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# Inclusive Classrooms in Economics: Understanding Student Engagement using Mentimeter

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## Motivation

- Student **engagement and inclusion**
- Tracking their **understanding/ performance without ‘answer anxiety’** (Skoyles & Bloxsidge, 2017)
- **Voice to everyone** (Hill & Fielden, 2017)
- Potential **polling fatigue** (Stowell, 2015; Imazeki, 2014; Hayter and Rochelle, 2013)

## Objective and Outcomes

- How do students, who engage with Menti in the first place, perform
- Are these students tenacious
- Explore if there are any gender specific patterns
- **Outcomes:**
  - **Performance** [correct answers/number of questions]
  - **Tenacity** [no of questions attempted/number of questions]

## Key Literature Connections

Three strands of literature directly relevant:

1. **Student Engagement:** SRS like Mentimeter (or similar) improves student engagement, and students enjoy using it; (Mayhew et al., 2020; Elliott, 2003; Graham et al., 2007)
2. **Student Performance:** improve academic attainment or perceived learning (Mayhew et al., 2020); Females perform worse than males in MCQs in timed testing (Walstad & Robson, 1997; Miller et al, 1994)
3. **Equality, Diversity, and Inclusion:** platform for students who would not normally contribute (whether because of gender, confidence, or other reasons) to play an active role in class (Mayhew et al., 2020; Graham et al., 2007; Pichardo et al., 2021; Madiseh et al., 2023)

## Data and Background

- All anonymous data: two 1st year courses (2022-2023 and 2023-2024 for module 1 and only 2022-2023 for module 2) → no pre-requisites
- Two types: timed and un-timed MCQs in small group seminars
- One personal question (optional): on gender identity – 1238 observations after data cleaning
- Does not contribute to summative assessments - only formative work
- Tutor info: 9 different educators, 7 new tutors (Economics Scholars), 1 new lecturer, and 1 module lead
- Module 2 with biweekly seminars and more quantitative in nature in comparison to module 1.

## Main Results

1. Students perform **16-17% worse in timed quizzes** in comparison to untimed ones. They also show 7-8% less tenacity in timed quizzes.
2. Contrary to existing literature, **females do not show worse performance or tenacity** in comparison to their male counterparts in timed quizzes.
3. There are no tutor effect on the performance or tenacity of the female students.
4. Some effects on the timing of the seminars, and number of quantitative questions.

## References

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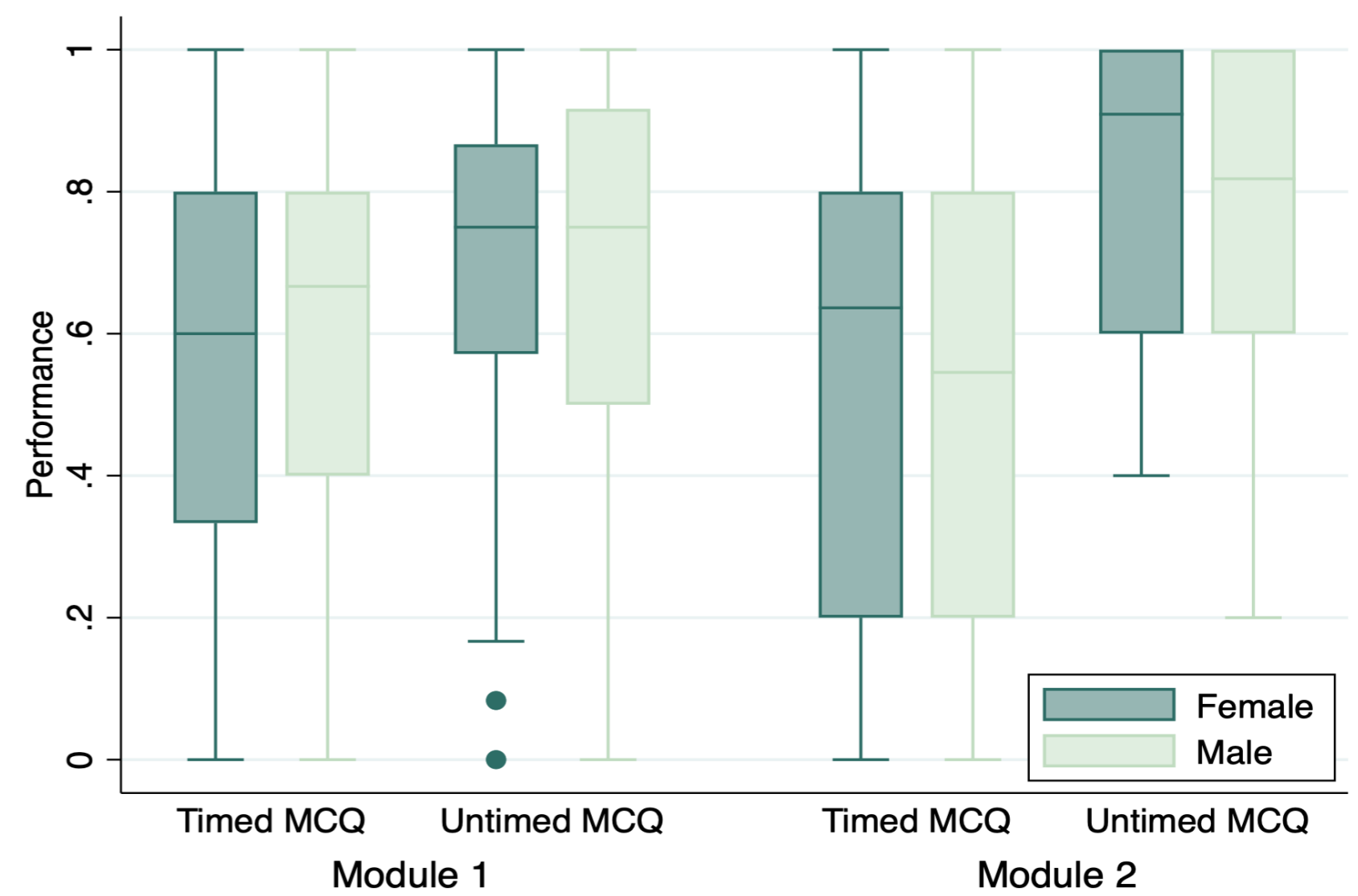


Figure 1: Student performances in both modules over gender and type of quizzes

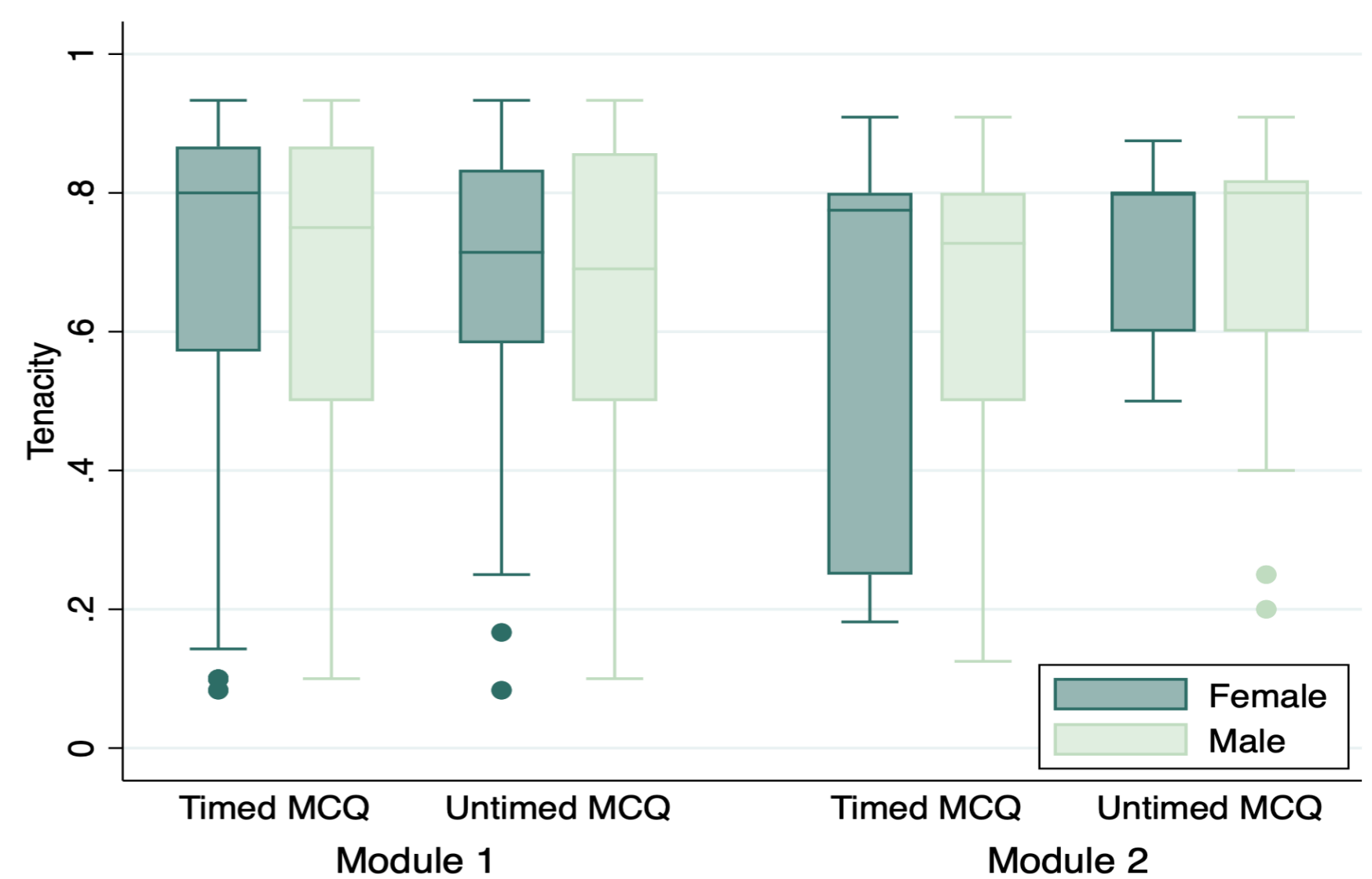


Figure 2: Student tenacity in both modules over gender and type of quizzes

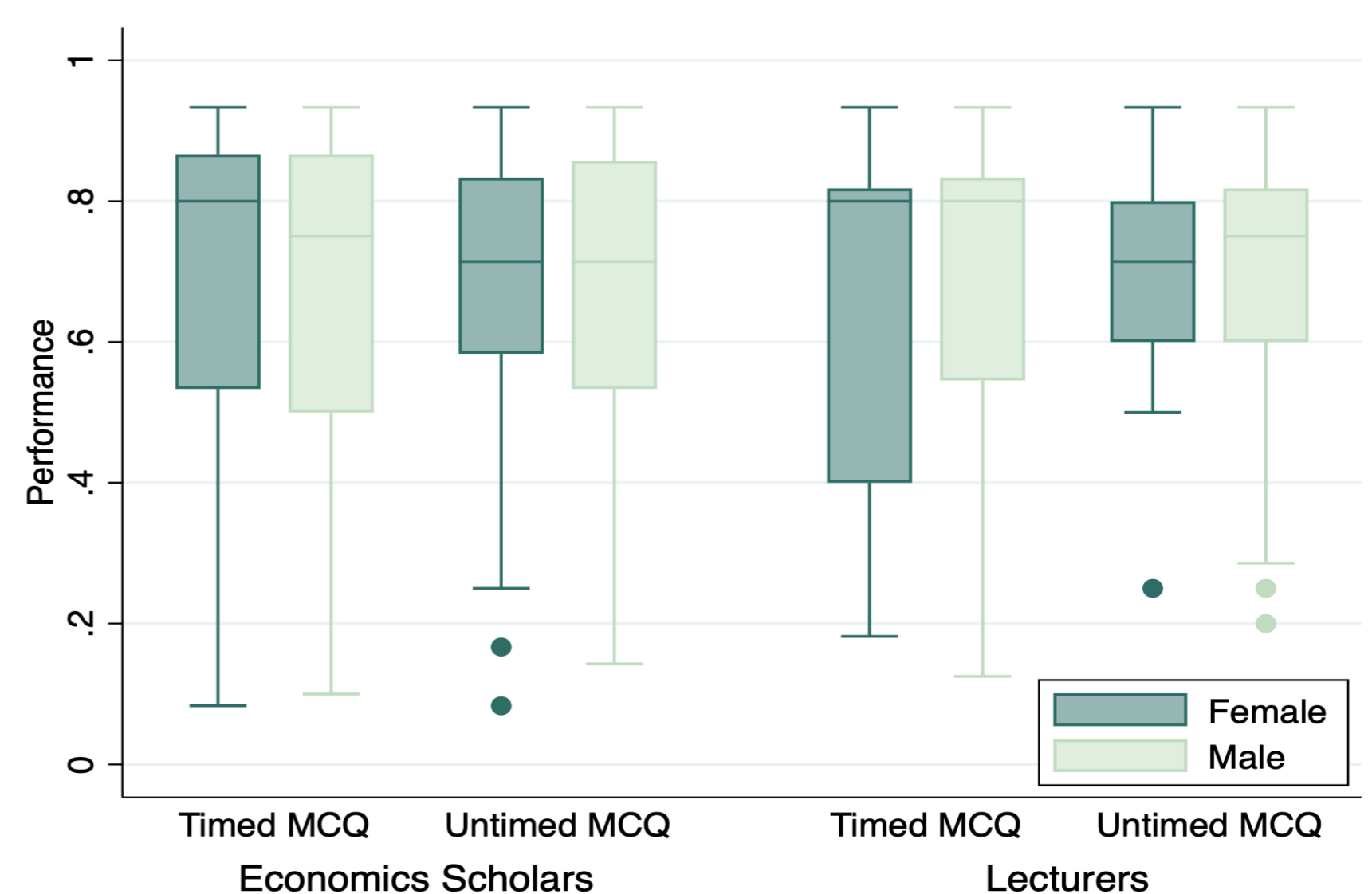


Figure 3: Student performances in both modules over tutor and quiz type