

# Students' Self-regulation of Machine Translation and Generative AI Tools for English for Academic Purposes

Dr Hao Tran & Assoc Prof Peter Crosthwaite  
School of Languages and Cultures, University of Queensland



## Project Overview

### Machine Translation & AI (MTAI) tools

- Widely used in language learning (e.g., Barrot, 2023; Su et al., 2023) and by both native and non-native English speakers (Wang, 2024).
- Support student self-regulation but may lead to over-reliance, hindering authentic skill development (Zirar, 2023).
- Instantly generate academic text across disciplines, posing challenges for English for Academic Purposes (EAP) instruction (e.g., Kim et al., 2024; Kohnke, 2024; Werdiningsih, 2024; Wu, 2023)

MTAI helps reshape how EAP is taught and learned, offering new avenues for learning where traditional support falls short.

## Self-Determination Theory (SDT)

(Deci & Ryan, 2015)

**Autonomy:** A sense of initiative and ownership in one's actions

**Relatedness:** A sense of belonging and connection

**Competence:** A feeling of mastery, a sense that one can succeed and grow.

- Exploring language learning motivation (Al-Hoorie et al., 2022; Lo et al., 2024).
- Developing teacher training programs to increase students' motivation (Alrabai & Alamer, 2024).
- Creating inclusive and diverse AI education (Du & Alm, 2024; Xia et al., 2022).

Lack of studies on the application of SDT in MTAI-supported academic writing

**Research question: How students perceive their autonomy, competence and relatedness in using MTAI tools for academic writing?**



Scan QR code for References and further comments

## Methodology

### 1. Context and Participants

- Phase 1: EAP courses in an urban university in Australia
- Phase 2: EAP courses other universities (e.g. Hong Kong, China and Vietnam)
- Both undergraduate and postgraduate students EAP courses

### 2. Instruments

#### 2.1. SDT survey (on a scale from 1 to 100)

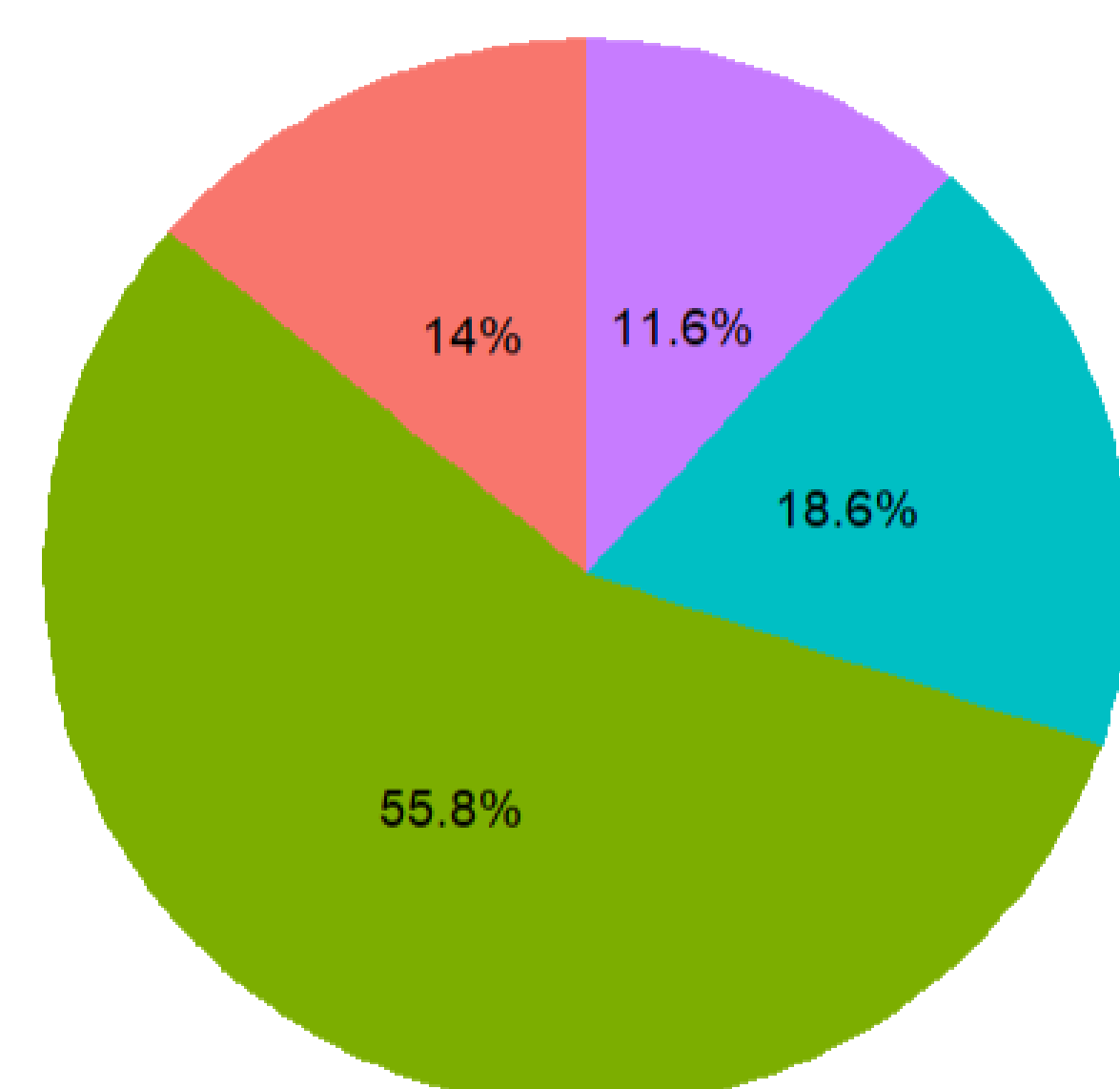
- Demographic information (10 questions);
- Autonomy (9 Qs); Competence (9 Qs), Relatedness (8 Qs)
- Open-ended questions: One each for Sections 2-4.

#### 2.2 Follow-up interviews

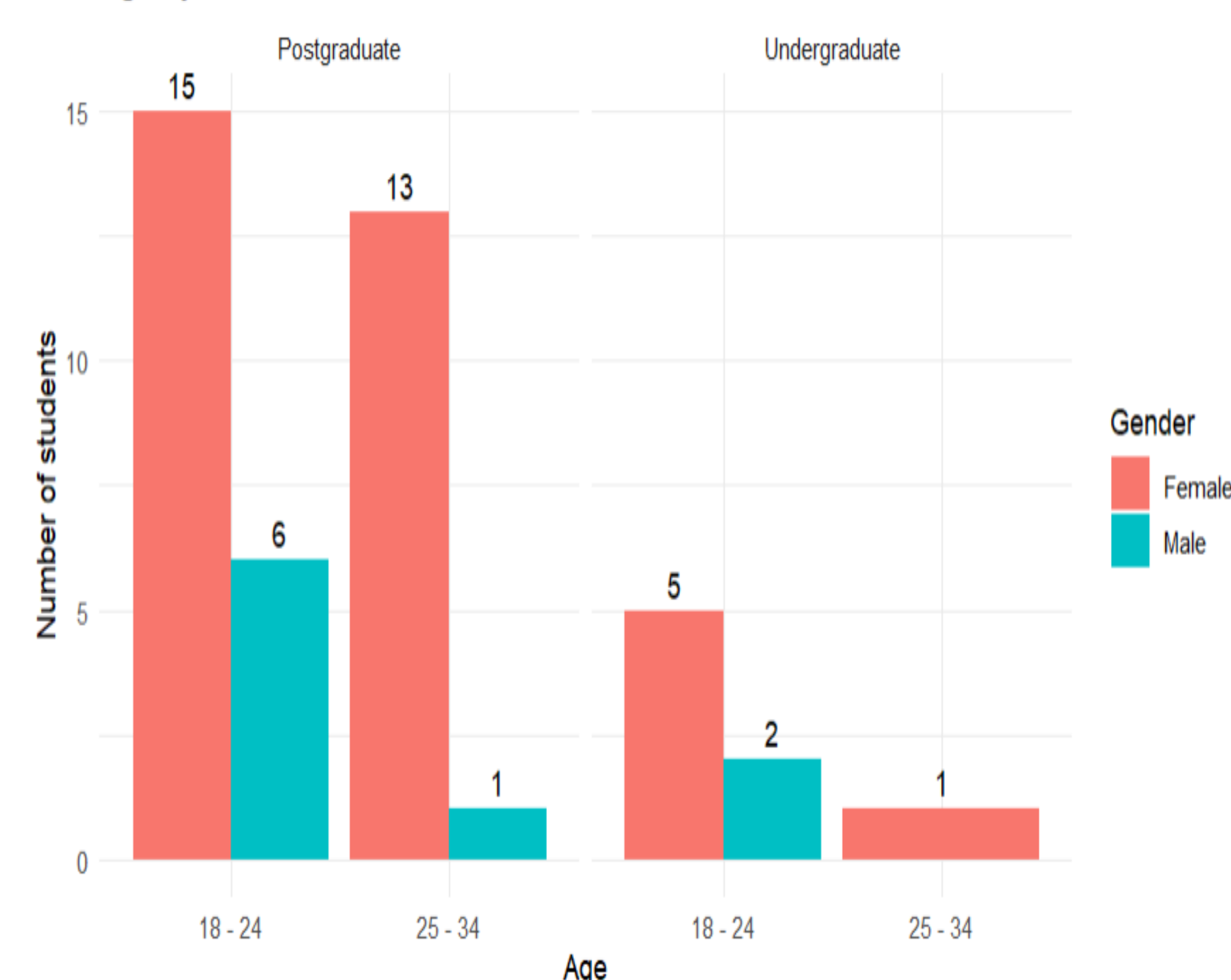
## Preliminary Findings (Ongoing – Phase 1)

- 74% speak Chinese as their first language.
- 93% come from Humanities, Arts and Social Sciences (HASS).
- 56% use MTAI occasionally to write academic essays.

MTAI Usage Frequency

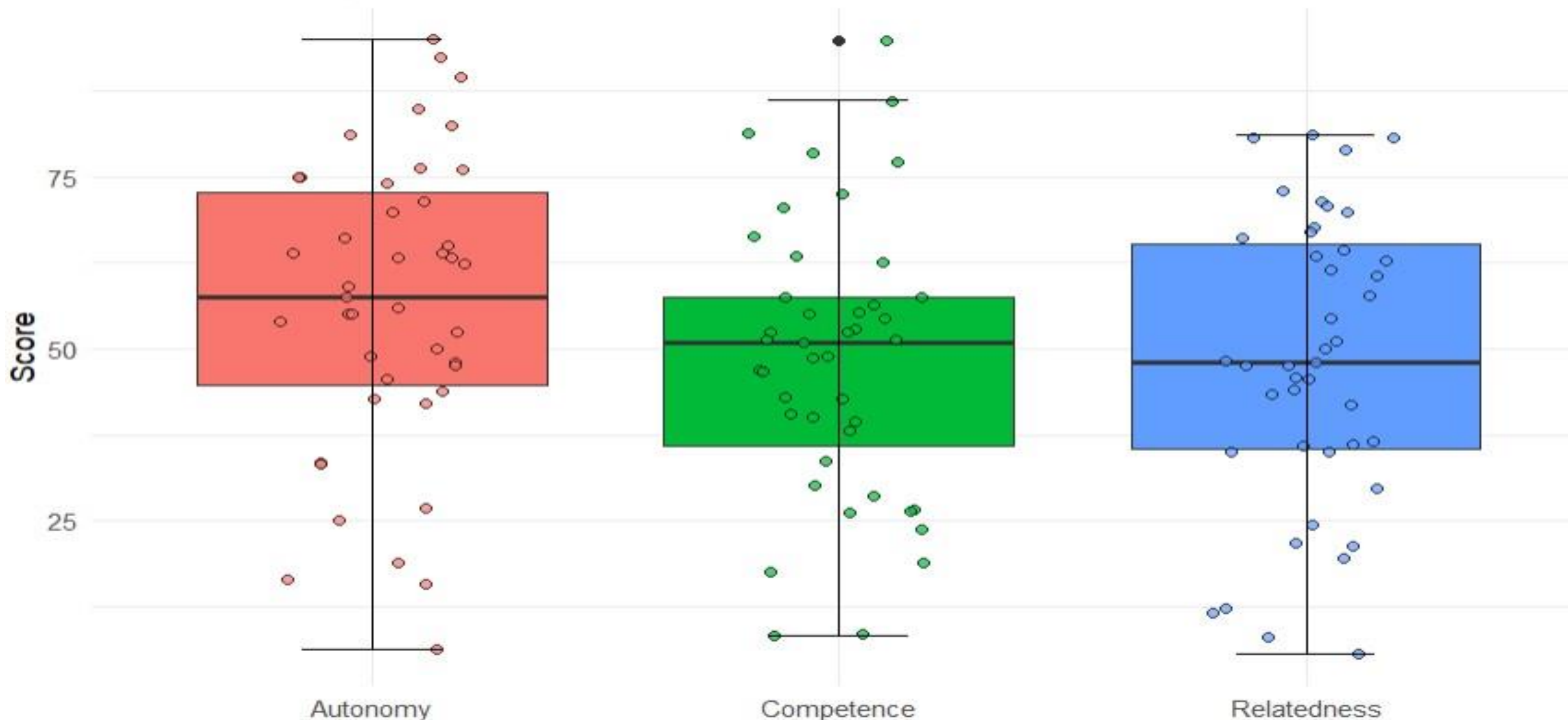


Age by Gender and Education



Usage Legend: Daily (Red), Occasionally (Green), Rarely (Cyan), Weekly (Purple)

Student Perception



- Autonomy** (M = 56.4, SD = 21.6, 95% CI [49.8, 63.0])
- Competence** (M = 48.5, SD = 20.2, 95% CI [42.3, 54.7])
- Relatedness** (M = 48.3, SD = 21.0, 95% CI [41.8, 54.8])

Results show (1) moderate to low levels of these psychological needs and (2) significant variability in students' perceptions of the three constructs.