



Abstract

It is a challenge for instructors of large engineering capstone cohorts to provide adequate mentorship to a large number of teams. To provide each team with the support that they need, we assign a Team Mentor (TM) that meets the team weekly to guide them and to provide support as the project progresses. These mentors can be divided into five distinct groups – the instructors themselves, tenured/tenure-track faculty, non-tenure track (teaching) faculty, graduate student/post-doctoral researchers, and external engineers. Each team member evaluates their TM at the end of each semester of the two-semester project. A total of 2637 individual evaluations across 285 projects in 11 separate capstone cohorts were completed, and that data is presented in this paper. Overall the TMs rate very highly, with minor differences between the TM source groups. The authors have created a training program to help TMs acclimate to the role, and all TMs (even experienced ones) are required to attend. We believe that this training has been beneficial in helping the TMs hit the ground running with their teams, and with feedback and improvement over time, the training has kept evaluations scores high.

Methodology

- 2637 responses from Mechanical and Biomedical Engineering students from eleven different capstone cohorts from 2019-2023 (98% response rate)
- Students ranked their level of agreement with 10 statements on a 4-point scale – Always, Very Often, Sometimes, and Seldom/Never
- Students evaluate their TM at the end of each semester (twice per project)
- TMs divided into 5 distinct groups for comparison

Background and Research Objective

Team Mentor (TM) Background

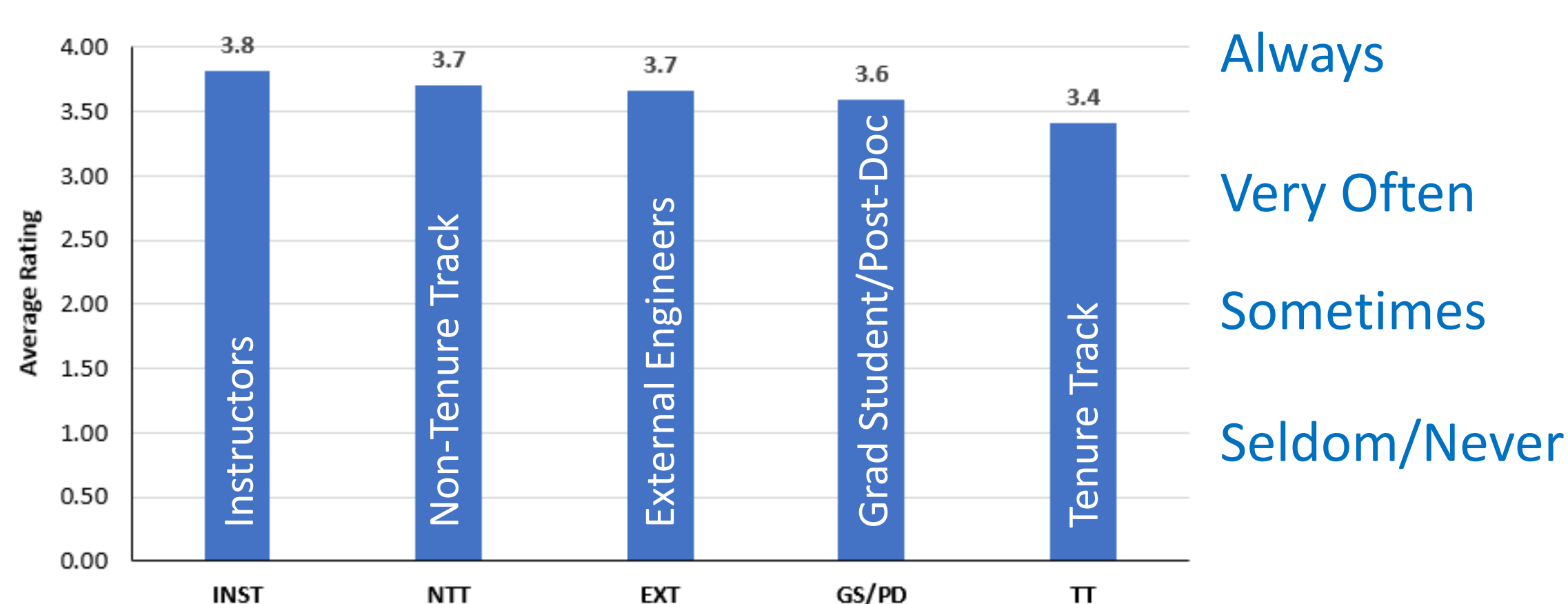
- Recruited by the instructors
- Required to attend a training session led by the instructors to learn the expectations and limitations of the role
- Meets weekly with the team to coach and guide progress
- Reviews major deliverables
- Evaluates the team and each team member 4 times during the project

Research Objective

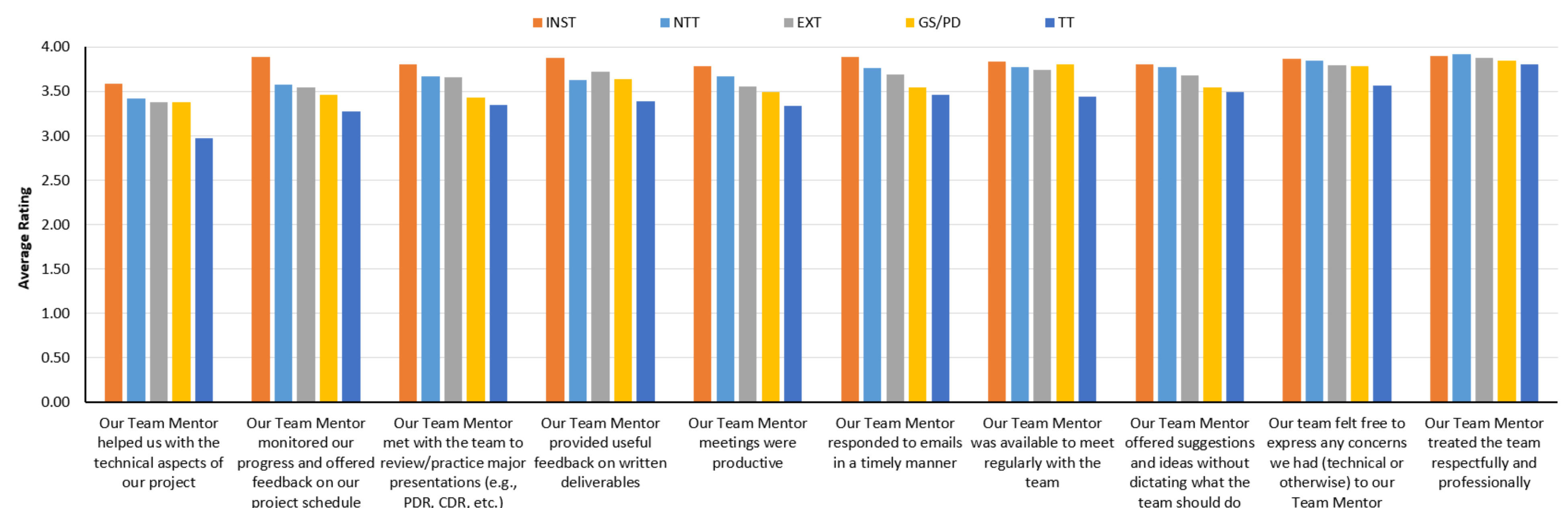
To determine if there were any differences in how TMs from the five groups (instructors, non-tenure track faculty, external engineers, graduate students/post-docs, and tenure-track faculty) worked with their teams

Results

Average Ratings per Group



Average Ratings for Each Question



Conclusions

- TMs are necessary in large capstone classes to provide focused mentoring and improve project success
- Overall evaluations of the TMs are high (3.65 average out of 4), with little variation between groups (3.82 to 3.41)
- Only 5.57% of evaluations were below 3.0, and only 0.6% were below 2.0
- Training is effective, but results of some questions reveal areas for improvement

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