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*Instructions: Complete this exam by completing this very document. Save your word-processed file and upload it to the eCourseware dropbox by the deadline listed on the eCourseware dropbox. You may use any and all sources except another person.*

*Total possible points: 100*

Question 1. (50 points). Complete the table below. For this question, use "E-Learning and the Science of Instruction" as your point of reference. You may also use other research-based references. Describe how the HTML-based instructional product you completed complies with the principles below. Be specific about design decisions you made to make your program align with these principles. If your project violates the principles intentionally, explain your decision. Your explanation must include research-based evidence or findings beyond your opinion or experience. Your answers must be specific to your project. If your project violates the principles unintentionally, explain what you should have done. Your answer must be at least 1500 words (about 250 words per principle, if you like proportionality). There is no maximum word count.

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| **Principle** | **Your explanation** |
| Multimedia principle | As described in Clark and Mayer (2011, p.70), the multimedia principle refers to the inclusion of verbiage and graphics in a digital presentation. During the design phase of my presentation I thought heavily on the elements I wished to include; what images I could use to hook the learner, the wording I might include to assist in informing the learner about the topic, and how and in what order to present the information. Throughout the Dreamweaver and Articulate projects, graphics and text are presented on each slide (excluding the quiz which is text only); however, for the Articulate project, several slides were converted to graphics and audio; as an application of the modality principle (to be discussed later).I believe that I my projects clearly show use of the Multimedia Principle as both projects contain graphical information, textual information, hyperlinks to external sites, and in the Articulate project, audio. Besides, it would be hard to have an online multimedia presentation without graphics and text. |
| Contiguity Principle | The Contiguity Principle refers the physical spacing of graphic and associated text and the connectivity of the presentation with incorporated audio. A learner should not have to scroll down through text to read about the graphical information being presented. The information should be close together on the slide and should have a visual connection based on the proximity of the items on the slide. Similarly, audio should be presented with or close to the same time the associates graphics and text are presented. It not presented close together, the material stimulates a feeling of disconnectedness and a lack of contiguity.During the development of my projects, I tried to keep this principle in mind, especially with consideration to the layout of the information being presented. As an example, slide showing [examples of igneous rocks](https://umdrive.memphis.edu/jamartn1/public/IDT_7090/Dreamweaver%20Project/Igenous_rocks.html), I positioned the text to the left or the right of the graphic with plenty of space above and below the text. This gives the visual cue that this text is associated with the closest item (the graphic). This visual cue could have been reinforced by using line justification and by increasing the visual space among unassociated items.Since the Articulate project incorporated audio, I tried very hard to time the appearance of the text and graphic to the audio file. Also, I also used the annotation arrows those times that I could not control graphic insertion to denote the area of focus. This principle can be clearly seen on the navigation slide of my Articulate project, [The Rock Cycle, Plate Tectonics, and You](file:///C%3A%5CUsers%5CBASE-TN%5CGoogle%20Drive%5CSchool%5CSpring%202014%5CIDT%207090%5CArticulate_Project%5CThe%20Rock%20Cycle%2C%20Plate%20Tectonics%20-%20Presenter%20output%5Cindex.html). |
| Modality Principle | The Modality Principle refers to the presentation of audible information in association with graphical information rather than textual information. Based on cognitive theory, utilizing both channels of input (visual and audible) simultaneously offers a better chance of the information being incorporated into the learners understanding of the material (dual coding). If the audible information was presented as text along with a graphic, then the learner would have to look at the graphic, then read the text, then look back at the graphic. By presenting the textual information in an audible format, you bypass the need to review the graphic a second time for comprehension. As I did not incorporate audio into my Dreamweaver project, I have no examples of this principle present; however, during the development of the Articulate project, I choose to replace a majority of the textual information with speech audio.I would like to think that I succeeded in presenting this principle in the Articulate project; however, I did receive some negative feedback regarding my choice to use a digital reader instead of a human voice. Had I thought it would make much difference, I would probably have found someone with a good reading voice to narrate my slides. Also, there may be a few instances in which I could incorporate better graphics then those I choose. |
| Redundancy Principle | The Redundancy Principle refers to the use of on-screen text and audible recording, in which the same information is presented. Clark and Mayer (2011) advised against repeating the same information in this redundant fashion, as it increases the chance of overloading the learner.Since the Dreamweaver project contained no audio, this principle was not considered; however, there was some redundant information presented in the Articulate project. During the presentation of the navigation tools, I used the audio as a method of reinforcing understanding of the three methods of navigation; however, only bullet point where presented textual while the audio provided additional information. Although this is close to the redundancy principle I felt that this fell into the acceptable reasons to include redundancy. Similarly, I used redundancy during the quiz to reinforce the various methods in which the different types of rocks were formed.During each of these situations, I felt that the redundancy was necessary as a method of reinforcing the information presented and since there was little to no graphics in these situations, I believed there was little chance of overloading the learner with audio, graphical, and textual information.  |
| Coherence Principle | The Coherence Principle refers to the ability of the graphic, audio, and text to relate to the same topic without overloading the learner. The idea being to only include those items that are necessary to the development of understanding of the topic and to exclude an unnecessary items that might add ‘flash’ or ‘wow factor’ to a presentation. Clark and Mayer (2011) call these extras, “*seductive details,* interesting but irrelevant material added to a multimedia presentation in an effort to spice it up” (p.153).For both projects I tried very hard to insure that all information was pertinent and would not be extraneous. I focused on a minimal amount of information (text, graphic and audio) and attempted to provide multiple opportunities for understanding. I included very little animations or slide transition features, as I saw these as distractors. I feel that both my projects remained true to this principle in the fact that the only extraneous material was presented at the beginning of the presentation as an interest generator or at the end of the presentation as an emotion tie to create the desire to personalize the material. Between these two points, I tried to remain on task and present only information that directly associated to the topic I wished to be learned. |
| Personalization Principle | The Personalization Principle refers to the learner’s impression of the presentation based on the conversation tone of the material. If a presentation is developed utilizing formal speech and complex verbiage, the learner will be less likely to learn the material. However, it the presentation is developed with a less formal, more conversational tone, the learner will be more relaxed and more inclined to learn.During my projects it was necessary to present some material in a slightly formal manner (lecture); however, I feel that the introduction to the presentation and the narration throughout the presentation was set in a less formal tone; which would have set the learner at ease. Besides the definitions of the various different boundary types (transform, convergent, and divergent) and the different types of rocks (metamorphic, igneous, and sedimentary), I believe the verbiage used was simple and easy to understand. Things that ease the learner’s stress regarding the presentation and facilitate the learning experience.  |

Question 2. (20 points). What is e-learning? Construct a brief, coherent answer this question. I’ve read our textbooks, so try to be original in your answer. 300 words minimum. No maximum.

At its core, e-learning is the use of a digital device as a medium to a learning opportunity which includes; examples, practice, and feedback, pertains to a learning objective, and contains words, graphics, and/or audio. The device could be any digital device (portable or stationary) that allows for the accessing of digital media, such as; a smartphone, a laptop, or an mp3 player. The lesson could be saved as files on a storage device (CD, flash drive, local HDD, etc.) or accessed from an online website via the Internet. The lesson could be one in which the student interacts with the instructor via a synchronous video conference, a self-paced lesson done at 3 in the morning, or an asynchronous activity with peers from the class completed over a period of time. Regardless of the device used, the method of contact to the materials, or the structure of the lesson, e-learning is about education that incorporates technology as a tool.

Question 3. (30 points). Complete the table below. Use your chosen instructional topic (from your completed HTML assignment). Describe specific learning activities you used in your instructional project. If you did not incorporate an activity from the categories below in your project, describe what you could have done. Minimum 1000 words. No maximum.

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| **Activity Category** | **Briefly describe your specific activity.** | **Why did you include this activity? What general learning goal does this address?** |
| Absorb-type activities | As described by Horton (2012), a slide show presentation is form of absorb-type activity in which information is presented to the learner via graphics, text, and/or audio records. Based on this description, both my Dreamweaver and Articulate project meet this definition, as they provide information regarding rock develop and plate tectonics via graphic, text, and audio recordings. | Online multimedia presentation containing graphics, text, and audio is the simplest method of providing information regarding a learning topic. These projects were developed as a means to impart information regarding the rock cycle, plate tectonics, and how these two systems are connected on a global (and local) scale.  |
| Do-type activities | Horton (2012) describes do-type activities as an opportunity for the learner to apply information, knowledge, or skill; make discoveries, or have a safe environment in which to explore their understanding of a topic.I believe [The Learning Zone activity](http://www.oum.ox.ac.uk/thezone/rocks/cycle/index.htm) linked in my presentations provides just such an opportunity regarding the various phases of the rock cycle and how they are related. | During [The Learning Zone activity](http://www.oum.ox.ac.uk/thezone/rocks/cycle/index.htm), the learner has the opportunity to view information on the different stages that a rock will traverse during the rock cycle. During this activity, the learner can explore any of the various phases of the rock cycle (weathering, uplifting, melting, etc.) and receive specific information regarding what is happening to the rock. The learner is then allowed to move to another phase. All the while the learner is constructing an understanding of the topic and how the various phases of the rock cycle relate.Once they have an understanding of the rock cycle, the learner has the opportunity to test their knowledge of the rock cycle by participating in the [interactive quizzes](http://www.oum.ox.ac.uk/thezone/rocks/games/index.htm); of which two levels are provided. |
| Connect-type activities | As described by Horton (2012), connect-type activities help to bridge the connection between prior knowledge and the newly acquired knowledge and can be used to connect the newly acquired knowledge to real-life applications. I would like to think that my presentations contain these type of activities through the use of the [interactive animations of plate tectonic boundaries](http://www.classzone.com/books/earth_science/terc/content/visualizations/es0804/es0804page01.cfm?chapter_no=visualization) and through the link to information regarding the formation of [Reelfoot Lake](http://earthquake.usgs.gov/earthquakes/states/events/1811_overview.php). | In both presentations, I wanted to prior opportunities to connect the more in-depth knowledge regarding plate tectonic boundaries to what I believe would be basic information. In general, most people know that the continents exist on plates (Middle school science), but I’m not sure how many people actually know the different types of plate boundaries; therefore, it became necessary to include that information. And what better example could be provided, but a short animation of the boundaries in motion.Similarly, if you are from the Mid-south, you know we live near a semi-active fault line and that we’ve had earthquakes in the past. What better way to stimulate outside interest than to provide a [link](http://earthquake.usgs.gov/earthquakes/states/events/1811_overview.php) to information about the New Madrid fault and the creation of Reelfoot Lake.  |
| Tests | During my presentations, I provide two opportunities for the learner to test their understanding of the rock cycle, rock development, and the connectivity of the rock cycle and plate tectonics. 1. [The Learning Zone](http://www.oum.ox.ac.uk/thezone/rocks/games/index.htm) activity has two tests available of varying difficulty, which provide the learner a chance to insure their understanding of the rock cycle and the various phases rocks can be during and after their creation.2. There is a quiz available in both the [Dreamweaver Project](https://umdrive.memphis.edu/jamartn1/public/IDT_7090/Dreamweaver%20Project/Quiz.html) and the [Articulate Project](https://umdrive.memphis.edu/jamartn1/public/IDT_7090/Articulate_Project/). Both of which provide constructive feedback to the learner. | Although typically used to test the learners understanding of the knowledge or the capacity of the learner to memorize information, I choice to develop my tests as another opportunity to provide the learner with information regarding the basic theory of plate tectonics, the formation of rocks, and the understanding of how several geological systems interact with one another.[The Learning Zone Tests](http://www.oum.ox.ac.uk/thezone/rocks/games/index.htm) gave the learner the reinforce their memorization to the phases of the rock cycle; at level one with by providing the phases and requiring the learn to drag-and-drop the correct graphic, while level two required the learner to drag-and-drop both elements, graphic and text.During each of the in-presentation quizzes ([Dreamweaver](https://umdrive.memphis.edu/jamartn1/public/IDT_7090/Dreamweaver%20Project/Quiz.html) and [Articulate](https://umdrive.memphis.edu/jamartn1/public/IDT_7090/Articulate_Project/)), the leaner was provided reinforcing information as to why the answer was right. Again, this reinforces the material and insures that some information has been retained. |