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EDET 709, Spring 2012

Mini-Redesign Analysis

March 19, 2012

Mini-Redesign Analysis of “Fractions” a PowerPoint Slide Show by Cary Lee

The PowerPoint presentation I have chosen to redesign is entitled “Fractions” and is available at <http://www.grossmont.edu/mathstudy/lessons/fractions/Fractions.ppt>. This PowerPoint was designed for use by community college students. I have chosen to be my own “client” for this project and do what teachers are famous for – “stealing” content ideas – and modifying for a 5th grade math class.

The goal of instruction is to review the concept of fractions with elementary students in preparation for a unit on fractions, decimals, and percents. The PowerPoint was designed as supplementary instruction for students struggling with the concept of fractions in a community college 100-level course, therefore instruction would have taken place in one or more of the following locations/environments: a lab individually or in small group, at home in a self-directed manner, or in small group at a tutoring center. The students would have been young adults in the early college program (ages 15-18) or adults and have had primary instruction in elementary grades as well as direct instruction in a classroom of 7-100 students.

The redesign will make the material appropriate for whole class, large, or small group instruction for 5th graders aged 10-12 years in class or at home.

Although the original complete PowerPoint is available and contains 57 slides, nearly half of those slides are for animation of two sections of worked examples, and the slide show covers three primary areas of fractional computation in addition to an introduction to the concept. For the purpose of this project, I am only using the first 15 slides of the PowerPoint, which discuss vocabulary and the concepts of equivalent, comparing, reducing, and identifying fractions. In order to manage cognitive load, I will reduce the number of concepts covered in this lesson to match a specific state standard learning objective/indicator.

Because the PowerPoint might be accessed at home, the content should be complete and self-explanatory and contain self-assessment and feedback or worked examples and goal-free problem –solving activities. The students live in a rural area and may have limited access to a computer or high-speed internet, so the file should also be accessible by a variety of computers with a wide variety of capabilities. The total file size should be small to improve ease of download in case of a dial-up or low-speed internet connection, access by laptop, or in a public setting, and download instructions should appear on the download page. The PowerPoint should be available in multiple formats – in this case 97-03, 07, pdf.

Additionally, the PowerPoint should adhere to Universal and Graphical/Visual Design principles and provide access to students regardless of ability. There should be audio components and alternate text for images, attention paid to the color of the background, text, and images as well as the distribution of content on each slide. The content and images will be reviewed or revised to reflect research on contiguity, the quality of worked examples, cognitive disequilibrium and cognitive load. The content will

be revised to reflect the school district's preferred constructivist pedagogies of scaffolded learning and behaviorist motivation techniques. The content will be supplemented to include required state standards and informational requirements.