

2006-323: THE FORMATION OF COOPERATIVE LEARNING TEAMS BASED UPON STUDENT DEMOGRAPHICS

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Abstract

This poster examines the methodology used to form cooperative learning teams for an introductory circuits course at a Historically Black University.

In the 2004 school year, the engineering undergraduate population at Tennessee State University was 88 % African American and 26 % female. **How does cooperative learning team formation and composition change when the teams are at a minority serving institution?**



Introduction

The primary motivation for this work is to increase the retention of minorities and women in engineering by incorporating active and cooperative learning into the classroom environment.

Additionally, a byproduct of this effort will be to teach the student some valuable teamwork skills that they will need as an entry level engineer.



Results

A statistical analysis using SPSS was used to determine if there was any statistical difference in individual and team performance based upon composition. No significant difference at a level of 5% was found for individual student exam grades. However there was a **significant difference at a level of 5% with respect to team assignments and the final course grade.**



Methods

Teams were formed by using

- Felder-Solomon Index of Learning Styles
- Self-Assessment
- Concept Inventory
- Pre-requisite grades
- Classification
- Race
- Gender
- Major



Results

- 63 students in 17 teams over 3 semesters
- Typically a minimum of 2 women or TSU minorities per team of 3 to 4 students
- All teams had an electrical engineering major
- Most teams had a representative from more than 2 majors
- Only about three teams were racially mixed with African American, Caucasian and/or Asian students
- The majority of the students were juniors



Conclusions

The results indicate that it may not be necessary to have a minimum of two minorities and two females in order to insure team effectiveness but heterogeneous teams are effective.

Although, there was a statistical difference in the team project grades, it was not immediately apparent what factor influenced the difference in performance.

