



A Reflection on a Competency-Based Pedagogical Process Using Simulation: Tourism

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Abstract: This manuscript is an instructor's reflection of the use of a simulation-based pedagogical technique to improve instruction. The content was a facility planning, design, and management course in a Tourism program. The results indicate that a simulation-based instructional strategy helps to improve the student's perspective by adding a way of applying the information in the course. The sequencing placement of the simulation does not have a large effect upon the outcomes of the course.

Keywords: Simulation, Planning and Design, Tourism, Instructional Strategy, Pedagogical Method

Introduction

This is a reflection of competency-based approach to the teaching of a Facilities Planning, Design, and Management Course in a Tourism, Leisure Studies, and Event Planning. The instructional base was a behavioral architectural approach. This is a method in which the design philosophy is to develop an environment to implement the specific content of a program. Many times the reverse of this philosophy is to build the facility and then to try to find content that fits the structure. A planning process approach was used instead of a content method. Once the processes are learned they can be applied to any architectural project.

A previous study was conducted on the use of Roller Coaster Tycoon to help in the development of a perspective that would allow students to manage a theme park that they had designed. (Cavins and Groves, 2005) They had to design the park, develop a budget, develop a marketing plan, deal with operations, etc. In the last study, it was determined that this was an effective pedagogical tool because it allowed the student to apply the processes of planning, design, and manage of a facility. In previous semesters, it was difficult to comprehend the entire picture of planning, design, and management and be able to make actual decisions to determine their effect. This simulation approach was very effective with most of the students. There was a small group of students that did not acclimate to the computer and the simulation. This technique was abandoned because of licensing problems with Roller Coaster Tycoon.

In the recent past, this approach was tried again and tested. The same problem existed when the simulation was not used. There was a lack of being able to get the complete concept of planning, design, and management effectively. During the previous study, the sequences of the use of this method seem to have a great difference upon the outcomes. In this study, the primary purpose was to develop an approach to test what is the most effective use of this technique and when. This method is not only related to sequence, but what other content is presented and a way to develop the best instructional presentation related to outcomes.

Methods

The primary purpose of this study was to build on the previous study and find which simulation works the best and how to use it. During the first semester of testing, we identified four potential programs: Roller Coaster Tycoon, SimCity, City Island, and Tropico. (Students were able to select the different version of a program based upon their familiarity with a simulation.) Different students tested these simulations to determine the best one to use in the course. After the semester was completed, the different simulations were evaluated. The primary criteria for selection of the simulation were the outcomes. Of the simulations, the students favored Roller Coaster Tycoon (Classic). The primary reason for selecting this simulation was that the students had a previous familiarity with it from their childhood; the cost was very insignificant and could be purchased by the student, the ease of use, and ability to manipulate the program in relation to one particular design.



The content other than the simulation was lecture to define concepts and principles, field visits to comprehend the application of principles, and a project in their field to apply the learned concepts and principles. There were three sequences tested: 1. Lecture, simulation, field visits, and project; 2. Lecture, field visits, simulation, and project; and 3. Simulation, lecture, field visits, and project. The sequences being tested always ended with the project because it is the final product of the semester. The lecture was in the number one or two positions in the sequence because of the orientation regarding information. The field visits were positioned in sequence two or three because they provide an overall perspective of lessons learned in regard to application. The sequences outlined are the most logical of all the permutations and combinations. The instruments used to assess each sequence were: grade on lecture test, score on roller coaster tycoon rubric, grade on the project and course evaluation. It must also be noted at this point that a competency-based approach was used.

The student had the option of resubmitting materials to receive a grade they desire. This obviously is an aberration that influences the outcomes of the study. Each student was given the opportunity for feedback on their grades and if they wish to resubmit they were provided the opportunity. The overall goal of the course was student outcomes and this competency-based approach helps them to know how to correct assignments. This is a very open system and is opposed by many instructors and administrators. The end competency is the development of skills related to planning, design, and management. If only a cursory test were used, there would be no opportunity for feedback and learning. Counseling sessions were held with the students to inform them of the inadequacy in their assignment.

The study was conducted over four semesters (One semester to determine best simulation to use and three test semesters) and included 158 students.

There were five indicators used in the assessment of each instructional treatment.

There was a test given at the end of the concepts and definitions portion of the course. (The assessment scale was 90% equals A, 80 to 89% equals B, 70 to 79% equals C, 60 to 69% equals D, below a 60% equals F) This was a knowledge test based upon the text used in the course. (This assignment could be repeated upon request.)

The second score that was assessed was a Roller Coaster Tycoon rubric. This was also evaluated on a point system from a student presentation. The presentations were assessed using selected criteria. (See appendix A for the criteria related to points.) The assessment was completed by the instructor and an assistant. (This assignment could be redone upon request.)

Field visits were graded on an attendance basis. If a student was absent he/she had to complete a report.

The project grade was assessed on a point system. This assignment was evaluated using selected criteria. (See appendix B for the criteria related to points.) The assessment was completed by the instructor and an assistant. (This assignment could be redone upon request.)

The course grade was an accumulation of grades during the semester. (There were no redo on this score.)

The course evaluation was a standard University form that used a five-point scale. (One being the low score and five being the best score.)

Student comments were written feedback given with the standard University form. These scores are reflected in positive comments and negative comments, and the numbers associated with these comments.

Results

	Instructional Treatments		
	Lec Sim FV Proj	Lec FV Sim Proj	Sim Lec FV Proj
	Average Scores		
Concepts and Def Grade	A	A-	A-
RCT Score	A-	A-	A
Project Grade	A	A-	A-
Class Grade	A	B+	A-
Course Eval	4.1	4.1	4.1
Student Comm	(16+ 3-)	(10+ 3-)	(11+ 3-)

The results indicate that there was not a significant difference among any of the treatments. The first treatment of lecture, simulation, field visits, and project seem to have a slightly better performance. The comments from the students indicated that the first sequence (1) help them have a better understanding and complete their assignments. There were also comments to the effect that they could better see the relationships among design, planning, and management, which help them in development of their project.

Conclusion

This is a qualitative study and there is evidence that sequencing may be important. It also points to the fact that there could be other sequences that have not been tested. The sequences tested were those that had a common or a logical basis for structure.

Even though there is not a significant difference in the presentations, from the original study. It is quite evident that the adding of the simulation significantly improved course grades from a B to an A-. It also improved the project grades from B to an A. This is a definite improvement with the adding of the simulation. This particular study shows that the sequence of the instructional exercises may not have a significant influence upon the results. Even though, there is

some qualitative evidence to indicate that it does, but there needs to be more investigation to find ways to improve outcomes. Another investigation may be the particular instructional modes and how each is developed. The present mode may not be the most effective. The question here is not one of sequence but one of content in terms of presentation and how that presentation is made.

An interesting issue was, as this study was being completed, there are other simulations that have the potential to be used in developing pedagogical methods: Tour Builders; Video Game Tourist; and Game Tourism. Tour Builders allows the individual with Google Earth to individualize experiences with locations and photographic material. The Video Game Tourist allows the individual to be a part of the game experience as a virtual tourist. Game tourism allows the individual to be a part of games to enjoy the architecture, aesthetics, storytelling, and atmosphere without competition or conflict.

Reference

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Appendix A

Roller Coaster Tycoon Assignment

Each student is to design a theme park using the program Roller Coaster Tycoon. The student should keep a log of their design process including time and changes made with the impacts of the alterations. The student will also provide snapshots of the final Park and productivity reports.

Each student will also be expected to make a brief presentation about their park.

Roller Coaster Tycoon Rubric

Park Design – 20 points

Park Layout – 10 points

Park Theme(s) - 10 points

Amount of Successful/Enjoyable Rides - 5 points

Park Aesthetic – 10 points

Park Operations – 20 points

Well-Balanced Budget – 10 points

Park Cleanliness – 5 points

Ride Wait Times – 5 points

Guest Satisfaction – 5 points

Bonus

Park Facilities – 5 points

Ample number of restrooms/changing rooms – 5 points

Ample number of 'other' activities- 5 points

Total Points Possible – 100

Data

Time

Changes and Impacts

Snap Shots of Park

Report

Appendix B

Project

Comparative Analysis/15 Points

Conduct a comparison analysis to determine the nature of the facilities that exist and the type of Facilities used and needed.

Facility Type (Theory)

Conditions/History

Actors

Time Position/Life Cycle

Role Objectives

Relationships/Competitors

Demand/15 Points

Conduct a mini needs assessment on a selected population and develop a program plan.

Critically evaluate the rationale of your program, based upon the data from the needs assessment:

Needs Assessment/Mission Statement

Segmentation

Base Needs

Audit

Program Statement/15 Points

Develop an evaluation system to critically assess the aesthetics of area and facility design.

Critically evaluate the developed system in terms of inventory analysis (Case study method)

Develop an evaluation system to critically assess the functionality of area and facility design.

Critically evaluate the developed system in terms of inventory analysis (case study method):

Inventory

Environmental/Conditions

Type

Attributes

Impacts/Outcomes

Standards

Codes

Site

Environmental Elements

Potential Based Upon Activity Impact

Feasibility Study/15 Points

Based on the needs assessment, conduct a feasibility study to determine the facilities needed to

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implement the program. Critically evaluate the advantages and disadvantages of each alternative, noting the best alternative with a defensible rationale using:

Integration

Grid

Bubble Diagrams

Rough Drawings

Feasibility Study

Comparisons of Rough Drawings

Advantages and Disadvantages

Financial Comparisons/ 15 Points

Development

Operating Costs

Master Plan/25 Points

Develop a master plan, with graphic displays, to illustrate the alternative selected. A rationale that critically evaluates the alternative should also be presented in a defensible format using:

Graphics

Function

Total Possible Points-100