

Final Report [\(permalink\)](#)

last edited by [Jen GORLEWSKI](#) on Wednesday, 12/02/2009 8:33 AM

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Final Report

Summary

The Arts Team chose to build a BookBuilder book that would teach the instruments of the orchestra to third grade students. To develop instruction to successfully teach this content, the team used the ADDIE instructional model. We began with the analysis process, creating a scenario that would resemble a real-life teaching situation. Once we felt that we had sufficiently defined and understood our target audience, we began the design process by creating goals and objectives for instruction. Ultimately our goal of instruction is to teach the students the instruments of the orchestra in preparation for a field trip to the local concert hall. After our goals and objectives were determined, we began the development process. We determined the BookBuilder book would be best used as an introduction to the instruments because it uses audio and visual content selected to engage third graders. Once the students viewed and interacted with the book, they would participate and complete other activities, such as flowcharts, group posters, building sculptures, and a written test. Although summative evaluation is not completely possible, we were able to complete a formative evaluation. The formative evaluation gave us some feedback and suggestions for improving the book, such as having the information that the coaches provide being consistent throughout.

Analysis

Goal and Objectives

Goal: Third grade students will learn the instruments of the orchestra in preparation for a trip to the local concert hall for an orchestra concert.

Objectives:

- Identify the instruments of the orchestra
- Identify the sound each instrument makes
- Pronounce the instruments of the orchestra
- Identify and pronounce the sections of the orchestra
- Categorize the instruments of the orchestra into the proper sections

Process Used for this Analysis

In order to determine our goal and objectives, we needed to determine the context of the problem. We created a scenario that would help better determine our goals and objectives. First we had to decide the best audience for the book. Our content expert, Jeff, assisted with this. He said that 3rd grade students usually take a field trip to a concert. This determined our audience, and we based our scenario on Jeff's field trip idea. *The scenario is listed in the Context Analysis section below.*

Needs Analysis

Needs Analysis Worksheet:

1. What change is being requested?

- A new way to teach the instruments of the orchestra in preparation for the field trip to the concert hall.

2. Who is requesting this change?

- The students' teacher, Mr. Jeff

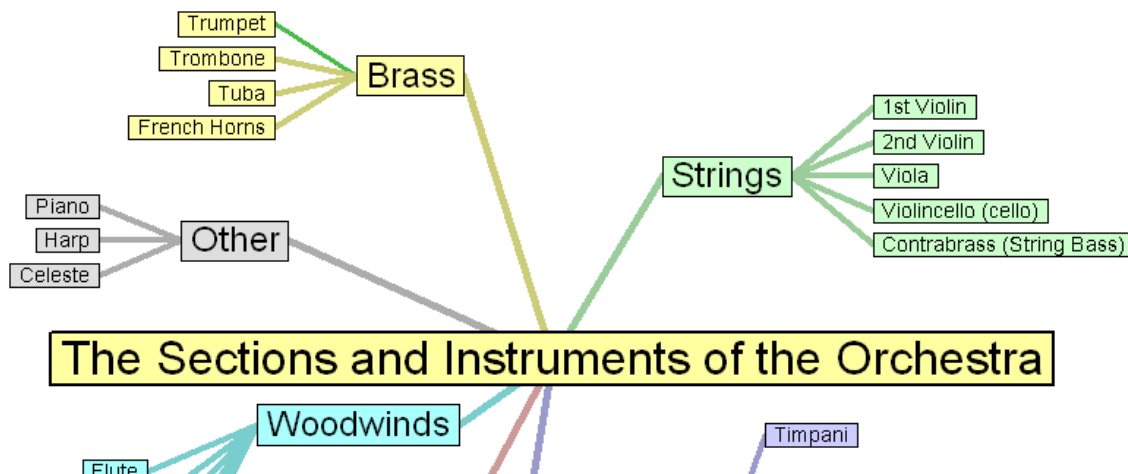
3. Where will this change need to take place?

- Readalot Elementary School, 3rd grade students

4. Is instruction the most appropriate mean for bringing about the desired change?

- Instruction is the best means to bring about change, but it needs to be a different format than the text-only approach Mr. Jeff has previously used.

Content Analysis



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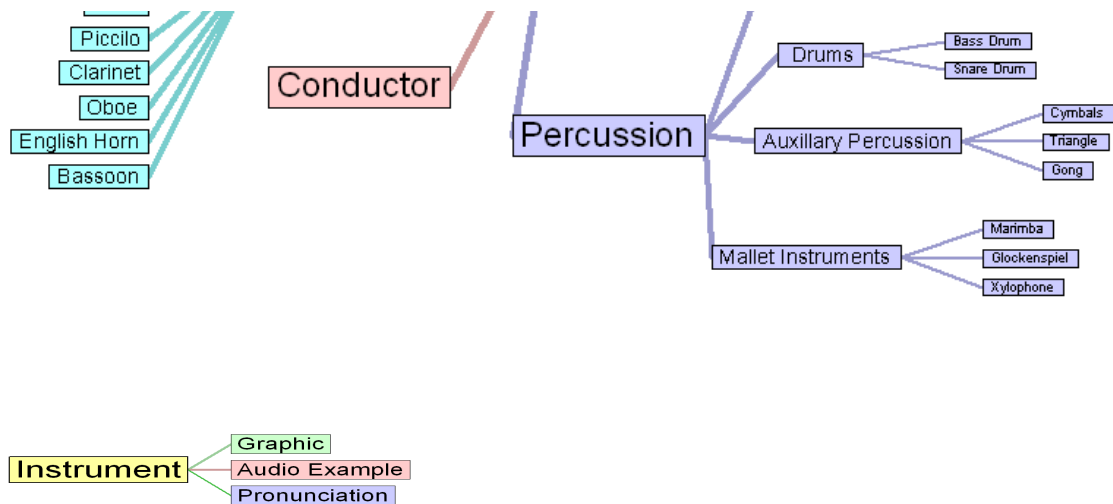
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Learner Analysis

We created a student profile that we felt would describe the typical student that would be using our book.

Student Profile:

- Megan is a typical 3rd grader in Mr. Jeff's class at Readalot Elementary. She reads at grade level and is interested in learning new things, but she becomes easily distracted when faced with large amounts of information. She is excited about the upcoming field trip to the concert hall, primarily because it is a change to be out of the classroom for the day rather than for the opportunity to attend an orchestra concert.

Based on the Student Profile, we determined:

- The students would be reading at or near 3rd grade level.
- The students would have a limited attention span.
- The students would have limited capacity to memorize large amounts of new material.
- The students would benefit from different teaching methods.

Context Analysis

In order to complete an analysis, we had to determine the context or scenario of our problem.

Scenario:

- Mr. Jeff's 3rd grade class at Readalot Elementary School is going to hear the city orchestra at the local concert hall in two weeks. To prepare his students for the field trip, Mr. Jeff needs to teach his students the sections of the orchestra, the instruments in each section and what each instrument sounds like. Although Mr. Jeff has shown his class each instrument and told his student about each instrument, the students are still having a hard time remembering all the information. How can Mr. Jeff make sure all of his students remember the names, classification, and sounds of the instruments before the field trip in two weeks?

Design and Development

Description of Instruction

The purpose of instruction is to prepare the 3rd graders at Readalot Elementary School for a field trip to an orchestra concert. The Bookbuilder tool is used as an introduction to the instruments of the orchestra, teaching the look and sounds of the instruments, how the instruments make the sounds, and the sections of the orchestra. The book includes uniform images of the instruments and audio clips of each instrument and each section. The book also include "coaches" that give the reader more information about the instrument, such as how it makes sound and other important facts. After viewing the book, the students participate in various activities to reinforce what they learned in the book.

The sequence of the instruction is as follows.

Set Induction (Introduction):

- Teacher will play an audio or video selection of music performed by an orchestra for the class. (i.e. the overture to Mozart's opera *The Marriage of Figaro*)
- After the class hears/views the music selection, the teacher will ask the students questions similar to the following to start dialogue about the music and to introduce the concept of "The Orchestra."

- What do you think of the music you just heard? Do you like it? Why or why not?
- Where do you think you can hear or see this type of music being performed?
- How many instruments do you think are playing to create this music?
- Does anyone think they can name at least one instrument that they might have heard?

- After the teacher has gone through the questions, the teacher should discuss with the students the concept of the orchestra. The teacher should possibly have a few photos or pictures to help the students start to understand what an orchestra might look like (if only music was played and not a video). The teacher should discuss such things as the following:

- Definition of orchestra
- How many instruments make up an orchestra
- The conductor's job
- Where orchestras perform

Instructional Activities:

Students will:

- In partners, view "The Instruments of the Orchestra" on bookbuilder.cast.org.
- Using the bookbuilder book, in partners, complete a flowchart or diagram of the instruments, arranging the instruments into sections, and making sure to use correct spelling.

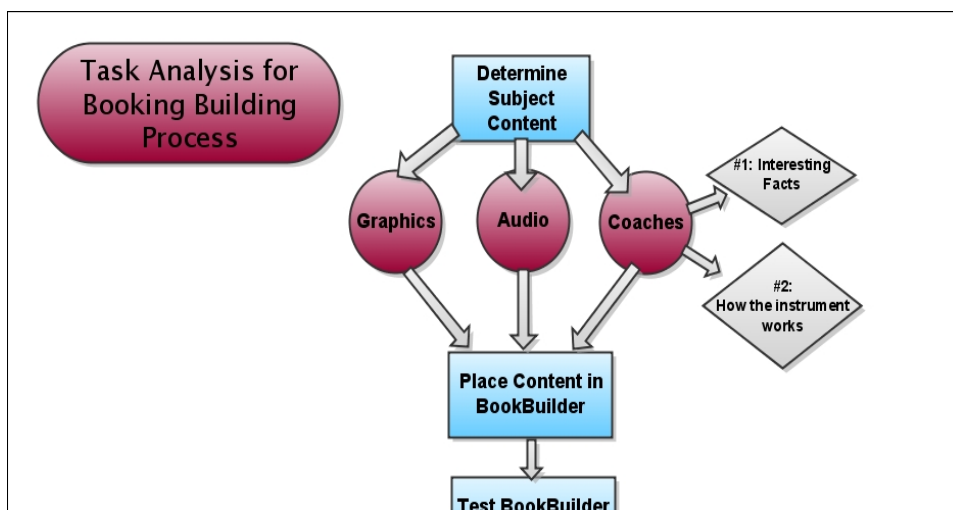
3. In groups, create a poster for the section of the orchestra that was assigned. Posters should include:
 - a. The section name
 - b. Graphics (drawn) of each instrument
 - c. The names of the instruments
4. Once the posters have been created, each group will present their poster to the class, telling the class about their section of the orchestra and the instruments in their section, including pronouncing the section name and the instruments. Classmates and teacher will give praise upon completion of the presentations.
5. Using common classroom craft supplies, students create one of several 'instruments' to create a classroom 'orchestra':
 - a. Coke-bottle 'flute'
 - b. Coffee-can 'drum'
 - c. Shoebox & rubber band 'violin'
 - d. Paper towel tube 'oboe'
 - e. Paper cone 'trumpet'
 - f. Pencil 'conductor's baton'

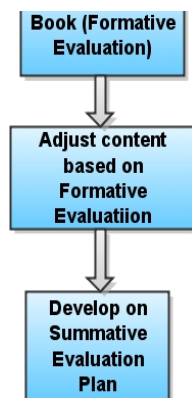
Evaluation/conclusion:

1. Students will complete a written test on the sections and instruments of the orchestra.
2. Students will complete an auditory test, identifying the sounds of each instrument of the orchestra.
3. Upon completion and passing the test with at 80% or higher, students will attend an orchestra concert performed at a local venue.

Develop Process Supporting Instructional Approach

Our task analysis or procedure for building our BookBuilder book is shown in the diagram below.





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When determining the instructional module, we based our instructional activities on Marzano's Strategies. We scheduled the activities in a logical sequence, and incorporating as many different types of learning as possible.

1. In partners, view "The Instruments of the Orchestra" on bookbuilder.cast.org. (Cooperative Learning, non-linguistic representation – sound and picture)
2. Using the bookbuilder book, in partners, complete a flowchart or diagram of the instruments, arranging the instruments into sections, and making sure to use correct spelling. (Questions, cues, and organizers)
3. In groups, create a poster for the section of the orchestra that was assigned. (teacher will assign groups and section) Posters should include:
 - a. The names of the instrument
 - b. The section name (categorizing)
 - c. Graphics (drawn) of each instrument (non-linguistic representation)
4. Once the posters have been created, each group will present their poster to the class, telling the class about their section of the orchestra and the instruments in their section, including pronouncing the section name and the instruments. Classmates and teacher will give praise upon completion of the presentations. (reinforcing effort and providing feedback)
5. Using common classroom craft supplies, students create one of several 'instruments' to create a classroom 'orchestra': (kinesthetic and non-linguistic representation)

Major Components

Introductory Activities: To engage the learners, music and the BookBuilder will serve as introductory activities.

Testing the Learners: To test the learners to see if the students achieved the objectives, the students will be taking a written test that will combine visual and auditory elements.

Rubrics and Checklists: Rubrics and checklists will be used to evaluate the posters and the sculptures. They will also assist in giving feedback to the students.

Observation: As the students go through the BookBuilder tool and cooperate in groups, the teacher will observe their behavior and give feedback and reinforcement to the students on their performance.

Practice: Worksheets/graphic organizers will assist in reinforcing what the students learned after viewing the BookBuilder tool. The posters and presentation will also serve as practice activities.

Motivational Strategies: 'Instrument' craft project and subsequent 'orchestra performance' with these instruments will motivate the students while providing additional experience with how the instruments create sound.

Implementation and Evaluation

Key Development Decisions and Justification

Although the book has not been implemented yet with students, consideration was given to key issues that we felt would impact its effectiveness once implemented. Five key development decisions made in the development of the Arts Team book to ensure its effectiveness included:

- the inclusion of South Carolina specific images to enhance its relevance for its intended South Carolina learners;
- giving consideration to the amount and complexity of the content to ensure that it was at an appropriate level for third grade readers;
- utilizing a similar style of instrument image throughout the book both for consistency and to focus the user's attention on the instrument itself without competing content in the image backgrounds;
- providing nonlinguistic content in the form of audio clips and images;
- keeping the focus on the goal of preparing the class for a field trip to a performance by including them as the final "instrument" in the orchestra.

Three additional key decisions made to ensure that the product was easy for students and/or instructors to use included:

- the decision to organize the content into sections that mirror the sections of the orchestra;
- to consistently use Bookbuilder's "Coaches" characters to supplement the main text with prompting questions and "fun facts;"
- and designing it in a format that, while intended to be central to a directed module of study in preparation for a class trip, would also make it usable as a standalone exploration tool that could be used by any third grade readers.

Evaluation

Formative Evaluation

Throughout the development of The Arts Team Bookbuilder book, *The Instruments of the Orchestra*, formative evaluation directed our design and development. One of the biggest challenges we faced was limiting the scope of the content so that it would not be overwhelming for our learners. Early examples of the content (text descriptions, graphic images, and audio examples) were shown to a 3rd grader (the content expert's daughter) and her teacher to determine if the content level was

appropriate. She also previewed the voices of the Bookbuilder coaches and picked her favorites (and vetoed those she thought were "creepy"). This relatively quick evaluation early on in the process helped us to develop the rest of the content on an appropriate level.

Once nearly completed, the Bookbuilder book underwent an informal, formative evaluation process through input gathered from a short survey designed to collect feedback about the project. Additionally, the book was shared with subject matter experts who offered a number of points to consider for possible revisions to the book that included:

- *With the wind and brass, it was stated how the sound was created. For the strings you may want to state that the sound is produced by drawing the bow across the string, as well as being plucked (pizzicato). The harp is the only stringed instrument in the orchestra that is performed solely by plucking.*
- *Also, when our students select the instrument that they want to play, we inform the students that the larger the instrument the lower the sound. The smaller the instrument is, the higher the pitch will be.*
- *With the timpani, you may want to add that it is tuned to a particular pitch. It is one of the few "pitch" centered percussion instruments other than the mallets.*

This type of feedback constitutes the essence of a formative evaluation as defined by Scriven (1996) - as "a basis for improvement" and by Weston, Mc Alpine, and Bordonaro, (1995) as including the "identification and subsequent remediation of problematic aspects." This type of evaluation is in contrast to summative evaluation, which looks at whether the intended instructional goals were achieved as a result of implementation of the product or process - or how well a group did on a learning task that utilized specific learning materials and methods. Due to the nature of this project, there is no summative evaluation data for the book as it has not been implemented with actual students. However, we did include a plan for the summative evaluation, if we were given the opportunity to use the book in a real-life setting.

Summative Evaluation Plan

To conduct a summative evaluation of the Instruments of the Orchestra Book, we will:

1. Have orchestra teachers in the area use the book. This will allow us to incorporate suggestions for improvement from teachers who are all very familiar with the content, but who may be teaching across more varied student populations. This input will enable us to refine the product to better meet the need of more diverse students within the targeted grade level.
2. Gather information (averages, percentages) from the following classroom activities:
 - Flowchart
 - Posters (rubric)
 - Instrument sculpture (rubric)
 - Written and Auditory test
3. Interview the teachers to get an understanding of how the book worked and what might need improving.
4. Have the students complete an attitude survey. Some of the questions that are on the survey may include:
 - a. Do you know the names of the instruments of the orchestra?
 - Yes, all of them
 - Most of them
 - A few of them
 - None of them
 - b. Do you know the sounds of the instruments?
 - Yes, all of them
 - Most of them
 - A few of them
 - None of them
 - c. Did the book help you learn the names and sounds of the instruments of the orchestra?
 - Yes, all of them
 - Most of them
 - A few of them
 - None of them
 - d. What was your favorite activity of this unit? (choose one)
 - Reading the book
 - Flowchart
 - Posters
 - Instrument sculpture
 - Test
 - e. What was your least favorite activity for this unit? (choose one)
 - Reading the book
 - Flowchart
 - Posters
 - Instrument sculpture
 - Test
 - f. Are you prepared for the field trip to the Music Hall?
 - Yes
 - Mostly
 - A little
 - Not at all

Summative Evaluation Plan

Reasons to Conduct Evaluation

In *The Essentials of Instructional Design*, Brown and Green offer these reasons for conducting evaluation:

- "Conducting carefully planned evaluation activities helps the instructional designer revise and improve the instructional intervention to better serve the learners."
- "A properly designed and implemented evaluation provides an instructional designer with appropriate data that can be analyzed to determine the success level of who or what is being evaluated. Once this level is determined, the designer decides whether changes need to be made...Changes are made to help improve the likelihood that a learner will achieve a high level of success."

Expected Maintenance and Distribution Requirements

As our Bookbuilder book leaves the design and development stage and begins to be utilized, there are potential issues with supporting its use. There is the obvious need of a computer/browser/internet to view the content, but the book also contains audio examples. This places the additional demands of audio support software and speakers on the classroom computers.

An issue that is present in every school across America and will affect our product is the need for students to read at grade level. In an ideal world, all students are able to read at or above grade level. The reality is, most students read below grade level. Therefore, the scope of our BookBuilder product may not benefit all third grade readers. Although the coaches read the content aloud, that does not mean the readers are able to comprehend what the coaches are communicating. Perhaps one way to assist in the reading process is to have a glossary at the end of our book. A glossary defining the more difficult terminology may assist those that are below third grade reading level.

Fortunately, we do not anticipate a drastic change to the content of our book as the content is by its nature very stable and static. Ongoing input resulting from the book's use by a group of instructors will likely reveal suggested enhancements that will further refine the product and make it an increasingly engaging and effective instructional tool.

References

Books

Brown, A. & Green, T. D. (2006). *The essentials of instructional design: Connecting fundamental principles with process and practice*. Upper Saddle River, NJ: Pearson

Kendall, A. (1994). *The Chronicle of Classical Music*. New York, NY: Thames and Hudson

Articles

Marzano Research Laboratory. 2009. Marzano Research Laboratory. 2009. < <http://www.marzanoresearch.com>>.

Web Tools

[Survey Monkey](http://surveymonkey.com) surveymonkey.com

[Luna Pic](http://lunapic.com) lunapic.com

Content Experts

Dr. Scott Herring, Associate Professor of Percussion, University of South Carolina School of Music

Jeff Francis, Recording Engineer, University of South Carolina School of Music

Audio Sources

University of South Carolina School of Music recitals and All-State etude excerpts (*used with permission*)

Individual recordings with members of the South Carolina Philharmonic (*used with permission*)

Recording engineer: Jeff Francis

Image Links

[Come Music](http://comemusic.com/) <http://comemusic.com/>

[Drum Bum](http://store.drumbum.com/index.html) <http://store.drumbum.com/index.html>

[E-MU Systems](http://www.emu.com/) <http://www.emu.com/>

[Gwinnett Philharmonic](http://www.gwinnettphilharmonic.org/) <http://www.gwinnettphilharmonic.org/>

[Lone Star Percussion](http://www.lonestarpercussion.com/) <http://www.lonestarpercussion.com/>

[Mayfair Recordings](http://www.mayfairrecordings.com/) <http://www.mayfairrecordings.com/>

[MTI Research Centre](http://www.mti.dmu.ac.uk/~ahugill/manual/intro.html) <http://www.mti.dmu.ac.uk/~ahugill/manual/intro.html>

[Music with Ease](http://www.musicwithease.com/) <http://www.musicwithease.com/>

[Musicked](http://www.musicked.com/) <http://www.musicked.com/>

[Percussion Music](http://www.percussionmusic.us/) <http://www.percussionmusic.us/>

[Premier Percussion](http://www.premier-percussion.com/index.asp) <http://www.premier-percussion.com/index.asp>

[Probert Encyclopaedia](http://www.probertencyclopedia.com) <http://www.probertencyclopedia.com>

[South Carolina Philharmonic](http://www.scpilharmonic.com/) <http://www.scpilharmonic.com/>

[Trevor Jones Brass and Woodwind Instruments](http://www.trevorjonesltd.co.uk/index.htm) <http://www.trevorjonesltd.co.uk/index.htm>

Other Additional Comments and Materials

Consider how the book will fit into the events of instruction.

The Arts Team book "Instruments of the Orchestra" primarily operates within Step 4 of Gagne's Events of Instruction. Its intended function is to present content about the orchestral instruments, their names, what they sound like, what they look like, and the section of the orchestra that they are within in preparation for an upcoming class field trip.

To a lesser extent, the "Coaches" characters within the book may also serve to provide learning guidance by asking prompting questions (Step 5) and stimulate some recall of prior learning (Step 3) as the class had some previous exposure to the content through a text-base instructional module that did not

achieve the instructional goal of preparing the students for the trip, although by design no reference is made within this interactive text to this earlier study of the material. Similarly, to a limited degree, it also elicits some performance through prompting questions (Step 6), although within the text there is no structured performance or practice function.

3. Stimulate recall of prior learning	Retrieval and activation of short-term memory
4. Present the content	Selective perception of content
5. Provide "learning guidance"	Semantic encoding for storage long-term memory
6. Elicit performance (practice)	Responds to questions to enhance encoding and

(Chart text source: http://www.e-learningguru.com/articles/art3_3.htm)

Consider what you, individually and as a group, are learning as you are developing the book.

Things that we have learned as a group:

It is incredibly helpful to have a true subject matter expert within the team; that locating good-quality, consistently formatted images requires considerable effort; how to use the interface for the Bookbuilder site; how to collaborate online using various tools.

Things we learned individually:

Dawn: I learned more about our topic than I knew previously, particularly thanks to the "Coaches" within the text. I was honestly surprised that the group process worked as well as it did given that the group members had essentially no contact with each other outside of Blackboard. I credit that to the collective professionalism of our team! I was completely unaware of BookBuilder's existence prior to this and if ever in a setting where this could be used, it is an amazing resource to be a free one.

Jen: I learned how to communicate as a group in the on-line format. I was a little nervous how the communication element would work. Communicating on-line as a group could be considered a challenge. I also learned how having specific roles within the team can benefit the entire instructional design process. I feel like this was the first time I participated in a group project. I have participated in group projects before, but never one that everyone had a role and fulfilled their role. Most importantly, I learned how the instructional design process is used and applied to real-life scenarios. Although our scenario was not completely real, it could very well have been.

Jeff: I learned to communicate and collaborate online in a group setting. I was thankful that each member of our team was consistent and committed - each person tackled their assigned role and supported the others with feedback and assistance. I wish all group projects could go this smoothly! I was exposed to a host of new online tools, such as Bookbuilder, SurveyMonkey, GoogleDocs, and Screencast. I also was able to see the ISD process put to work in a 'real-world' situation. We followed the process from a clearly defined goal thru to evaluation and have a final product that we can be proud of.

Apryl: While I listen to classical music every day because of my job and am familiar with legendary composers and famous pieces of music; I learned a great deal about the instruments of the orchestra. This knowledge will help me the next time we are doing an interview with a musician in our studio. Working in a group is something else that I will utilize at work. I think that working on projects as a team instead of individually will increase morale and drive co-workers to do their best since they will not want to let members of their team down. I also learned how to communicate as group online, another possibility I would like to explore at work. While this was not the first online group that I've been in, I consider it the most significant. I have to admit that I was very apprehensive about this project since I am not a teacher and have never worked on anything like this before. I wondered what I could possibly bring to the table with people that have years of teaching experience. While being the graphic designer was not my first choice, I think it was the best fit for me because I felt that I contributed more in that position than I could in other ways. During the process I learned how difficult graphic design can be. I have a new appreciation of how much time it takes to make something visually appealing. I also learned what a cool little tool Bookbuilder is. Of course I learned about the many steps and modifications in the Instructional Design process. Overall I would have to say the most important thing that I learned was it's okay if I don't know the answers up front, I'll learn along the way; which is a lesson that I can not only apply to the rest of my journey as an EDET major, but also as I begin to consider a teaching career.

The relationship between analysis and evaluation in the instructional design process:

There is a multi-faceted relationship between analysis and evaluation as they relate to the instructional design process. First and probably foremost, the analyses that are conducted at the outset of the instructional design process, such as needs analysis and learner analysis, generate the data on which the entirety of the design process is built. In *The Essentials of Instructional Design*, Brown and Green state that needs analyses, while conducted differently, "share the goal of providing an instructional designer with data that help inform and influence the design and development of an effective and efficient solution"—a solution that will subsequently be evaluated as to the degree of its effectiveness and efficiency. A second aspect of the relationship between analysis and evaluation, as Brown and Green note, is that good practice "is to use formative evaluation activities

throughout the needs analysis process" rather than relying solely on the end-result intervention evaluation to determine, much later on, if the results of the instructional event, product, or process produced the intended results and if in turn, the needs presented by the situation and the learners were correctly identified during the analysis phase.

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