the time. If I were to redo this assignment I would be more specific in my time categories so that I know precisely where I can cut time in the next project, such as in learning the program used to create a similar project.

ASSURE Lesson on the Planets (41 KB html) - This assignment was a lesson plan on the planets, but was designed for a distance learning class with its own instructor. So this lesson proves that I can manage two aspects of instruction: other personnel and a website with the instructional materials linked on it. The issue of distance learning does not currently have a direct effect on my instruction, but I do use my class website to correlate my lesson with my peers across the state. My ability to manage the website and give clear directions to other personnel is vital in today's world of education. I learned that much has to be managed and controlled in order for objectives to be achieved. If I had to complete this assignment a second time, I would be more explicit in giving directions to my fellow teacher in the other classroom.

Delivery System Management

"Delivery system management involves planning, monitoring, and controlling 'the method by which distribution of instructional materials is organized... [It is] a combination of medium and method of usage that is employed to present instructional information to a learner" **(Seels & Richey, 1994, p.51).**

Instructional Materials and Displays (25 KB html) - In this assignment I used established guidelines to manage the printed material we use in my Earth Space Science class. This allows me and my peers to feel more at ease with using the textbook. Without this management aspect of using the material there would be free reign with the printed material. This was useful because I had not tried to manage guidelines for written text before. It was very informative because the textbook was a poor choice for my students on many levels. This means that I must manage the text even more closely so that my students learn what they are supposed to.

Audio Delivery (10 KB html) - In this assignment I chose to manage an audio CD. This assignment presents three benefits and three limitations to using a CD for delivering instruction. Through this assignment I realized that newer technology is not always better. Sometimes the new delivery systems have problems as well. If I were to do things differently, I would have looked at more than just two sources of audio. For example, I can also use podcasts to relate information, but this is not always the superior way to deliver instruction.

Information Management *Microsoft Word and Microsoft Excel required*

"Information management involves planning, monitoring, and controlling the storage, transfer, or processing of information in order to provide resources for learning" **(Seels & Richey, 1994, p.51).**

Filebox Organization (97 KM Word) - This document consists of a screenshot of my filebox configuration. This demonstrates my ability to organize and store massive amounts of information, as all the assignments for my ITMA classes are located on that server. This was a simple assignment, as I always alphabetize my documents and I had prior experience with the filebox server. However, I did learn about managing files within folders and how to transfer large amounts of material at one time from my computer to the filebox server.

Spreadsheet Organization (37 KB Excel) - This Microsoft Excel file demonstrates that I can organized information so that other users may easily understand the information. I also created a graph from the data, which is a management technique because it allows for a different method of processing information. From this assignment I also learned how to sort data, which makes processing more straightforward because I can enter in data and then sort it according to whatever parameters I wish. It may be beneficial to use data that is applicable to my content area and my own data processing if I were to redo the assignment.

Portfolio Proposal (65 KB Word) - This proposal is for an electronic portfolio which would demonstrate competency in the technology standards required by the Commonwealth of Virginia as instructional personnel. A portfolio is management in two ways: it is a method of transferring information, such as competency artifacts, as well as a way to process information. A portfolio involves reflection at every step and for each artifact, which is a method of processing for the author of the portfolio.

Reference

Seels, B.B., and Richey, R.C. (1994). *Instructional technology: The definition and domains of the field.* Washington, DC: Association for Educational Communications and Technology.

EVALUATION
PROCESS OF ESTABLISHING THE ADEQUACY OF INSTRUCTION AND LEARNING

Without any form of evaluation, a program will not grow. No program is perfect, and so it must be constantly evaluated for relevancy and accuracy among many other characteristics of a good program. I think the importance of the evaluation section is twofold. I learned that teachers can evaluate students on their comprehension of a concept, but they can also evaluate the method of delivery and the activities. A good teacher develops materials that pertain to objectives in her class, but a great teacher develops and than adapts the same material to constantly serve her students' needs more completely. My perceptions about technology, both processes and hardware, were altered only in that I did not fully grasp the idea of evaluation of programs in addition to assignments. In the future I will be more aware of how to evaluate not only my students, but also myself and instructional components I either create or utilize.

Problem Analysis *Microsoft Word required*
"Problem analysis involves determining the nature and parameters of the problem by using information-gathering and decision-making strategies" **(Seels & Richey, 1994, p.56).**

Instructional Design Needs Assessment (38 KB Word) - In this assignment I evaluated the issue of students not learning the rock cycle. I looked at how their view of the topic affected current instruction as well as why I thought this need could be fixed through instruction. This is important to me because I have taught lessons on the rock cycle for multiple years without evaluating the need for a change in my current approach. From this assignment I understood that all instructional objectives have some sort of need that can be solved through various forms of instruction. I will be looking at the need of the instruction before jumping in head first from now on.

Multimedia Authoring Needs Assessment (32 KB Word) - In this assignment I investigated how I approached dimensional analysis. My students came from a variety of math and science backgrounds, so there was a need for an instructional strategy that could address this diverse prior knowledge. I realized that there was a need by modeling a dimensional analysis problem for my students and receiving mostly blank stares in response. This evaluation of a problem was important because I am looking to continue teaching Astronomy and will encounter similar problems that I will need to analyze every year. I learned how to step back from the problem and view it analytically and objectively instead of taking my self-criticism as failure. In the future I hope to approach all of my instructional problems in this fashion.

Criterion-Referenced Measurement *Adobe Acrobat required*

"Criterion-referenced measurement involves techniques for determining learner mastery of pre-specified content" (Seels & Richey, 1994, p.56).

Project and Report Final Document (252 KB PDF) - In this assignment, I had designed a website which my students would read while filling in a worksheet. However, they were being formally evaluated using an online quiz on which they needed to have a score of 70% of higher to show comprehension. The quiz was a multiple choice quiz given after viewing the website. This is important to me because I need to know how to create assessments based on set criteria. My students are assessed using criterion-referenced measurement at the end of the course, and I should help them prepare by giving them some similar assessments during the course.

Instructional Design Final Document (241 KB Word) - For this project I used specific criteria based on the objectives I had set to form the questions my students would be asked. For example, if the objective was to identify a sedimentary rock, the assessment was "Give two characteristics of a sedimentary rock." This is important because I give quizzes once a week, and had never truly correlated the objectives to a criterion-referenced measurement. I learned how to create meaningful and appropriate evaluation items. If I had more time, I would have developed multiple forms of criterion-referenced measurement so I could vary the format for my students instead of constantly requesting short-answer responses on quizzes.

Formative Evaluation *Adobe Acrobat and Microsoft Word required*

"Formative evaluation involves gathering information on adequacy and using this information as a basis for further development." (Seels & Richey, 1994, p.57).

Multimedia Authoring Formative Evaluation (35 KB Word) - In this assignment I summarized critiques of my Multimedia Authoring project. This is a good way to show formative evaluation because it is helping me to make my project a greater success. Some of the issues were easily fixed, and others would have taken much more time than was available in the course. Either way, I examined the critiques and determined how to develop my project even more. This is important to me because I need to learn to accept constructive criticism as well as learn to not think my projects are perfect until perfection has been confirmed by strangers.

Project and Report Evaluation (65 KB PDF) - This assignment required me to create my own evaluation tool. Both a peer teacher and one of my students completed this evaluation tool so that I could make changes where necessary. Those changes were sometimes small, such as a typographical error, and sometimes larger, such as a defective link. This was important because I wanted to be able to present the best project possible, so evaluations are a great way to receive feedback. I learned to take a deep breath and not become defensive when my project was evaluated. I also realized the integral part of the instructional technology process played by formative evaluation. If I were to redo this assignment, I would collect more data so that I could assess personal preferences, such as color and font size, more accurately.

Summative Evaluation *Microsoft Word required*

"Summative evaluation involves gathering information on adequacy and using this information to make decisions about utilization" (Seels & Richey, 1994, p.57).

Visual Activities (34 KB Word) - This is a journal article critique that addresses the effect of using hands-on activities or computer simulations in the classroom. It is important to include in the summative evaluation section because I gathered information on a topic which very much concerns me in order to attempt to make the best decision when it came to the utilization of either hands-on or simulated activities. I learned not only how to critique an article, but also gained some insight into the hands-on versus simulation argument. I do not think I would change anything in my critique of this article, but I will make sure to find more articles before stating my opinion on the matter.

Advantages and Disadvantages of Educational Evaluations (61 KB Word) - I am using this assignment in the summative evaluation sub-component because I looked at different types of evaluations used in education and investigated the pros and cons associated with each one. This assignment was important because I gathered information on evaluations in an attempt to decide which evaluation method is the most reliable in certain situations. I not only learned about the different types of formative evaluations, but I also realized that no evaluation tool is infallible.

Reference

Seels, B.B., and Richey, R.C. (1994). *Instructional technology: The definition and domains of the field.* Washington, DC: Association for Educational Communications and Technology.

RESEARCH

My research portion of the ITMA program includes many different aspects of research. There is research that focuses on instructional objectives, research on the use of audio in achieving instructional goals, as well as research on copyright issues which educators face on a daily basis. My ideas on research have been quite solidly formulated already. My educational background is in Geology and History, so I have been doing research for most of my adult life. However, I had not yet completed research centered around instructional practices or hardware technologies. These artifacts helped to make educational research more tangible for me and less of my prior bias of educational research being conducted by someone who hadn't been in a classroom in decades telling me what to do based on their research. The most impacting research I completed was on the copyright issues. I felt that this was very insightful research that could be applied to my instruction immediately. I also learned that research is fundamental in any discipline, and should be read to allow for an increased understanding of the scope of your vocation.

Research Report (36 KB Word) - a Word document that researches the effectiveness of computer simulations in Science classrooms.

Research in Audio I (35 KB Word) - this Word document summarizes and analyzes research conducted on audio presentations and language laboratories when used to guide instruction.

Research in Audio II (51 KB Word) - another summary and analysis of a research article that examines learning styles and the benefits of different types of audio resources for those different learning styles.

Copyright Issues in Education (29 KB Word) - this Word document lists three specific copyright issues that I face as an educator. It also discusses the laws pertaining to the issues and how I can remain within the boundaries of the lab and still use resources in my instruction.

REFLECTIONS

The reflection portion of any class has always been very difficult for me. I have a hard time reflecting on what I have done well and what could have been improved. I think the ITMA program had a major focus on reflections, which was good for self-improvement. It is interesting to compare my reflections on technology from my first semester to my last semester in the ITMA program.   While I think that I am still reluctant to complete reflections, I believe it is because I have only been reflecting professionally for four years and need to have more practice. I am good at immediately assessing what went well and what failed in a lesson, but am unfortunately lacking in substance in the inner-reflection activities. I am truly working on being more thorough, thoughtful and less rushed in my reflections. This program has taught me that reflection is vital to education because without reflection there would be no growth. I would be remiss to ignore reflection in my future instructional endeavors.

Approach to Technology (57 KB Word) - a Word document that reflects upon the growth of my definition of technology.

Audio Reflection (26 KB Word) - another reflection written at the end of the Digital Audio course that offers my thoughts on digital audio and its use in the classroom.

Project and Report Reflection (40 KB Word) - this document is a reflection on my final project for the ITMA course.

Applying Instructional Technology (85 KB Word) - this document is a reflection on how I can apply instructional technology to my needs as an instructor.

Previous Approach to Instruction (44 KB Word) - this document reflects upon how I used to approach the areas of design, development, utilization, management, and evaluation in instructional technology.

Current Approach to Instruction (46 KB Word) - this document is a reflection on my current approaches to instructional technology through the components of design, development, utilization, management, and evaluation.

My Approach and a Non-IT Approach (24 KB Word) - this document reflects upon and compares how I used instructional technology when I first began the program versus how I use instructional technology now.

Revision Plan for Portfolio (31 KB Word) - this document is a plan for the revision of this portfolio.

It includes both a summary of the peer evaluations and my own thoughts on how I can improve my portfolio.

RESOURCES

Virginia Department of Education - a great site to find information on SOL standards for the state.

United Streaming - a wonderful resource for videos and pictures for instruction.

Virginia Professional Educators - Virginia's alternative to politically-driven teacher associations.

United States Distance Learning Association - a webpage about the website for USDLA.

National Science Teachers Association - the website for the NSTA.

NASA - a great resource for articles and lesson plans for Astronomy

Astronomy Picture of the Day - beautiful pictures from NASA with astronomer's explanations at the bottom.

Textbook Website - John D. Fix's "Astronomy: Journey to the Cosmic Frontier" as a website with educator resources.