# **Instructional Design Project:** Citing Sources Correctly Using APA Style

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## Reflection Paper

Upon starting this course, my idea of what instructional design was equated to the lesson planning that I had done for the classes that I taught. Upon completing this course, I've come to realize that job of an instructional designer is quite a bit different that I had thought.

Designing instruction for others to deliver is like designing the next great video game. The role of the instructional designer is more complex and involves a great deal more analysis than the typical classroom teacher. Each step has to be mapped and planned just like in game design. Every possible scenario has to be anticipated and contingencies have to be created to handle those scenarios. Video game designers go through this process as well. The instructional designer has to test his instruction in multiple phases just as a game designer has to develop a game, then alpha test it, and then beta test it before it can be finalized and released. Instructional designers perform a complex function and put a great deal of effort, thought, and time into a course or piece of instruction.

Over the course of this semester, my opinions have changed, as have my pre-conceived notions. I realized that I had no idea what instructional design was or how much effort and work went into creating a piece of instruction. There are many steps that take place before a single document or instructional activity is created. There are many theories that designers utilize and incorporate into their finished product. For example, this ID project required a needs analysis. This analysis is something that I never thought that I would do. It was something that I internalized and because of that internalization, I was not always accurate in determining the need for some instruction. The evaluation of the instruction before it is even used is another aspect that I had not thought to use in a formal fashion. I've use colleagues in an informal fashion before to bounce ideas off of or evaluate my created assignments, but never to the extent that is required by sound instructional design theory and practice.

Currently, I work in the training department for a company that employs a great deal of staff that works from home. These staff members have to be trained from home as well. Curriculum and instruction is constantly being created and altered / improved upon to better serve these remote agents. I hope to move up in this department so that I can begin creating curriculum as needed rather than being in the lower areas and merely delivering other's curriculum.

I've learned a great deal of information and theories that pertain to education, training, instructional design and other technological perspectives related to education. I hope to use this newly gained knowledge and expertise in my current position and beyond.

## Part 1. Topic

#### 1a. Goal Statements

- 1. Given selected books, magazines, and other sources (including non-print sources), the learner will be able to correctly and accurately create in-text citations and bibliographical entries conforming to APA style.
- 2. Given selected books, magazines, and other sources (including non-print sources), the learner will be able to correctly and accurately create bibliographical entries conforming to APA style.

## 1b. Audience Description

The adolescent learners are at various grade levels in high school. They come from various educational, socioeconomic, and cultural backgrounds. They have varying skill levels and motivational levels. The high school sits in a small rural town that centers largely on agriculture. As such, students have less motivation when it comes to academic matters and need to see a connection with what they are learning and the real world outside of high school.

#### 1c. Rationale

Plagiarism is a serious offense. High school students unwittingly commit plagiarism every year when they write papers for history, English, science, and other classes. Students don't know what citation is. They don't know when it is required to cite their sources. They don't know why it is important to cite source material. Students, also, do not realize what a problem plagiarism is.

The overall strategy used in this lesson will be supplantive. The students do not have enough prior knowledge, motivation, or experience with the subject matter or the methodology behind citation to use a generative approach. Much of the information must be presented to the student and a fair amount of scaffolding has to be in place for the student to succeed. In order to accomplish the goals intended and use a generative approach, a considerable amount of time would be required.

The primary instructional strategy would be concept learning. At first it might seem like procedural learning because the students are learning about a procedure with rules and then learning how to apply that procedure to information gained from source material. However, the true goal of this unit is for students to understand the concept of citation and to be able to recognize situations when citation is necessary and required. Thus, the instructional activities and strategies will be aimed at that goal. The students should be able to come away from this with the ability to recognize when citation is required, why it is important, where the available tools and resources are and how to apply the rules found in those tools and resources to properly cite source material in text and in a bibliography.

## Part 2 Analysis Report

## 2a. Description of Need

## 2a1. Needs Analysis Survey

The following survey was created using Google Docs and presented to target learners at the following URL: <a href="http://edtech.cominotti.net/503/need.php">http://edtech.cominotti.net/503/need.php</a>.

Thank you for taking the time to complete this survey. Please answer honestly and as accurately as possible. This is a pre-unit assessment and you are not expected to know everything. This is merely a means for me to understand what you do know and do not.

This is completely anonymous and your answers will not be shared with anyone.

#### **Basic Information**

- Please indicate your gender:
   M / F
- 4. Please indicate your grade: **9 / 10 / 11 / 12**
- 5. On average, what grade do you usually earn from an English class? A / B / C / D / F
- 6. How comfortable are you when you have to complete an assignment that includes research and writing a paper based upon that research?

Very Comfortable / Comfortable / Don't Care / Uncomfortable / Very Uncomfortable

7. How comfortable are you when you are required to cite your sources and research? Very Comfortable / Comfortable / Don't Care / Uncomfortable / Very Uncomfortable

#### **Self-Assessment**

Please answer the following questions in the following way: 1 – Strongly Disagree, 2 – Disagree, 3 – Neutral, 4 – Agree, 5 – Strongly Agree

- 1. I understand what in text citation is.
- 2. I understand when I must cite source material.
- 3. I understand why it is important to cite source material.
- 4. I understand which information is important to gather and provide when citing source material.
- 5. I understand how to construct a correct bibliographical entry for a paper formatted in APA style.

### **Pre-unit Knowledge Assessment**

Please examine the following sentences and bibliographical entries. Answer the question(s) about the entry.

- 1. According to one patriot, "every American has the right to vote" (Smith, 2000).
  - Is this sentence **Correct / Incorrect** according to APA style? If it is incorrect, then why?
- 2. Nine out of 10 Americans pay over \$1600 per year in credit card interest. That's over \$100 per month.
  - Is this sentence **Correct / Incorrect** according to APA style? If it is incorrect, then why?
- 3. Tom Watkins states in his recent New York Times article, "Americans need to be saved from themselves" (Watkins, 2011).
  - Is this sentence **Correct / Incorrect** according to APA style? If it is incorrect, then why?
- 4. For the source material,
  - "All people are required to vote" quoted from an article by John Carl Wilson which of the following sentences is correct according to APA style?
    - John Carl Wilson said that all people are required to vote.
    - According to Wilson (2006), all people are required to vote.

Wilson (2006) says that everyone has to vote.

Wilson claims, "All people are required to vote".

5. The following sentence is correctly written and the source is correctly cited according to APA style.

Jones and Smith (2009) found, "over half of currently enrolled college students attend campus parties".

Which of the following sentences is another way to write the sentence correctly according to APA style?

Many students at college attend parties (Jones and Smith).

Jones and Smith's study showed, "over half of currently enrolled college students attend campus parties".

A study showed, "over half of currently enrolled college students attend campus parties" (Jones and Smith, 2009).

All are correct according to APA style.

#### True or False

- 1. I only have to cite information that comes from a book or other printed material. T / F
- 2. Citing information correctly lends credibility to my own writing. T / F
- 3. Citing information gives credit to whomever wrote or produced your source material, T / F
- 4. It's okay to not cite something if I can't remember where I found it at. T / F
- 5. Citing is only used to prove that I researched a topic. It really doesn't matter outside of the classroom. T / F

## For the following two bibliographical entries, determine what is incorrect and briefly explain how to fix it.

Russians. (1998). In T. L. Gall (Ed.), Worldmark encyclopedia of cultures and daily life (Vol. 4, pp. 332-339).

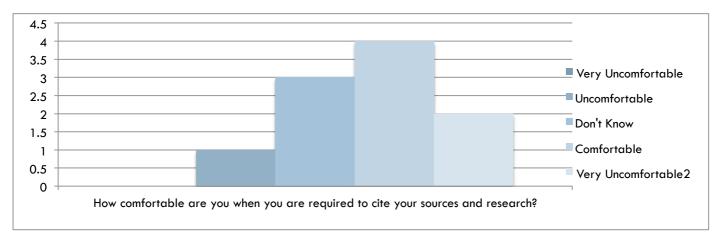
Outbreak news. *Weekly Epidemiological Record*, *76*, 57-64. Retrieved February 28, 2001 from http://www.who.int/wer/pdf/2001/wer7608.pdf

#### 2a2. Data

All data, in graph format, can be found at <a href="http://edtech.cominotti.net/503/pdf/needsdataresults.pdf">http://edtech.cominotti.net/503/pdf/needsdataresults.pdf</a>

#### Demographics, Basic Information, and Self-Assessment

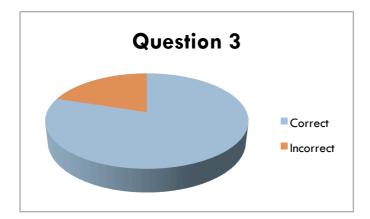
10 students ranging from 10<sup>th</sup> grade to 12<sup>th</sup> grade completed the needs analysis survey. Demographically speaking, there were an equal number of males to females and with eight out of 10 participants, were predominantly seniors. The majority (60%) of students reported that they were Astudents in their English classes. Most students did feel comfortable writing research based papers and with citing their source material. In both cases 60% of the students reported comfortable or very comfortable self-assessment.



70% of the students seemed comfortable in their understanding of what in-text citation was while 3 didn't know or were not comfortable with it. 7 of the 10 students claimed to be comfortable with their understanding of when to cite while the other 3 didn't know. All students reported comfort with understanding why citation is important. Similarly, all but one student reported comfort with knowing what information to gather when reading a source that they will be using in their paper. 4 of the 10 reported strong disagreement with the statement "I understand how to construct a correct bibliographical entry for a paper formatted in APA style" while another 4 felt comfortable with it and 2 did not know.

#### **Pre-Instructional Knowledge Assessment**

The first three questions asked the students to determine if the given sentences that contained in-text citations were correct or incorrect. These questions also asked the students to give a brief explanation as to why they would deem it incorrect if that was their determination. None of these three questions yielded a 100% correct rating. While the majority of students did correctly determine that question two was incorrect, none of them could adequately explain why it was incorrect. None of them even came close. Questions 1 and 3 were less encouraging. The majority of the students reported the incorrect determination of these two sentences.



Tom Watkins states in his recent New York Times article, "Americans need to be saved from themselves" (Watkins, 2011).

The next two questions were multiple choice and presented the students with some information that would be quoted or paraphrased. The questions asked the student to pick out the correct sentence out of four choices. Only 2 students reported a correct answer for the first question and only half reported correctly for the second question.

The next five true / false questions still did not have a single question in which all students reported a correct answer. Even though not all students reported correctly, 80-90% did report correctly on all five questions, which is promising. These questions tested students' knowledge of the importance of citation and if they know when they were required to cite. It's promising to note that most students in high school already have this underlying concept and it this lesson should build upon it.

The remaining two questions test the students' abilities to put it all together in a bibliographic citation. They were open ended questions that required the student to correctly identify what are of a bibliographic citation was incorrect. None of the students were able to correctly identify the incorrect portions of the entries. I did not expect any to be able to do this. The reason that I included these questions was to form a good baseline reading of the students' abilities to recognize and look up information so that it could be compared at the beginning with formative and summative assessment tools during the lesson.

## 2b. Description of Learning Context

## 2b1. Learning Context

The learning environment for my ID project is the traditional brick and mortar classroom. It consists of a teacher that is competent and knowledgeable in his content area (English) and that the students have a decent rapport with. The students would be typical high school English students ranging from grades 9-12. The classroom and facilities will include and projector / screen or interactive whiteboard as well as computers for student use either in the classroom of in a computer lab. The instruction will be delivered via electronic presentations and class discussions as well as various short interactive modules on the computer. The lessons can be delivered in the computer lab as well as the classroom.

#### 2b2. Transfer Context

Students will use this information in their subsequent high school classes as well as their college classes and possibly beyond. Knowing when to cite sources, the need to cite sources, and how to find the information to cite them correctly will save many headaches as students further their education. They will use this knowledge and these skills in many different types of classes throughout their educational career like science, history, English, psychology, sociology, computer science, and other classes. The uses are endless. Students might also go on beyond college and use these skills in their chosen career. Plagiarism is a major issue on college campuses and in the workplace. Having these skills in place now will help students avoid issues in the future.

## 2c. Description of Learners

The students come from a rural community and rage from affluent to low-income farm families. The agricultural nature of the school district poses a bit of a motivation problem. The students don't see as much value in high school as you might expect in a more affluent urban setting. The students are more difficult to motivate when they cannot connect in-class activities and content to real-life situations outside of school. This type of unit will be difficult to teach since the desired outcome skills do not have an immediate outside connection with the students. Many of these students do not understand the need to cite sources in their writing or how to do it properly as the data from the needs analysis suggests. None of the ten respondents to the survey completed the survey with 100% accuracy. Some of them didn't even have a basic understanding of difference between a citation and a bibliographical entry.

## 2d. Learning Task Analysis

### <u>Information-processing analysis for creating in-text citations (Learning Goal 1)</u>

- 1. Determine the type of text that needs citation.
- 2. Determine the most appropriate way of introducing the text into a sentence.
- 3. Determine the most appropriate way of citing the text based upon the text and the method of introduction.
- 4. Write a signal phrase to introduce the text.
  - 1. This signal phrase might or might not include the citation.
- 5. Insert text to cite.
- 6. Finish writing sentence.
- 7. If text was not cited within the sentence, create a parenthetical citation at the end of the sentence.
- 8. Proofread sentence looking for correct grammar, spelling, and punctuation.

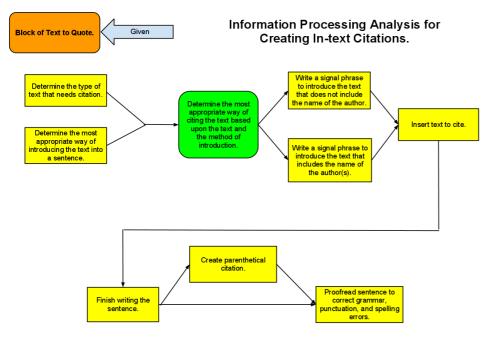
#### **Prerequisite Analysis (Goal 1)**

#### 1. Determine the type of text that needs citation.

- a. Learner needs to know the difference between direct quotes, paraphrases, and block quotes.
- 2. Determine the most appropriate way of introducing the text into a sentence.
  - a. The learner needs to know the methods of introducing a quotation.
    - i. Introductory Signal Phrase.
    - ii. As part of the sentence.

- b. The learner must know the rules of the APA style for introducing the author within the text.
- 3. Determine the most appropriate way of citing the text based upon the text and the method of introduction.
  - a. The learner must know how to punctuate the different types of introduction methods.
- 4. Write a signal phrase to introduce the text.
  - a. The learner must know how to write a sentence.
  - b. The learner must know how to punctuate a sentence.
- 5. Insert text to cite.
  - a. The learner must know how to punctuate direct quotations, paraphrased quotations, and block quotations.
- 6. Finish writing sentence.
  - a. The learner must know how to write a complete, correct sentence.
- 7. If text was not cited within the sentence, create a parenthetical citation at the end of the sentence.
  - a. The learner must know the difference between introducing an author in the sentence as opposed to a parenthetical citation.
  - b. The learner must know how to punctuate a parenthetical citation.
  - c. The learner must know what information to include in an in-text citation or parenthetical citation.
  - d. The learner must know the rules of APA style for parenthetical citations.
- 8. Proofread sentence looking for correct grammar, spelling, and punctuation.
  - a. The learner must know the rules of grammar.
  - b. The learner must know how to spell.
  - c. The Learner must know how to punctuate a sentence.

#### Information-processing analysis flowchart (Goal 1)



Fabio Cominotti - EDTECH 503

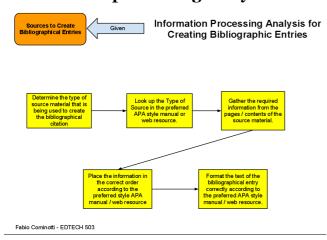
## <u>Information-processing analysis for creating bibliographic entries using APA Style (Learning Goal 2)</u>

- 1. Determine the type of source material that is being used to create the bibliographical citation.
- 2. Look up the type of source in the preferred APA style manual or web resource.
- 3. Gather the required information from the pages / contents of the source material.
- 4. Place the information in the correct order according to the style APA manual / web resource.
- 5. Format the text of the bibliographical entry correctly according to the style APA manual / web resource.

#### Prerequisite Analysis (Goal 2)

- Determine the type of source material that is being used to create the bibliographical citation.
  - a. The learner needs to know how to determine the difference between print and non-print sources as well as the different types of print and non-print sources.
- 2. Look up the type of source in the APA style manual or web resource of your choice.
  - a. The learner needs to know which APA style manual or web resource is preferred.
  - b. The learner needs to know how to look information up in the style manual / web resource.
  - c. The learner needs to know how to interpret the instructions in the style manual / web resource.
- 3. Gather the required information from the pages / contents of the source material.
  - a. The learner needs to know where to find the needed information in the source material.
- 4. Place the information in the correct order according to the style APA manual / web resource.
  - a. The learner needs to know how to use a word processor.
  - b. The learner needs to know how to read the style manual / web resource and be able to interpret bibliographical examples in the style manual / web resource.
- 5. Format the text of the bibliographical entry correctly according to the style APA manual / web resource.
  - a. The learner needs to know how to interpret the examples in the style manual / web resource
  - b. The learner needs to know how to apply the proper formats using a word processor.

#### Information-processing analysis flowchart (Goal 2)



## Part 3. Planning

## 3a. Learning Objectives

- 1.1 Given appropriate blocks of text to cite (i.e. direct quotes, paraphrase, block quotes) and the source of the text, the learner will be able to create grammatically correct sentences that cite the blocks of text appropriately according to APA style in 90% of the examples.
- 1.2 Given a one-page essay in which none of the quotations are cited, the learner will be able correctly identify and create an in-text citation for 90% of the quotations.
- 1.3 Given a list of incorrectly formatted parenthetical citations, the learner will be able to identify why the citation is incorrect and create correct citations for at least 90% of them.
- 1.4 Given examples of direct quotations, the learner will be able to correctly format 90% of the selections in a sentence.
- 1.5 Given examples of sentences that include citations either introduced in-text or parenthetically, the learner will be able to change the sentence from one form to the other correctly in 90% of the examples given.
- 1.6 The leaner will be able to explain in a written paragraph what types of information have to be cited and when it has to be cited.
- 2.1 Given various examples of bibliographical entries that are incorrectly formatted, learners will identify and create correct bibliographical entries for 90% of the incorrect entries.
- 2.2 Given a selection of books, magazines, and other print sources, the learner will be able to create correct bibliographical entries for 90% of the given sources.
- 2.3 Given a selection of websites, online journals, and other non-print sources, the learner will be able to create correct bibliographical entries for 90% of the given sources.
- 2.4 Given bibliographical entries that have missing information, the learner must correctly identify what item(s) are missing in 90% of the lists.

## 3b. Matrix of Objectives, Bloom's Taxonomy, and Assessments

Learning Objectives	Bloom's Taxonomy Classification	Format of Assessment	Description of Test Form	Sample Items
1.1	Synthesis	Pencil-and- Paper	Constructed Response	Write a sentence that includes the text below quoted in the format indicated and cited correctly either parenthetically or in-text according to APA style.

			<u> </u>	
1,2	Comprehension, Synthesis	Performance	Simulation	In the following essay, identify the text that needs to be cited and rewrite the sentence to include a correct citation according to APA style.
1.3	Comprehension, Synthesis	Pencil-and- Paper	Constructed Response	Identify the incorrectly cited material and correct it according to APA style.
1.4	Application	Pencil-and- Paper	Constructed Response	Write a sentence that includes the following quotations and correctly cite the quotations in that sentence according to APA style (one sentence for each quotation).
1.5	Analysis, Synthesis	Performance	Simulation	The following sentences contain quotations cited either in-text or parenthetically. For each sentence, rewrite the sentence changing the way that the quotation is cited (either in-text to parenthetical or the other way around). The sentence must be correctly formatted according to APA style.
1.6	1.6 Comprehension		Essay	In a well-constructed paragraph, explain what types of information have to be cited and when they are required to be cited.
2.1	Comprehension, Synthesis		Constructed Response	Identify what is incorrect about the following bibliographical entries and rewrite them correctly according to APA style.
2.2	Synthesis	Pencil-and- Paper	Constructed Response	Create bibliographical entries for the following sources according to APA style.

2.3	Synthesis	Pencil-and- Paper	Constructed Response	Create bibliographical entries for the following sources according to APA style.
2.4	Comprehension	Pencil-and- Paper	Short Answer	Identify the type of missing information (according to APA style) from the following bibliographical entries.

## 3c. ARCS Motivational Strategies Plan

#### **ATTENTION**

#### A.1 Perceptual Arousal

>**Specific Examples:** Tell a story about a student who had their writing plagiarized. The story (doesn't need to be true, just believable) should have a main character that the students can sympathize with. The story is completely up to you

#### **A2.** Inquiry Arousal

> **Inquiry:** Have a discussion to brainstorm ways to avoid plagiarizing before citation is ever talked about. Encourage the students to be creative and use **Incongruity and Conflict** by playing devil's advocate to what they propose.

#### A3. Variability

> **Humor.** Use humor in your story and during the discussion mentioned above. Also, vary your materials. Use some videos, text, and even audio as well as some interactive and group strategies.

#### **RELEVANCE**

#### R1. Goal orientation

>**Future Usefulness.** Relate a story about a college student who inadvertently plagiarized a portion of his paper because he failed to cite his sources and show the consequences of that. Consequences might include a bad grade, seeming un-credible, disciplinary action, or expulsion. Talk about how simple the process is and how important it is.

#### **R2.** Motive matching

>Future Usefulness. Explain that in college and beyond, citing sources is not only important, but also required by college classes and employers. Show some examples of text that make elaborate claims. Take the source citations out and let the students read them. Ask them to talk about how credible each article sounds and why. Then show them the same article with the source citations so that they can see how much of a difference they make.

#### R3. Familiarity

> **Experience.** Relate to past classes in which they had to list their sources. You might need to do a little research here in order to find out what past classes required of the students as far as listing sources. Talk about how this is just an extension of what they have already done.

#### **CONFIDENCE**

#### C1. Learning requirements

>Provide Objectives and Prerequisites. Provide the objectives to the students in the beginning. Go over them and elaborate on what they mean. Also talk about what skills the students should possess that they will need to be successful in this unit. Express your desire to help them and if they are unsure or nervous then make it clear that you are there to talk with them.

#### C2. Success opportunities

>Grow the Learners. Provide many small forms of assessment in which the students can see immediate success. Use these formative assessments as a means to revisit areas that the majority of students struggle with. Differentiate the areas and students that need it. Constant opportunities for success motivate students because they feel confident in their abilities and the feeling of success is a good one.

#### C3. Personal control

>**Learner Control**. Allow learners to complete parts of the project at their own pace as well as complete the formative assessments when they feel that they are ready. Attempt to keep them on schedule, but don't be too aggressive either. Offer to help them rather than ask them when they will complete a segment or assessment.

#### **SATISFACTION**

#### S1. Natural consequences

>This unit might be used in conjunction with a research / persuasive unit (writing or speech) in which students must complete a research portion using their newfound abilities with source citation.

#### S2. Positive consequences

>Obviously, students are motivated by grades. Completion will earn a grade and hard work will earn a high grade. Additionally, small extrinsic rewards could be introduced for completing certain aspects of this project. Praise is also effective. Ideally a student should respect their teacher and pleasing their teacher should make them feel intelligent and good.

#### S3. Equity

>Stay with your rubrics and previously taught means of evaluation. Don't change criteria midway through and be clear and specific about the criteria from the beginning. Point out how

students met each of the criteria and use examples from their work.
Keller, J. M. (1987). The systematic process of motivational design. <i>Performance &amp; Instruction</i> , 26 (9/10), 1-

## Part 4. Instructor Guide

This guide was written with the thought of a traditional classroom.

#### Introduction

#### **Active Attention or Gain Attention**

Tell a story that describes a student similar in circumstance to the students. This story should involve a main character that is sympathetic to your learners. It should also include in the plot, plagiarism of the main character's work and how it made the main character feel. It should also, for the antagonist or plagiarizer, show the consequences (i.e. lack of credibility, disciplinary action, etc.) Be creative and use humor. Humor is your best friend.

#### **Establish Purpose or Inform Learners of Purpose**

Talk about the importance of avoiding plagiarism and why it is important to avoid plagiarism (i.e. credibility, legal issues, ethical issues, and so on).

#### Arouse Interest and Motivation or Stimulate Learners' Attention/Motivation

Conduct a discussion. Using small groups, have each group come up with anywhere from three to five methods to avoid having their work plagiarized. Combine back into the class and discuss these methods.

Next, have the groups reconvene to discuss ways to avoid plagiarizing work in their own writing. Again, come up with three to five methods and reconvene as a class to discuss the methods. Do not mention citing sources or the APA style or anything relating to bibliographies yet. Try and engage the students thinking processes. Let them make decisions and defend those decisions in a group / class discussion.

#### **Preview the Learning Activity or Provide Overview**

Provide an overview of the unit. It's now okay to talk about APA, bibliographies, and in-text citations. Provide the objectives, pre-requisite skills, and a means to contact / discuss with you any concerns. Provide the students with either a paper or electronic copy of these materials so that they can refer back throughout the project.

#### **Body**

#### Recall relevant prior knowledge or Stimulate recall of prior knowledge

Discuss what has happened in previous classes in school when students were required to report or list their resources when writing a paper for history, other English classes, etc. Gauge the student's level of comfort trough this discussion and possibly have them complete a pre-assessment. You might even speak with other instructors and determine what experience these students might have had in the past. Show students that they already do some of the tasks required and that they will just be taking things a step furfur.

#### Process information and examples or Present information and examples

Here, you should show the students examples of work in which the citations have been removed. Ask the students to read several articles and gauge how credible the author sounds. They should do this in a written paragraph and explain why they make the determination that they do. After students evaluate the articles, hold a class discussion and discuss each article. Get a class consensus and then provide students with the articles again but for this round the citations have not been removed. Ask them to explain how the citations might influence their determination as far as the author's credibility.

#### **Focus Attention or Gain & Direct Attention**

Have the students perform a small activity in which they are required to find articles on-line or in magazines. The articles should be specific and you should provide to the students the information for the article, however you should not include all the relevant information. Let the students get a little frustrated, but not too much. Call their attention back to you and give them the rest of the information and ask them to reflect briefly on this experience. Talk about their frustration as they attempted to find articles with missing information. Talk about the importance of gathering all of the appropriate information.

#### **Employ Learning Strategies or Guide or Prompt Use of Learning Strategies**

Talk about some strategies for gathering information and keeping it organized. There are web tools and tools built right into Microsoft Word.

At this point, APA style should be brought into the discussion. Explain what APA style is and why it is used as opposed to MLA style. This is also a great tie-in to in-text citations. You should begin to

emphasize the need to cite sources in the text. Refer back to the articles without the citations and remind students how un-credible the author sounded without the citations.

Complete the APA jigsaw activity. The students should partner up and complete their portion of the activity. Each duo then should group with other duos that were assigned the same portion of the activity to create a coherent overview of their section to be presented to the class. Each of the three groups will present their information to the class in an informative manner. This allows students to focus in one area and then teach each other so that all students can become familiar with the whole process.

#### **Practice or Provide for and Guide Practice**

Provide the students with the practice packet that has a number of activities to complete. The activities include individual assignments, partner activities, and small group activities. They should be completed at the student's pace. These activities are going to be similar in nature to the assessment items. Instructions are provided. You should monitor the students and provide assistance where needed and when asked for.

#### **Evaluate Feedback or Provide Feedback**

Before the final assessment and conclusion, you should conference with each student and address any areas that might be lacking. These areas can student or teacher identified. Provide praise and constructive criticism / feedback. Take this opportunity to reteach or reiterate areas that are severely lacking. Point the student in the correct direction for resources to help them.

#### Conclusion

#### Summarize and review or Provide summary and review

Review the procedures, reasons, and importance of citing sources. Review the commonly gathered information for bibliographic entries. Review what APA style is and why it is used. Review the methods for citing in-text. Review the methods for constructing bibliographic entries. Use small games and other methods for review. Handouts work well too since students can take them home.

#### Transfer learning or Enhance transfer

Review when students will use this in the future. Talk about its importance again.

#### Remotivate and Close or Provide Remediation and Closure

Identify and reteach individual or as a class, concepts that seem to be difficult for individual or the class.

#### **Assess Learning or Conduct Assessment Evaluate**

Conduct paper and pencil as well as performance assessment.

#### Feedback and Seek Remediation or Provide Feedback and Remediation

Evaluate the assessment. Return the evaluated assessment and provide comments and feedback in writing and conference with students individually to provide feedback, remediate, reteach, or praise.

## Part 5. Learner Content

## 5a. Learning materials

The initial story that is used for the attention getter is something that should be created / found / pulled from personal experience by the instructor who is facilitating the instruction. If the story is created it might be beneficial to use names and places that your students are familiar with. This helps them visualize and makes it more real for them. This story should hold the student's attention. It should include some humor and a believable character. If the story seems too cheesy or non-believable then the student's wont buy-in to the consequences and interest and motivation will wane.

Articles that have had citations removed from them are again going to be up to the facilitator to produce. These articles should be of student interest and as each student and class of students differs sometimes drastically, it would be pointless to provide articles here. The articles have to keep and hold the student's attention. It might be beneficial to use articles that deliberately stir up the students because they do not agree with the particular philosophy or study being presented. Whatever articles that might be included should have all relevant citations removed and then printed for students to read.

#### The APA Jigsaw Activity.

This activity is designed to get students working together to come up with their own definitions and rules concerning APA style. It also gives them some ownership since they have to turn around and reteach what they have collected and synthesized to their peers.

#### The activity

This activity was designed to assist you in learning the in's and out's of formatting and citing research sources according to the American Psychiatric Association (APA) style guide.

You will split into partnerships. Each group will then be assigned one of three areas for research.

When conducting your research, keep in mind that you need to understand the concepts and information needed to accomplish the citation. You will have a decent amount of time to prepare and research. After the initial research, your partner and you will draw up a list of important information. You will then meet with the other groups that researched the same area and decide what is important and come up with a mini-lesson to teach to the rest of the class that covers your area.

Each group will research the proper methods and styles according to the American Psychiatric Association (APA). The websites listed below are starting points. You can do your own research

Below are the groups, areas of study, and website resources. Do some thorough research that includes as much information as possible and organize it so that it is clear to your classmates when you present it. You are responsible for teaching your classmates what they need to know about your area of study just as they are responsible for teaching you their content. Please keep this in mind.

Area Number	Area of Content	Resources
Area #1	Formatting, Layout, and End Notes	Vangaurd University <a href="http://psychology.vanguard.edu/faculty/douglas-degelman/apa-style/">http://psychology.vanguard.edu/faculty/douglas-degelman/apa-style/</a>
	Elia Notes	Hacker Handbooks Resource Page
		http://bcs.bedfordstmartins.com/resdoc5e/RES5e_ch09_s1-0008.html
		Monmouth University Writing Center
		<pre>http://www.monmouth.edu/writing_center/pdf/APAFootnotesEndnotes. pdf</pre>
Area #2	In-Text	
Area #Z	Citations	The OWL at Purdue University <a href="http://owl.english.purdue.edu/owl/resource/560/02/">http://owl.english.purdue.edu/owl/resource/560/02/</a>
		Penn University Libraries <a href="http://gethelp.library.upenn.edu/PORT/documentation/APAintext.html">http://gethelp.library.upenn.edu/PORT/documentation/APAintext.html</a>
		Cornell University Library
		http://www.library.cornell.edu/resrch/citmanage/apa
Area #3	References	Cal State LA http://www.calstatela.edu/library/guides/3apa.pdf
	Page	University of Wisconsin Parkside
		http://www.uwp.edu/departments/library/guides/apa.htm
		ScienceBuddies.org <a href="http://www.sciencebuddies.org/science-fair-projects/project_apa_format_examples.shtml">http://www.sciencebuddies.org/science-fair-projects/project_apa_format_examples.shtml</a>

#### The Practice Packet

The practice packet should consist of practice paragraphs, in-text citations, and bibliographic entries. The items in the packet should be facilitator selected and or created based upon student dynamics. To keep students interested, the created material could include actual class members in the material and other common elements that those particular students are interested in. These practice items should be similar as to what is on the pre-test and assessment. Their forms and style should be similar

## 5b. Formative and/or Summative Assessment materials

Much of the assessment with this unit will be formative. The instructor should pay close attention to the students as they complete their practice items. This is where the instructor is going to see if students are getting it or if some re-coverage might be needed. Summative assessment should also occur for objectives that the large majority of students have not met yet. This will be at the

instructor's discretion since he will be in the classroom observing and assessing along the way. In either case (formative or summative) the objectives are very clear as to when a student has met the objective. If students are not reaching the 90% mark on each objective during formative assessments then some re-teaching and summative assessment will be necessary.

## 5c. Technology Tool Justification

As far as technology goes, there are some websites that I recommend using in the APA jigsaw activity. There is a wealth of information on the web that can help students out, but not all of it is credible information. The websites that I included were carefully screened and selected for content. With the exception of one site, each of the websites listed above is a university site and often a writing center or library. The single non-university site is a .org site that is devoted to promoting scientific research. That site was placed under more scrutiny than the others and it has reliable information that students can use. The websites used are listed below.

Vangaurd University <a href="http://psychology.vanguard.edu/faculty/douglas-degelman/apa-style/">http://psychology.vanguard.edu/faculty/douglas-degelman/apa-style/</a>

Hacker Handbooks Resource Page

http://bcs.bedfordstmartins.com/resdoc5e/RES5e\_ch09\_s1-0008.html

Monmouth University Writing Center

http://www.monmouth.edu/writing\_center/pdf/APAFootnotesEndnotes.
pdf

The OWL at Purdue University

http://owl.english.purdue.edu/owl/resource/560/02/

Penn University Libraries

http://gethelp.library.upenn.edu/PORT/documentation/APAintext.html

Cornell University Library

http://www.library.cornell.edu/resrch/citmanage/apa

Cal State LA http://www.calstatela.edu/library/guides/3apa.pdf

University of Wisconsin Parkside

http://www.uwp.edu/departments/library/guides/apa.htm

ScienceBuddies.org <a href="http://www.sciencebuddies.org/science-fair-projects/project\_apa\_format\_examples.shtml">http://www.sciencebuddies.org/science-fair-projects/project\_apa\_format\_examples.shtml</a>

## Part 6. Formative Evaluation Plan

## 6a. Expert Review

As far as the subject matter expert is concerned, I originally had planned on asking Robert Selzler to act as my subject matter expert. He is a graduate of the University of Idaho and certified to teach secondary English in the state of Idaho. Unfortunately, Robert is a very busy man as am I and I could not complete my entire project within a reasonable time frame for him to fully evaluate my materials. He has been assisting me throughout the semester but not in any formal capacity. For a final expert review, I have asked my former stepfather, Jay Skeen to review my materials. Mr. Skeen worked as an English teacher at Salmon High School and then Salmon Alternative School for nearly thirty years before retiring in 2009. I will be submitting material to him after Thanksgiving break and would expect a quick turnaround of evaluation.

The questions that I will ask him will include:

Is the estimated time frame of the instruction accurate? Do the instructional activities seem to lead to the objectives? Is the overall focus of the instructional activities geared towards creating a consciousness in the learners that citation is important and a knowledge of when it is necessary instead of on memorizing complex style rules that do not need to be memorized? Can the learning tasks, events, and activities reasonably be expected to teach the students the proper skills to achieve the objectives? Would students be able to transfer their skills from one style to another (i.e. APA to MLA)?

#### 6b. One-to-One Evaluation

For the one-to-one evaluation phase, I would select a few students that I trusted to give an honest effort. I would attempt to select the students on the basis of a wide variety of skill levels to ensure an accurate evaluation. I would deliver the rough draft of the materials to the students via a face-to-face meeting or online via a webpage or possible a LMS. It depends on the final form of the project. I am leaning toward an online delivery since my needs assessment survey was delivered via an online form. I would ask that the students go through the material and take notes and describe what they think they are supposed to do during each phase of the instruction. I would ask that they give me their notes as well as a brief written summary. I would also ask them to answer the following specific questions:

Are the directions and instructions for each section clear? Are there any areas that need clarification? Are there any unclear sentences or phrases? Are there any typographical errors? If you were given this instruction, would you understand the directions?

## 6c. Small Group Evaluation

For the small group evaluation phase, I would make some revisions for clarity, spelling, and grammar. I would revise based upon the data from the one-to-one evaluation. I would select a small group of students to go through the instruction and actually complete a draft of the materials. I would look at what skills they have coming in and what skills they have going out. I would also check to see if the instruction produced the desired outcomes in the selected learners. This is also where I would monitor motivation and attitudes displayed by the students to make sure that my motivational tactics were appropriate. I would be asking specific questions that would include:

Do the majority of my learners have the skills needed to start the instruction? Was the instruction successful? What revision could I make so that the instruction would be more effective?

#### 6d. Field Trial

For a field trial of my instructional materials, I would deliver the materials to students in a real classroom or online environment. My goal here is really to have instruction that is suitable for online as well as a teacher facilitated course. The material would be near its final form and revised from both the one-to-one and small group evaluations. I would be asking very specific questions at this phase. The questions would not be so much aimed at the instruction and goals, but at other things. This is a test run so validity of the instruction is important and if issues arise, they would be revised and corrected. However the questions that I would ask at this phase would be more like:

Is the time frame appropriate? Is the facilitation as expected? Are there any unforeseen issues that arise during the course of delivery and assessment? Do the majority of the students meet the objectives and if they did not, what were the possible reasons and what can I do to revise the instruction so that the students can meet the objectives?

## Part 7. Formative Evaluation Report

## 7a. Evaluation Survey or Rubric

I hosted an online survey via Google Forms to gather information from my subject matter expert for formative evaluation of my project. The shortened URL was <a href="http://bit.ly/v6HIbL">http://bit.ly/v6HIbL</a>. The long URL was <a href="https://docs.google.com/a/u.boisestate.edu/spreadsheet/viewform?formkey=dFdnYjBZRFVZYS1vbFJGbF9ITWUtTlE6MQ#gid=0">https://docs.google.com/a/u.boisestate.edu/spreadsheet/viewform?formkey=dFdnYjBZRFVZYS1vbFJGbF9ITWUtTlE6MQ#gid=0</a>. The questionnaire was presented to my SME as follows:

## Subject Matter Review Questionnaire - Citing Sources using APA Style

Thank you very much for reviewing my instructional design project materials. Please answer the questions below to provide formal feedback and review.

#### \* Required

Name \*

#### Qualification \*

Why did I ask you to review my material?

### Areas of Concern and Review

Below are the areas that I would like your opinion on. I have concerns about the instructional project in these areas.

Is the estimated time frame of the instruction accurate? \*

Do the instructional activities seem to lead to the objectives? \*

Is the overall focus of the instructional activities geared towards creating a consciousness in the learners that citation is important and a knowledge of when it is necessary instead of on memorizing complex style rules that do not need to be memorized? \*

Can the learning tasks, events, and activities reasonably be expected to teach the students the proper skills to achieve the objectives? \*

Would students be able to transfer their skills from one style to another (i.e. APA to MLA)? \*

### Please rate the overall effectiveness of the instructional project. \*

This is your opinion. How well do you think students will learn from this project?

	1	2	3	4	5	
Not at						Very
all						Effectively

Please provide any other comments that you feel would help improve the content of this instructional project.

## 7b. Report the results of the expert review.

Generally speaking the SME showed some concern over accomplishing the objectives in the time allotted. He stated that the given time should be adequate as long as virtually no time was wasted. He expressed some concern as to student's general tendencies to "goof" and be disruptive. He felt that the objectives could be accomplished but was also concerned about some of the slower learners. He suggested to differentiate for those learners. He also showed some concern about student's abilities to transfer these skills of recognizing when to cite to other styles than APA. He suggested having a few more activities toward the end that demonstrated how to switch styles and to point out the similarities in information needed to compose a citation.

The actual	l responses	of my SME	are recorded	below.
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## Subject Matter Review Questionnaire - Citing Sources using APA Style

Thank you very much for reviewing my instructional design project materials. Please answer the questions below to provide formal feedback and review.

\* Required

Name \*

Jay Skeen

#### Qualification \*

Why did I ask you to review my material?

I taught high school English to all different grades for 29 years in Salmon Idaho.

## Areas of Concern and Review

Below are the areas that I would like your opinion on. I have concerns about the instructional project in these areas.

#### Is the estimated time frame of the instruction accurate? \*

Yes. The timing might be kind of tight, but it should be able to completed within the estimated time frame. There is little room for disruption or non-ontask behavior. Good classroom management is required for this to be successful in the time frame planned for.

#### Do the instructional activities seem to lead to the objectives? \*

Yes. By the end of the instruction, most students will be able to look up information and cite their bibliographical sources as well as in-text sources. Slower students might struggle with the pace though. Make use of differentiated instruction.

Is the overall focus of the instructional activities geared towards creating a consciousness in the learners that citation is important and a knowledge of when it is necessary instead of on memorizing complex style rules that do not need to be memorized? \*

Yes. By the end of the instruction, most students will be able to look up information and cite their bibliographical sources as well as in-text sources. Slower students might struggle with the pace though. Make use of differentiated instruction.

Can the learning tasks, events, and activities reasonably be expected to teach the students the proper skills to achieve the objectives? \*

Yes. I'm concerned about the time frame though. Students can be disruptive and uncooperative. You don't leave a lot of room for down time and the normal and expected "goofing" that students will do.

Would students be able to transfer their skills from one style to another (i.e. APA to MLA)? \*

They should. You might have to include some transfer activities in which you model the process for them as to how to lookup and format information in MLA or Chicago as opposed to APA. You could also use these activities to point out the similar types of information that each style calls for and possibly develop a "master" list of info to gather regardless of style.

## Please rate the overall effectiveness of the instructional project. \*

This is your opinion. How well do you think students will learn from this project?

Not at X Very Effectively	

Please provide any other comments that you feel would help improve the content of this instructional project.

Citation is a hard subject to teach. Many students lose interest in it early on. You need to have activities that not only teach but keep them interested. You have some good ideas here but once you lose a student's interest then it is very difficult to get it back.

## 7c. Comments on Change

Generally speaking, I shared some similar concerns with my SME. I was concerned about students being able to apply the new skills to other styles. I, in future revisions, will add activities to the end to guide students through the process of using different styles. I was not overly concerned with the time frame, but since he brought his concerns to my attention, it might be wise for me to extend the time frame of this to take into account the "goofing" and disruptions of students. It might also be ideal to convert this to an online module. Student goofing would be lessened in the online environments.

## Part 8. AECT Standards Grid

#### Professional Standards Addressed (AECT)

The following standards, developed by the Association for Educational Communications and Technology (AECT), and used in the accreditation process established by the National Council for Accreditation of Teacher Education (NCATE), are addressed to some degree in this course. The numbers of the standards correspond to the numbers next to the course tasks show on the list of assignments. Not all standards are addressed explicitly through student work.

		Assignments meeting standard in whole or part
Standard 1: DESIGN		
1.1 Instructional Systems		ID Project
Design (ISD)	X	
1.1.1 Analyzing	X	ID Project
1.1.2 Designing	X	ID Project
1.1.3 Developing	X	ID Project
1.1.4 Implementing	X	ID Project
1.1.5 Evaluating	X	Selected Discussion Forums; ID Project
1.2 Message Design		
1.3 Instructional Strategies	X	ID Project
1.4 Learner Characteristics	X	ID Project
Standard 2: DEVELOPMENT		
2.0 (includes 2.0.1 to 2.0.8)	X	ID Project
2.1 Print Technologies	X	Reading Quiz; ID Projects
2.2 Audiovisual Technologies		
2.3 Computer-Based Technologies	X	(all assignments)
2.4 Integrated Technologies		
Standard 3: UTILIZATION		
3.0 (includes 3.0.1 & 3.0.2)		

#### Instructional Design Project: Citing Sources Correctly Using APA Style

3.1 Media Utilization X (all assignments)

3.2 Diffusion of Innovations

3.3 Implementation and ID Project

Institutionalization X

3.4 Policies and Regulations

Standard 4: MANAGEMENT

4.0 (includes 4.0.1 & 4.0.3)

4.1 Project Management

4.2 Resource Management

4.3 Delivery System Management

4.4 Information Management

Standard 5: EVALUATION

5.1 Problem Analysis X

5.2 Criterion-Referenced ID Project

Measurement X

5.3 Formative and Summative ID Project

Evaluation X

5.4 Long-Range Planning

#### **COURSE GOALS & OBJECTIVES**

The overall goal for the course is for each student to consider and use the systematic process of instructional design to create an instructional product. To achieve this goal, students will engage in activities that promote reflective practice, emphasize realistic contexts, and employ a number of communications technologies. Following the course, students will be able to:

- 1. Discuss the historical development of the practice of instructional design with regard to factors that led to its development and the rationale for its use
- 2. Describe at least two reasons why instructional design models are useful
- 3. Identify at least six instructional design models and classify them according to their use
- 4. Compare and contrast the major elements of three theories of learning as they relate to instructional design

- 5. Define "instructional design."
- 6. Define the word "systematic" as it relates to instructional design
- 7. Define "learning" and synthesize its definition with the practice of instructional design
- 8. Relate the design of instruction to the term "educational (or "instructional") technology"
- 9. Describe the major components of the instructional design process and the functions of models in the design process
- 10. Provide a succinct summary of various learning contexts (declarative knowledge, conceptual, declarative, principle, problem-solving, cognitive, attitudinal, and psychomotor)
- 11. Build an instructional design product that integrates major aspects of the systematic process and make this available on the web.
  - a. Describe the rationale for and processes associated with needs, learner, context, goal, and task analyses
    - i. Create and conduct various aspects of a front-end analysis
    - ii. Identify methods and materials for communicating subject matter that are contextually relevant
  - b. Describe the rationale for and processes associated with creating design documents (objectives, motivation, etc.)
    - i. Construct clear instructional goals and objectives
    - ii. Develop a motivational design for a specific instructional task
    - iii. Develop assessments that accurately measure performance objectives
  - c. Select and implement instructional strategies for selected learning tasks
    - i. Select appropriate media tools that support instructional design decisions
  - d. Describe the rationale and processes associated with the formative evaluation of instructional products
    - i. Create a plan for formative evaluation

- 12. Identify and use technology resources to enable and empower learners with diverse backgrounds, characteristics, and abilities.
- 13. Apply state and national content standards to the development of instructional products
- 14. Meet selected professional standards developed by the Association for Educational Communications and Technology
- 15. Use various technological tools for instructional and professional communication

#### **AECT STANDARDS (Applicable to EDTECH 503)**

#### 1.0 Design

#### 1.1 Instructional Systems Design

- 1.1.a Utilize and implement design principles which specify optimal conditions for learning.
- 1.1.b Identify a variety of instructional systems design models and apply at least one model.
- 1.1.1 Analyzing
- 1.1.1.a Write appropriate objectives for specific content and outcome levels.
- 1.1.1.b Analyze instructional tasks, content, and context.
- 1.1.2 Designing
- 1.1.2.a Create a plan for a topic of a content area (e.g., a thematic unit, a text chapter, an interdisciplinary unit) to demonstrate application of the principles of macro-level design.
- 1.1.2.b Create instructional plans (micro-level design) that address the needs of all learners, including appropriate accommodations for learners with special needs.
- 1.1.2.d Incorporate contemporary instructional technology processes in the development of interactive lessons that promote student learning.
- 1.1.3 Developing
- 1.1.3.a Produce instructional materials which require the use of multiple media (e.g., computers, video, projection).
- 1.1.3.b Demonstrate personal skill development with at least one: computer authoring application, video tool, or electronic communication application.
- 1.1.4 Implementing
- 1.1.4.a Use instructional plans and materials which they have produced in contextualized instructional settings (e.g., practica, field experiences, training) that address the needs of all learners, including appropriate accommodations for learners with special needs.
- 1.1.5 Evaluating
- 1.1.5.a Utilize a variety of assessment measures to determine the adequacy of learning and instruction.
- 1.1.5.b Demonstrate the use of formative and summative evaluation within practice and contextualized field experiences.
- 1.1.5.c Demonstrate congruency among goals/objectives, instructional strategies, and assessment measures.

#### 1.3 Instructional Strategies

- 1.3.a Select instructional strategies appropriate for a variety of learner characteristics and learning situations.
- 1.3.b Identify at least one instructional model and demonstrate appropriate contextualized application within practice and field experiences.
- 1.3.c Analyze their selection of instructional strategies and/or models as influenced by the learning situation, nature of the specific content, and type of learner objective.
- 1.3.d Select motivational strategies appropriate for the target learners, task, and learning situation.

#### 1.4 Learner Characteristics

- 1.4.a Identify a broad range of observed and hypothetical learner characteristics for their particular area(s) of preparation.
- 1.4.b Describe and/or document specific learner characteristics which influence the selection of instructional strategies.
- 1.4.c Describe and/or document specific learner characteristics which influence the implementation of instructional strategies.

#### 2.0 Development

- 2.0.1 Select appropriate media to produce effective learning environments using technology resources.
- 2.0.2 Use appropriate analog and digital productivity tools to develop instructional and professional products.
- 2.0.3 Apply instructional design principles to select appropriate technological tools for the development of instructional and professional products.
- 2.0.4 Apply appropriate learning and psychological theories to the selection of appropriate technological tools and to the development of instructional and professional products.
- 2.0.5 Apply appropriate evaluation strategies and techniques for assessing effectiveness of instructional and professional products.
- 2.0.6 Use the results of evaluation methods and techniques to revise and update instructional and professional products.
- 2.0.7 Contribute to a professional portfolio by developing and selecting a variety of productions for inclusion in the portfolio.

#### 2.1 Print Technologies

- 2.1.3 Use presentation application software to produce presentations and supplementary materials for instructional and professional purposes.
- 2.1.4 Produce instructional and professional products using various aspects of integrated application programs.

#### 2.3 Computer-Based Technologies

2.3.2 Design, produce, and use digital information with computer-based technologies.

#### 3.0 Utilization

#### 3.1 Media Utilization

- 3.1.1 Identify key factors in selecting and using technologies appropriate for learning situations specified in the instructional design process.
- 3.1.2 Use educational communications and instructional technology (SMETS) resources in a variety of learning contexts.

#### 3.3 Implementation and Institutionalization

- 3.3.1 Use appropriate instructional materials and strategies in various learning contexts.
- 3.3.2 Identify and apply techniques for integrating SMETS innovations in various learning contexts.
- 3.3.3 Identify strategies to maintain use after initial adoption.

#### 4.0 Management

(none specifically addressed in 503)

#### 5.0 Evaluation

#### 5.1 Problem Analysis

5.1.1 Identify and apply problem analysis skills in appropriate school media and educational technology (SMET) contexts (e.g., conduct needs assessments, identify and define problems, identify constraints, identify resources, define learner characteristics, define goals and objectives in instructional systems design, media development and utilization, program management, and evaluation).

#### 5.2 Criterion-referenced Measurement

5.2.1 Develop and apply criterion-referenced measures in a variety of SMET contexts.

#### 5.3 Formative and Summative Evaluation

5.3.1 Develop and apply formative and summative evaluation strategies in a variety of SMET contexts.

 $SMET = School Media \ \mathcal{O} Educational Technologies$