The Effect of Gender on Learning Style and Background Experience with First Year Engineering and Technology Students

Author: Dillan Glock
Advisors: Dr. D. Raj Raman and John Haughery

Objectives

• Compare learning style differences between male and female engineering and technology students.
• Identify how male and female engineering and technology students’ previous involvement in past activities varies.
• Analyze how lecturers can use the knowledge of differences in learning styles to retain female engineering and technology students within their programs.

Methods

• Activities and Accomplishments Inventory was given to each student through Qualtrics, an online surveying program.
• Building Excellence (BE) Survey (Rundle and Dunn) was given to each student.
• Students in the introductory engineering and technology courses, ABE 160 (Systematic Problem Solving and Computer Programming) and TSM 115 (Solving Technology Problems), were asked to complete the surveys.

Results & Discussion

• 22 students total, 17 male students and 5 female students.
• Female students were more involved in all extracurricular activities than males except for athletics.
• Male engineering and technology students were more familiar with mechanical and electrical systems.
• Female engineering and technology students were more familiar with visualization.
• The BE Survey assessed the areas of physiological, psychological, sociological, environmental, perceptual, and emotional preferences.
• The greatest and most notable differences occurred in the areas of emotional and sociological preferences.
• It was not feasible to draw conclusions about trends between male and female engineering and technology students.

Conclusions

• Very difficult to create generalizations between the learning preferences of male and female engineering and technology students.
• The goal of education and teaching engineering and technology students should be to make learning more engaging for all and to incorporate multiple ways of learning into the classroom.

Acknowledgements

The author would like to express her gratitude to John Haughery for mentoring the project and compiling the data, Dr. D. Raj Raman for advising the project, the participating instructors for their willingness to allow her to survey their students, Susan Rundle from Learning Styles for providing and coordinating the BE survey, and the College of Agricultural and Life Sciences Differential Tuition Fund for financial support of the project.

The material presented here is based upon work supported by the University Honors Department and College of Agriculture and Life Sciences Differential Tuition Fund within the Iowa State University Department of Agricultural and Biosystems Engineering. Any opinions, findings, and conclusions or recommendations expressed in this material are those of the authors and do not necessarily reflect the views of ISU, ISU Honors Program, ISU COE, or ISU ABE. This work was done under IRB 15-552.