

# Project Report

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Amy Som  
asom@indiana.edu

## Executive Summary

This report summarizes the work completed in the creation of the Web lesson, “Making Your First Beaded Necklace” (<http://avisualmind.com/school/r541/lesson1/>). This report discusses the processes followed, analysis findings, instructional strategies, and key design and development decisions implemented in this lesson. The purpose of this Web lesson is to create mastery in designing and assembling a single-strand beaded necklace. This instructional product will serve as supplementary materials for a course given by the City of Tucson Parks and Recreation Department. The audience will be learners of either gender, ages 17 and up. The lesson uses a combination of direct instruction and experiential learning strategies. Photographic elements, text, animation, video, and audio segments are used to convey the instruction.

# Analysis

## Objectives for the instruction

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The purpose of this Web lesson is to teach learners how to make a single strand necklace with a pendant or charms. At the end of the lesson, learners should be able to:

- Correctly identify and describe basic beading tools and materials.
- Choose the right tool for a task, given a selection of tools.
- Determine a desirable length for a necklace, using a measuring tape and mirror.
- Calculate, measure, and cut the length of wire needed to make a necklace of their desired length, given a measuring tape and wire cutters.
- Use tools safely to secure clasps to beading wire, such that clasps will remain attached during normal wear, given wire, chainnose pliers, and crimp beads.
- Apply design principles to layout beads on a bead design board, creating an aesthetically interesting design.
- Use tools safely to create a pendant or charm with a plain loop, given roundnose pliers, wire cutters, beads, and a headpin or eyepin.
- Use tools safely to create a pendant or charm with a wrapped loop, given roundnose pliers, chainnose pliers, wire cutters, beads, and a headpin or eyepin.

## Process used for this analysis

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The needs analysis for this project was straightforward; I determined that there was a strong interest in beading from my experiences in craft stores and craft shows in Tucson. I also noted that the Tucson Parks and Recreation Department did not have a class in beading, though they have other jewelry-making classes.

For the content analysis, I drew on my own knowledge of beading to determine a reasonable scope and a content outline for the lesson.

I concentrated my energy on the audience and context analyses, and used my knowledge of students in Parks and Recreation classes (from my experiences in taking their classes) as well as instructional design references (e.g., Morrison, Ross, and Kemp, 2004).

## Needs analysis

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The goal of the City of Tucson Parks and Recreation Department is to offer diversified leisure activities to city residents. It offers many arts and crafts classes, to provide cultural enrichment to the community and promote lifelong learning. Beading is just one of the popular creative activities in which the department offers classes. Interest in beading is strong, judging by the number of patrons in the beading sections of craft stores in the Tucson area.

Creating beaded jewelry is a task that requires specialized knowledge and psychomotor skills. As such, those who want to create beaded jewelry need detailed instruction and opportunity to practice before they can become expert in the task.

## Content analysis

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I decided to make this instructional project the first lesson of the Beginning Beading course. As the first lesson, it should cover content that will form the basis of skills and knowledge to be learned later in the course. The content should also be of interest to all learners in the class (male, female, of any age). For example, creating chandelier earrings may be a topic in the course, but it would not be appropriate for the first lesson, when it is preferable to get all learners started on the basic skills and knowledge. Finally, the lesson should cover enough content for learners to complete at least one piece by the end of the lesson. This will help learners gain confidence and enthusiasm for the subsequent lessons.

### **Topic: Making a Single-Strand Necklace**

- I. Tools
  - a. Wire cutters
  - b. Chainnose pliers
  - c. Roundnose pliers
  - d. Bead design board
  - e. Tape measure
  - f. Safety goggles
  - g. Mirror
- II. Materials
  - a. Beads
  - b. Beading wire
  - c. Crimp beads
  - d. Lobster claw clasp
  - e. Soldered jump ring
  - f. Headpin
  - g. Eyepin
- III. Design principles
  - a. Contrast
  - b. Unity
  - c. Balance
- IV. Assembly procedures
  - a. Determine desirable length
  - b. Cut appropriate length of wire
  - c. Layout necklace
  - d. Make charms or pendant
  - e. Secure clasps to wire

## Audience & Context analysis

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### **Audience characteristics**

#### **General characteristics**

Students may be of either gender, but the majority will be female, ages 17 and up. Work experience is varied. Most will have at least a high school education. Ethnicity is expected to be diverse; Tucson is an ethnically diverse community and beading is an activity that is part of many cultures.

#### **Entry competencies**

For beginning beading, there are not many prerequisites or assumptions of knowledge. It is assumed that students can recognize pliers, wire, and scissors, and have familiarity with the basic features of jewelry.

#### **Learning styles**

In a diverse audience, one would assume that students will have a variety of learning styles. Instructional design should incorporate presentation methods that will address visual, auditory, and kinesthetic learning styles.

#### **Personal/social characteristics**

A wide range of ages, maturity levels, and personal experiences can be expected in this audience, from students still high school, to young mothers, to middle-aged executives, to retirees. All want to make their own jewelry, and are probably taking this class to enjoy themselves socially as well as learn skills. Motivation should be fairly high, as students are paying for the class and required materials themselves.

No assumptions can be made about the audience's mechanical dexterity; although students choosing leisure classes may have a tendency to select activities they believe they would be good at, some students may choose the class as a challenge or for mostly social reasons.

No special talents are required, although those who are good at visualization and have good manual dexterity will find tasks easier.

The audience, as older teen and adult learners, would be expected to display the characteristics typical of adult learners: a high level of motivation, a desire to participate in decision making, an expectation of practical benefits, a respect for expertise and preparation in the instructor, and a liking for group cooperation and time to socialize (Morrison, et al., 2004).

#### **Context**

This Web lesson is part of a personal interest class in beginning beading given by the Tucson Parks & Recreation Department. This course would meet for two hours, once a week, for nine weeks, in a face-to-face classroom. The Web lessons are intended to be used by students at home, to help them finish projects that are started in class. In a class that meets only once a week, it could be easy to forget some points covered in class by the time the student is able to complete their

project at home. The Web lessons will remind the student of what she learned in class.

The Web lessons will also help students who are unable to attend all of the class sessions. Each week's lesson will have a corresponding Web lesson that can be used by students who are unable to attend, so that they do not fall behind the rest of the class.

### **Orienting context**

Learners' goals are to learn to make their own jewelry as an enjoyable leisure activity. Perceived utility of instruction should be high. Students' perception of accountability should be heightened by informally presenting their creations to the instructor and other students.

### **Instructional context**

The class Web materials will be used exclusively by students from home or public access computers (e.g., at a library). Students will receive information necessary for accessing the site (URL, login information) when they register. Students could, conceivably, never attend face-to-face classes, but use the Web lessons on their own and cover the same content as is covered in class sessions.

At the same time, using the Web lessons is not required for the class. Students can attend the class sessions, practice techniques, take notes, and never look at the Web lessons at all. The Web component of the class is intended mostly to strengthen transfer of skills to the students' own context (their homes) and to make practicing skills on their own time easier. It also provides instructors with support materials. The Web lessons can be used as the basis of lesson plans for the face-to-face class sessions, and printouts from the Web site can be used as handouts in class. Instructors for the Parks & Recreation classes may change from season to season, or there may be multiple sessions at one time, taught by different instructors. Using the same Web lessons can help to maintain consistency from class to class.

Students are required to purchase their own tools and materials.

### **Transfer context**

Students will complete some projects at home, those that cannot be completed within the two hours of class time. They will have their own tools and materials. Whether they continue to use their learning after the class has ended will depend on how enjoyable they found the activity, how much time they have to devote, how much money they have to spend on purchasing more materials, and perhaps how much encouragement they receive from friends and/or family.

## **Instructional strategy and justification for this strategy**

Because this lesson covers basic skills that will be built upon later in the class, and because "you have to learn to walk before you can run," the lesson uses a direct instruction strategy initially. The lesson begins with a structured overview and moves into explicit teaching of beading tool, materials, and techniques (facts, concepts, and procedures). This strategy should work well for the older teen to adult audience of the lesson; these learners are expecting to learn practical skills

and should appreciate concrete representations as an accessible introduction to new learning.

In the Web lesson, the structured overview consists of a bulleted list of the main points to be covered. For the explicit teaching segments, the Web lesson will use a combination of text, photographs, animations, video, and audio segments to tell, show, and guide students through the basic terms and techniques.

For the principles to be learned, and because beading is a creative as well as a mechanical activity, the lesson uses an experiential learning strategy. The Web lesson presents several examples of finished beading projects in photographic form, and asks students to derive principles from the examples, e.g., using different sized beads adds interest by creating contrast. After studying examples and deriving principles, the students are invited to experiment with creating their own bead designs and patterns that illustrate the principles, using the information and procedures they learned from the first part of the lesson. The experiential strategy for the design segment of the lesson should work well for this group of learners, as it appeals to their creativity and independence, and gives them opportunity to practice their skills while making their own decisions.

<b>Types of Information</b>	<b>Instructional Strategies / Applications</b>
<p>Facts:</p> <ul style="list-style-type: none"> <li>• concrete facts, e.g., crimp beads are made of metal</li> <li>• abstract facts, e.g., wire should be cut 5-6" longer than the desired length of jewelry</li> </ul>	<p>Presentation of concrete representations</p> <p>Application: A table shows pictures of tools labeled with terms and descriptions</p>
<p>Concepts:</p> <ul style="list-style-type: none"> <li>• Beads: glass beads, wood beads, metal beads, round, tube, seed, etc.</li> <li>• Tools: side cutters, chainnose pliers, roundnose pliers, needles, etc.</li> </ul>	<p>Organizational strategy—intention is to have learners distinguish different types and their usage</p> <p>Application: Tools are grouped together to show differences, and usage is explained in text</p>
<p>Principles: using various sizes of beads creates an interesting texture</p>	<p>Eg-rule and elaboration—present examples, ask learners to derive principle, ask learners to create own designs to illustrate principle</p> <p>Application: Examples and principles are presented in a slideshow, then learners are asked to derive their own from more examples and design using these principles</p>

<p>Procedures:</p> <ul style="list-style-type: none"> <li>• Cognitive procedures: designing a pattern, calculating number of beads, calculating length of wire</li> <li>• Psychomotor procedures: crimping beads, shaping wire</li> </ul>	<p>Demonstration, organization, practice</p> <p>Application: Adding a clasp to beading wire is demonstrated in a video segment. The key steps are explained in text, and students are asked to complete the procedure using their own tools and materials.</p>
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# Design and Development

## Description of the instruction

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### Setting

The setting in which this instruction will be used will vary. Students will access the Web lesson from a computer to which they have access. This may be their own or a friend's computer, or a computer in a public setting such as a library.

### Activities and sequence

1. Gather and become familiar with tools and materials.
2. Determine a desirable length for a necklace.
3. Measure and cut beading wire for necklace.
4. Learn about design principles and apply to designing a necklace.
5. Make components (charms or a pendant).
6. Add a clasp to the beading wire.
7. String beads and components.
8. Finish necklace by adding a ring to the end.

## Form & function

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### Functional requirements

This Web lesson will teach students in a beginning beading class how to create a single-strand necklace with a pendant and/or charms. The lesson will be part of an instructional Web site that accompanies a face-to-face class. The Web site is intended to help students who miss a class session catch up on their own and also to help students remember what they learned in class when they are working on projects at home.

The Web lesson on creating a single-strand necklace covers these types of information:

- (1) terms for materials (e.g., tiger tail, lobster claw, headpin) and tools (e.g., chainnose pliers, roundnose pliers, bead board),
- (2) procedural information, and
- (3) design principles.

Information about materials and tools is conveyed by using a photographic image with a text label and a description of their usage.

The procedural information in the lesson is covered through a combination of text, still photographs, and animation/video with audio narration. All of the steps in the procedure are described in text with illustrative photographs. Certain complex steps are also elucidated by video with audio narration.

Design principles are conveyed through an animated slideshow of examples of completed beaded necklaces, with an audio dialogue between two people discussing the features they notice in the designs and some of the principles that they derive from the examples.

The instructional Web site will consist of an index page and nine lessons. The site navigation will include links to the index page and lessons. Each lesson will also have sub-navigation to sections within the lesson. All pages will include copyright and legal information clearly but unobtrusively.

A structured overview introduces each lesson. This overview consists of a text outline of what the learner can expect to accomplish by the end of the lesson. The overview prepares the learner for what will be covered in the lesson and also inspires and motivates the learner to complete the lesson.

The look and feel of the site will need to appeal to beaders age 17 and up. It should not be overtly feminine or masculine and should feel appropriate for senior citizens and young adults alike.

## Form and Function Matrix

FUNCTIONAL REQUIREMENT	FORM	JUSTIFICATION
Appeal to beaders, either gender, ages 17 and up	<ul style="list-style-type: none"> <li>• Neutral color scheme, in earth tones and slightly desaturated blues and greens</li> <li>• Photographs of completed beading projects in a wide range of styles, for both men and women</li> <li>• Moderate default text size (14-18 pixels) for body text</li> <li>• Layout designed for text size to scale up or down by using built-in controls in Web browser</li> </ul>	A neutral color scheme and a moderate (not too large and not too small) default text size should feel comfortable for a range of adults of either gender. Designing the layout so the text can be scaled will accommodate older readers who need larger type. Making sure that there is a broad range of styles (classic, trendy, masculine, feminine, unisex) represented in the photographs will heighten the appeal.
Provide learners with the means to find specific information	<ul style="list-style-type: none"> <li>• Using labeled navigational controls that follow established Web conventions (underlined, colored text)</li> </ul>	Labeled navigational controls allow the user to skip quickly to the information that they need.
Describe terms for materials and tools	<ul style="list-style-type: none"> <li>• Photograph of each item with text label giving the proper term and common usage for the item</li> <li>• Explanation of usage also integrated within description of procedure</li> </ul>	Learners are first presented with a realistic concrete representation of the item, and then asked to use the item in context of the overall goal of the lesson, thus practicing identification and application of the concept.
Show and describe techniques/procedures	<ul style="list-style-type: none"> <li>• Description of procedure in text with clearly labeled steps</li> <li>• Illustrative photograph(s) with each step</li> <li>• Video with audio narration to show the procedure for complex steps</li> </ul>	Chunking information into steps and labeling those steps facilitates comprehension. Photographs showing the procedure help the learner duplicate it. For steps that are multi-stage, a video with narration lets the user see the procedure happen over time.

<p>Give examples and explain principles</p>	<ul style="list-style-type: none"> <li>• Flash animated slide show of completed beaded necklaces, accompanied by audio dialogue pointing out features and explaining design principles</li> <li>• Invitation to the learner in audio and text to derive own design principles and apply to creating own designs</li> </ul>	<p>The animation and audio dialogue follows an eg-rule and elaboration strategy, in which the learner is presented with examples, asked to derive principles, and use the principles in an application (Morrison, Ross, and Kemp, 2004).</p>
<p>Support the learner working alone</p>	<ul style="list-style-type: none"> <li>• Photographs of real tools, materials</li> <li>• Videos show the procedure as it happens over time</li> <li>• Audio segments explain tips and techniques</li> <li>• Stepwise instructions chunk the information to facilitate comprehension</li> <li>• Navigational text allows the learner to step forward and backward</li> </ul>	<p>Using photographs of real tools and materials helps the learner working alone at home make the connection between instruction and his/her own tools and materials. Videos and audio segments demonstrate and explain a procedure as an instructor would, and can be replayed any number of times. The step-by-step layout is self-explanatory and allows the learner to repeat steps or advance on their own pace.</p>

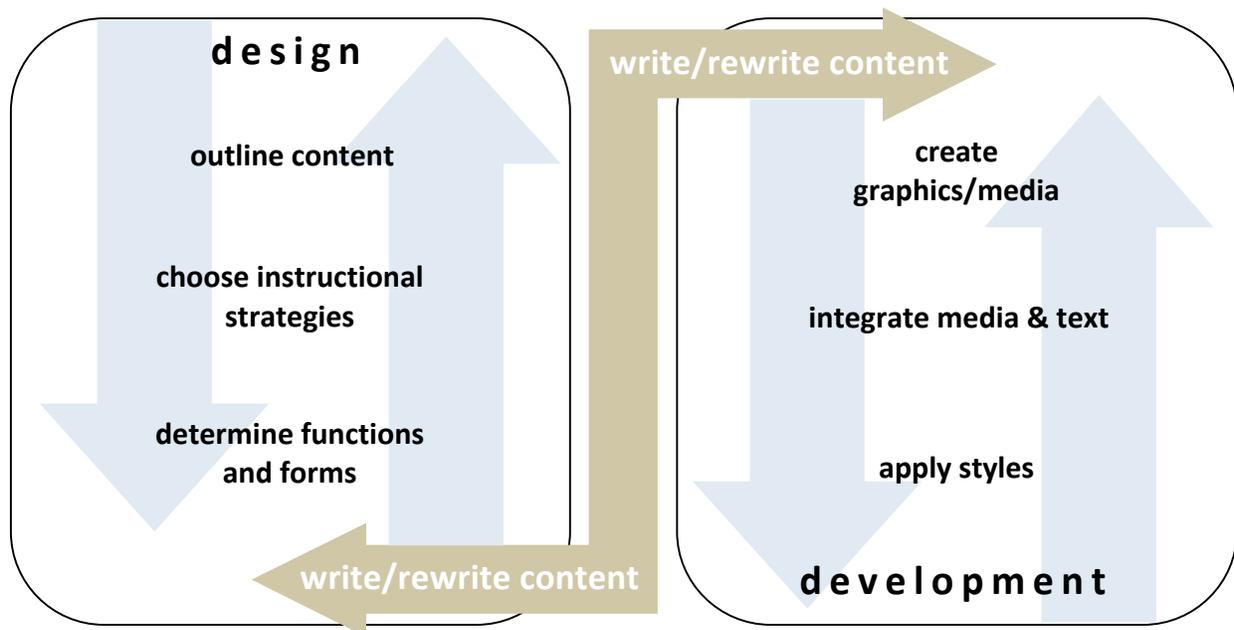
## Design & development processes

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The major elements of my process for this project were:

- Outline content
  - Define scope
  - Define types of content
  - Determine sequencing
- Choose instructional strategies
- Determine functions and forms
- Write (and rewrite) content
- Create graphic and media elements
- Integrate graphics and media with text
- Apply styles

I followed this process in roughly the order I have listed here, but I moved backward through the process frequently to revisit and revise decisions I had made. This is represented by the sets of double arrows in the diagram. While I was in the “design” phase, I moved back and forth between the elements in the left area of the diagram, and while I was in the “development” phase, I tended to move back and forth between the elements in the right area. My “jumping off” point from design to development was when I wrote the content for the lesson, and then my “jumping back” point was revising the content significantly, at which point I needed to revisit design decisions. This interaction is represented by the double-arrow elbow connector in the diagram.



# References

Morrison, R., Ross, S., & Kemp, J. (2004). *Designing Effective Instruction* (4<sup>th</sup> ed.). New York: John Wiley & Sons.