Using Animation Technology in Teaching Social Justice to Collegiate Agriculture Students

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Session Goal

- To discuss the process used and findings when moving students from text to animation

Course Overview

- ## AGR 201 "Communicating Across Cultures"
  - Overall goal: To increase diversity consciousness and intercultural sensitivity by discussing critical dimensions of inequality in a balanced way in order to open up the learning experience for all students.
  - To encourage explorations into the nature and importance of empowerment and cultural maintenance

Course Description

- ## AGR 201 "Communicating Across Cultures"

  - College of Agriculture's diversity/social justice course - fulfills the college's 3 credit hour Multicultural Understanding Requirement

  - Initially offered in Spring 2007/face-to-face

  - Currently offered online/face-to-face fall/spring/summer

  - Enrolls approximately 70% of agriculture students from 11 academic departments

Course Components

- AGR 201"Communicating Across Cultures" students:

  – 2 (50) minute Lectures/discussions (e.g., race, gender/ sexual orientation, disabilities, spiritual orientation, socioeconomic status, and etc). Average enrollment – 150/semester

  – 1 (110) minute recitation labs (25-30 students)

  – Cultural Immersion Project/Service-Learning

Learning Outcomes

- ***Examine*** one's beliefs, values and assumptions regarding cultural differences and social group memberships and experiences

- ***Define*** the basics of culture

- ***Describe*** the categories of discrimination and their effects, including but not limited to gender, racism, sexism, heterosexism, classism, social stratification, and disabilities.

- ***Examine*** cultural differences in verbal and nonverbal communication within multicultural interactions and settings.

- ***Analyze*** differences in power and privilege related to social identity groups, i.e., but not limited to, race, gender, ethnicity, nationality, age, language, citizenship, religion, class, sexual orientation, or physical ability.

Course Content

- Seeks to present critical social issues e.g., gender, race/ethnicity, class, sexual identity, and other multicultural categories as sources of social stratification and dimensions of analysis that speaks to all of us, rather than concepts reserved only for discussion of disadvantaged groups (Higginbotham, 1990)

The Use of Innovative Technologies

- Student resistance to cultural diversity courses has been well-documented in the literature (Ahlquist, 1992; Asada, Swank, & Goldey, 2003; Cockrell, Placier, Cockrell, & Middleton, 1998)

- Active learning strategies have been found to increase positive attitudes in students and improve student learning (Macklem, 2015).

The Use of Innovative Technologies

- The use of computer enhancement in learning has been found to have numerous positive effects including:

  - increased understanding

  - deeper learning

  - greater levels of interest by the students

  (El-Wazir, Hosny, and Farouk, 2011)

Purpose

- Teaching a diversity and social justice course to agriculture students comes with its challenges.

- As instructors, we constantly look for new techniques in increasing student receptivity and engagement.

- The purpose of this study was to investigate the impact of adding audio and visual materials to a previously text-based activity.

Project Noah

- **Underlying cultural values**
  - To introduce participants to consensus building while at the same time demonstrating the value of diversity.
  - To highlight that values (often related to culture) are an influential factor in any consensus building effort.
  - To demonstrate that negotiating values in conflict can be one of the most challenging, frustrating, and rewarding aspects of work relationships.

Project Noah

- Activity:

  - Students are given the following scenario:

  A meteor twice the size of the moon is on a collision course with Earth. Impact is expected in approximately 86 hours. Scientists predict that millions of people and life forms will be killed on impact, but that the majority of life on the planet will perish in the months and years following the collision due to the enormous dust cloud that will be kicked up by the meteor, blocking the sun's light and contaminating the atmosphere.

  Five years after the collision, scientists believe that Earth will be inhabitable again, but not before the entire human race has been obliterated.

  The governments of the world have decided to build **a space station that will be able to support no more than three people** for the five years while Earth is uninhabitable. It is hoped that these three people will return to Earth and begin to build a new civilization. Most notably, **procreation is not a concern** as scientists have developed technology which will allow everyone to procreate.

  You have been chosen to serve on the prestigious International Selection Committee. **Your role is to select three candidates from the twelve finalists to participate in Project Noah**.

Methods

- <u>Control Group</u>: Students were given character biographies in text form.

- <u>Treatment group</u>: Students watched character biographies in animation form.

- Students in both groups completed a Qualtrics survey about which 3 characters they chose and questions about the medium (text or animation)
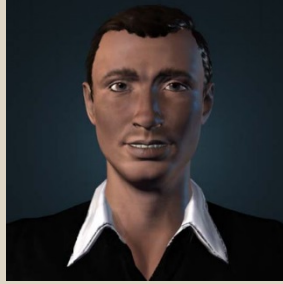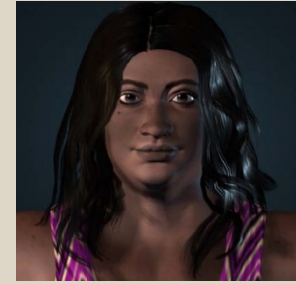
Characters

Ag Specialist

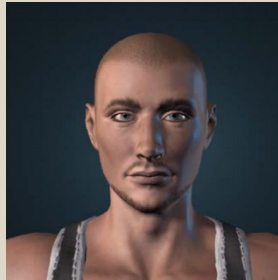Thai Baby

Colombian Priest

Ghanaian Surgeon

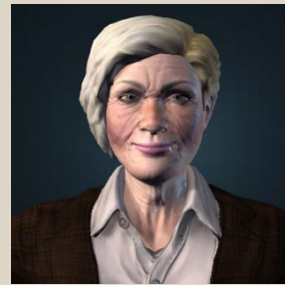Kiribatian Woman

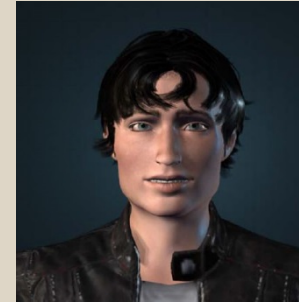Zimbabwean Philosopher

Egyptian Grandmother

French Athlete

Electronics Genius

German History Professor

Israeli General

Spanish Musician

- Animations:

http://envision.purdue.edu/AGR201/FullSequence_720V2.mov

Examples of text descriptions:

- An 18 year-old gay electronics genius. By six, he had already built his own television set. By nine, he had built three personal computers from scratch. He has plans to build a telephone, a car and to improve on the radio he constructed three years ago.

- A 30 year-old female doctor from Ghana. She is the most highly acclaimed surgeon and medical mind in the world. She is responsible for cutting-edge medical research and is known for her creativity and high tolerance for stress. She is a mother of two children and relies on a wheel chair for mobility

- An 80 year-old grandmother from Egypt who dedicated her life to raising six children. She is highly respected in her village as the holder of great wisdom and soft understanding. She is healthy and doctors believe she will live for at least another fifteen years.

Research Questions

1. Is there an association between the treatment (text or animation) and the characters that get chosen?

2. Do students feel the content provided adequate description of the characters?

3. Do students feel their opinions of the characters were affected by the medium by which they learned about the characters?

Data Analysis

- RQ1: Chi Square test using SPSS for each of the characters and treatment compared with control

- RQs 2 & 3: Tested results for normality in SPSS using Q-Q Plot. Used t-test to compare means between groups. N=91.
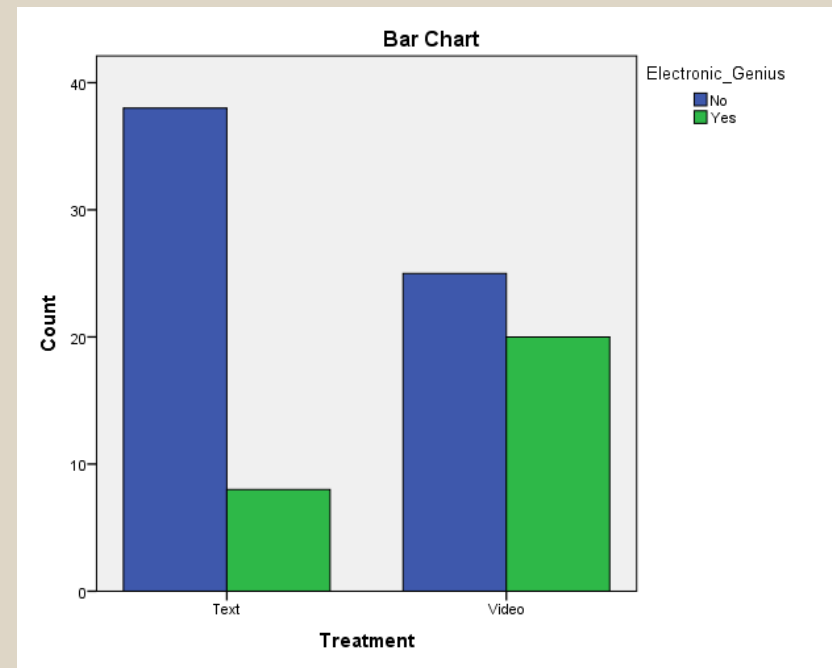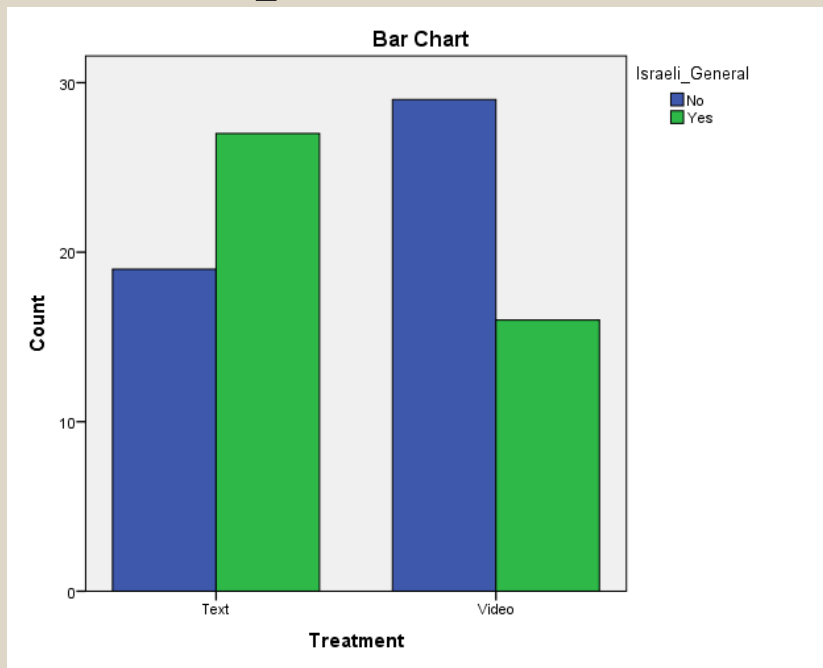
Hypothesis 1

- H_0: There is no association between treatment and character chosen.

- H_1: There is an association between treatment and character chosen.

Results

- Failed to reject the null for all characters except two:

Israeli General: p=0.027. Chosen by more people in the control group.

Electronics Genius: p=0.005. Chosen by more people in the animation group.

Hypothesis 2

- H_0: There is no statistical difference between the two treatment groups: text and animation as to whether they felt the content provided an adequate description of the characters.

- H_1: There is a statistical difference between the two treatment groups: text and animation as to whether they felt the content provided an adequate description of the characters.

Results

- <u>T-test</u>: t(74.9)= -2.565, p=.006 therefore we reject the null.

- Students in the text group (3.83 +/- 1.539) were statistically less likely to say the content provided an adequate description of the characters than those in the video group (4.51 +/- .944).

Hypothesis 3

- H_0: There is no statistical difference between the two treatment groups: text and animation as to whether they felt their opinion of the characters was affected by the medium.

- H_1: There is a statistical difference between the two treatment groups: text and animation as to whether they felt their opinion of the characters was affected by the medium.

Results

- <u>T-test</u>: t(89)=4.564, p=.000

- Students in the text group (4.43+/- 1.544) were statistically more likely to say their own opinions of the characters were affected by the text representations of the characters than the students in the animation group (2.98 +/- 1.5) were to say their opinion of the characters were affected by the audio-visual representations of the characters.

Significance

- Character choice was largely unaffected by treatment (2 exceptions).

  - Therefore: we can eliminate "adverse reaction to the animation" as a confounding variable as we use these animated characters to further develop Virtual Reality (VR) technologies in simulations about race, disability, and other topics of social justice education

Significance

- Compared to students in the animation group, students in the text group felt they were lacking information to guide their decisions, and felt the text representations affected their opinions of the characters more than those who saw animations.

  - Those who had the text representations may have felt their opinions were affected more due to a lack of information.

  - This needs to be explored further.

Future Work

- We collected other data in the survey that may help explain our results. This data will be analyzed.

  - Questions on values that were underlying their decisions

  - Questions on trust of the characters

  - Questions on students' perceptions of the characters personalities and temperaments

Future Work

- Based on our findings, we plan to continue to develop animation and VR technologies to create more immersive experiences for students in diversity and social justice courses.

- We hope this will increase student engagement and decrease resistance.

References

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Questions

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