Chapter 18
Constructing an Experience in a Virtual Green Home

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ABSTRACT

Undergraduate students in an environmental science course learned to make environmentally-conscious decisions by visiting a virtual green home in Second Life (SL). One group of learners was immersed in a virtual field trip experience where they viewed evidence of green decisions in a virtual home. Another group studied the same content through a static website. Pre-test and post-test results for both groups demonstrate significant differences in scores after instruction. Results suggest a virtual world can provide an instructionally effective medium if instructors allow ample time and training for students to become familiar with the environment. Feedback from SL participants suggests that learners felt they had participated in an "experience." Instructional design considerations which focus on creating an educational experience involving active tasks and social interactions might best maximize the educational usage of a virtual world.

INTRODUCTION

Two sections of an undergraduate environmental science course participated in a study which compared instruction in Second Life with a static Web-based delivery method. One section studied green homes by visiting a Web site where they read descriptions and viewed photographs (control group, N=51). Their experience was grounded in decidedly Web 1.0 methodologies. The other section visited a virtual green home in SL and participated in related instructional activities (experimental group, N = 58). Pre-test and post-test data indicates that both groups showed significant differences in scores after instruction. When comparing the results of the two groups

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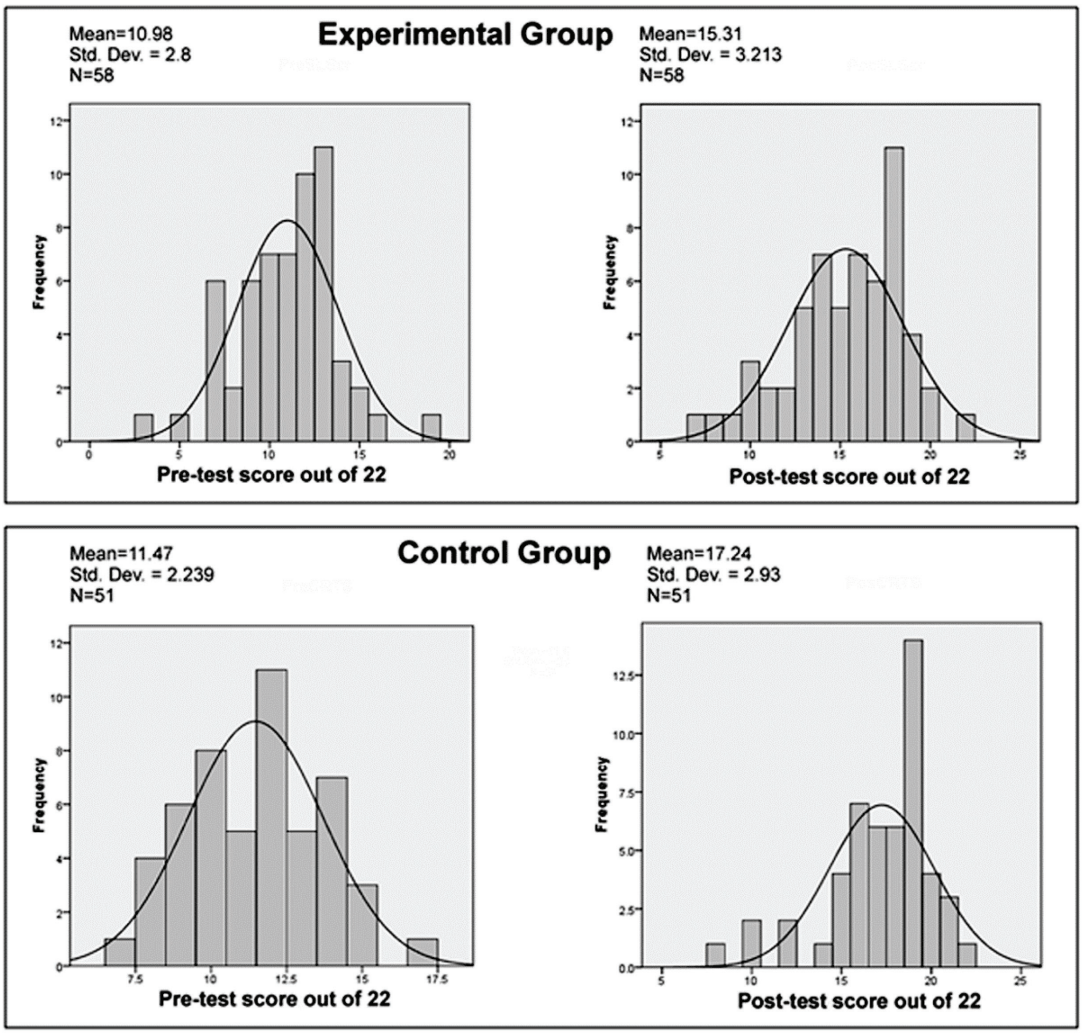
Figure 1. Comparison of pre-test and post-test scores in experimental and control group



to each other, there was a statistically significant difference between the two groups' performances on pre-test and post-test scores, with the control group showing a greater difference.

The sample for this study consisted of undergraduate students enrolled in Biological Science 003, an introductory environmental science course, which fulfills a natural sciences general elective requirement. This course had previously been delivered in a traditional face-to-face format; although after adding the new online elements described in this chapter, the delivery method might be categorized as web-enhanced. The level of outside-of-class online activities does not constitute the label of a hybrid course. Two sections of Bi Sc 003 were randomly assigned as the experimental group and control group.

Considerations for Site Design

Creating educational environments and activities within a 3D virtual world necessitates the exploration of new approaches within the field of instructional design—a paradigm shift from the conventions presented by standard models. At this point in history, there is not yet a large