

3D Printing in a First-Year Engineering Design Project



Andrew Morgan, Kerry Meyers

College of STEM - First Year Engineering Youngstown State University Youngstown, Ohio, USA

Brett Conner

Department of Mechanical and Industrial Engineering Youngstown State University Youngstown, Ohio, USA

Objectives and Goals

- Is the use of 3D printing technologies in a First-Year Engineering design project interesting to students?
- Is the use of 3D printing deemed relevant from a student's perspective?

Fall Semester



3) Two Design Projects

MakerBot

2015-2016

Flying Disc Design 1

Survey 2:

Flying Disc Design

Flying Disc Project

Survey 3

Honors' Students Only 3D print

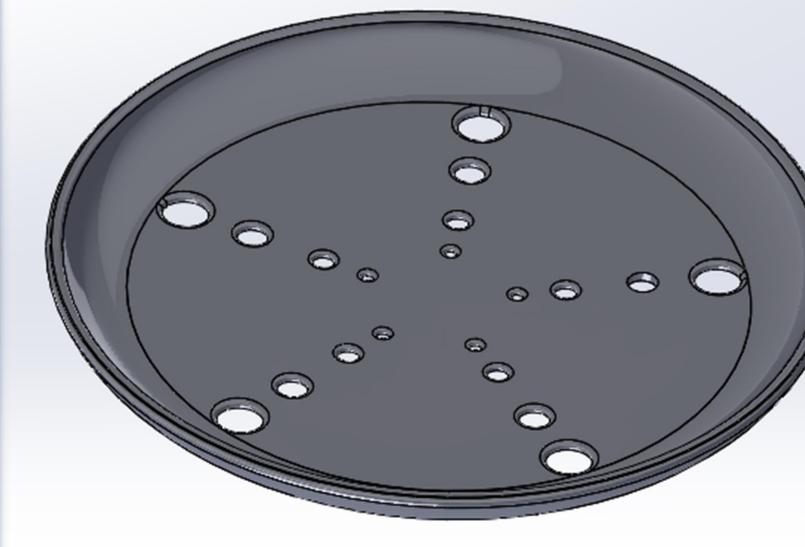
Flying Disc Design 2

Study Overview

- One class of FYE (Honors) students took part in a year long study. Four other classes were evaluated for baseline data.
- Three Surveys were given (1 first semester; 2 second semester)

Spring Semester





Assessment of Student Experience

Survey 1: After 1st 3D Print

Honors' Students Only

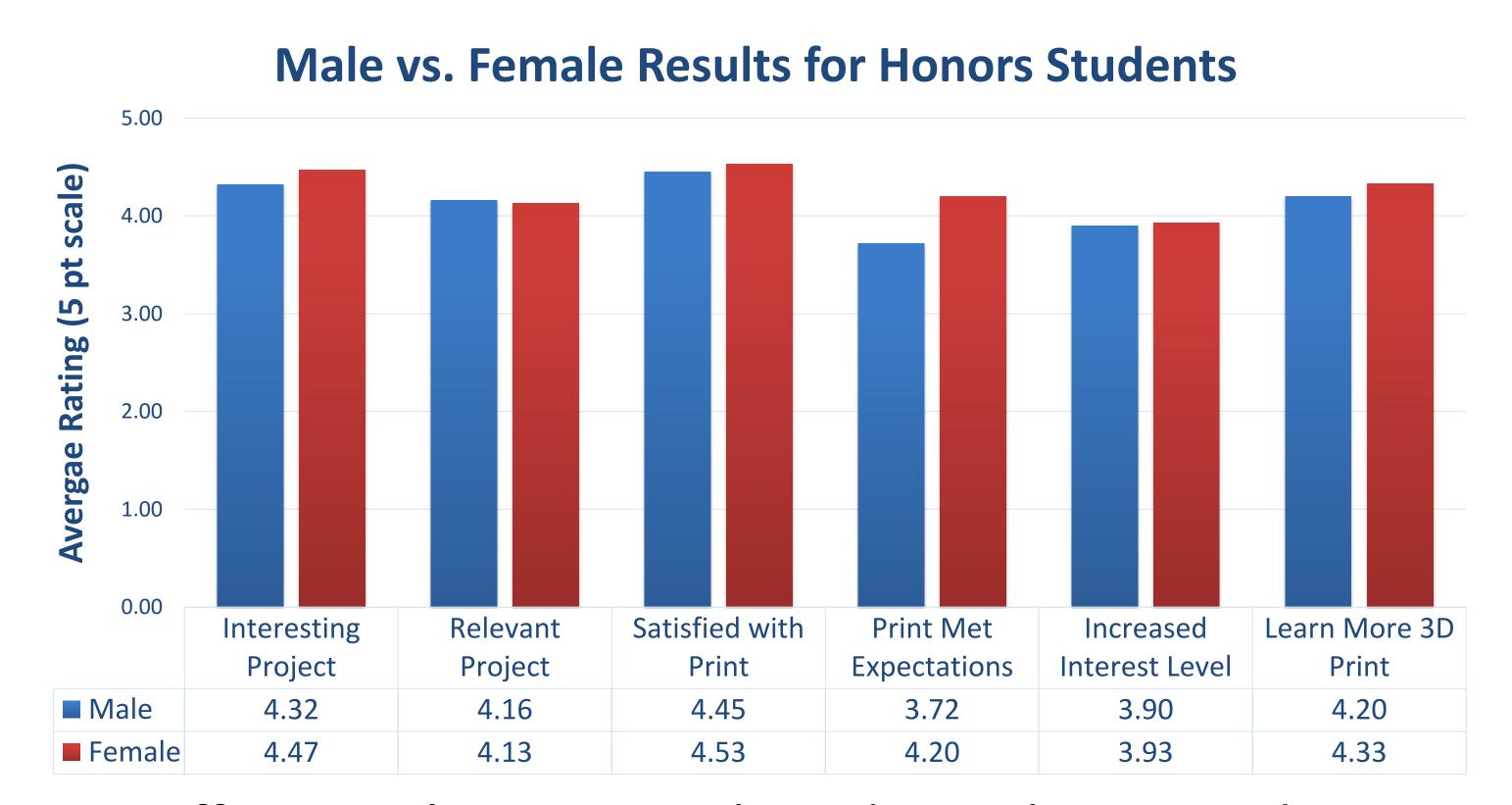
3D Print Exposures

Fall 2015 vs. Spring 2016 Results for Honors **Students**

Recycled Car

Project

- Students enjoyed the project and 3D Printing
- Surveys indicate students want to learn more about 3D Printing



- Differences between Male and Female Respondents were not statistically significant
- Both Male and Female students rated the project highly

