Exploring Students' Emotions in Educational Assessment: An Empirical Study Using Social Media Data

Supervised by Asst Prof Rasooli Amirhossein and Asst Prof Farhan Ali
Created by Joenathan Halim

NANYANG TECHNOLOGICAL UNIVERSITY SINGAPORE

Abstract

This study examined 17,883 posts from Singapore's "r/SGExams" subreddit to explore the full range of emotions students express about educational assessments. Using control-value theory and an 11-category emotion framework, researchers found anxiety to be most common, with hope, joy, and hopelessness also prevalent. Negative emotions clustered around poor results, while positive emotions co-occurred in confident or satisfied contexts. Hope emerged as a key buffer against negative feelings, and relaxation sometimes helped regulate anxiety—though its effect weakened when boredom was present. The findings highlight the complex interplay of emotions in assessments and point to strategies, such as relaxation techniques, to support students' emotional regulation.

Introduction

The intersection between assessment and student emotions remains under-examined, despite increasing scholarly attention to emotional experiences in education. Existing literature has primarily focused on singular emotions, such as anxiety, in relation to assessment [1], leaving a gap in understanding the broader emotional landscape students navigate during assessment events [2, 3, 4]. This study addresses that gap by empirically examining students' emotional expressions concerning assessment through large-scale data drawn from social media.

Results & Discussion

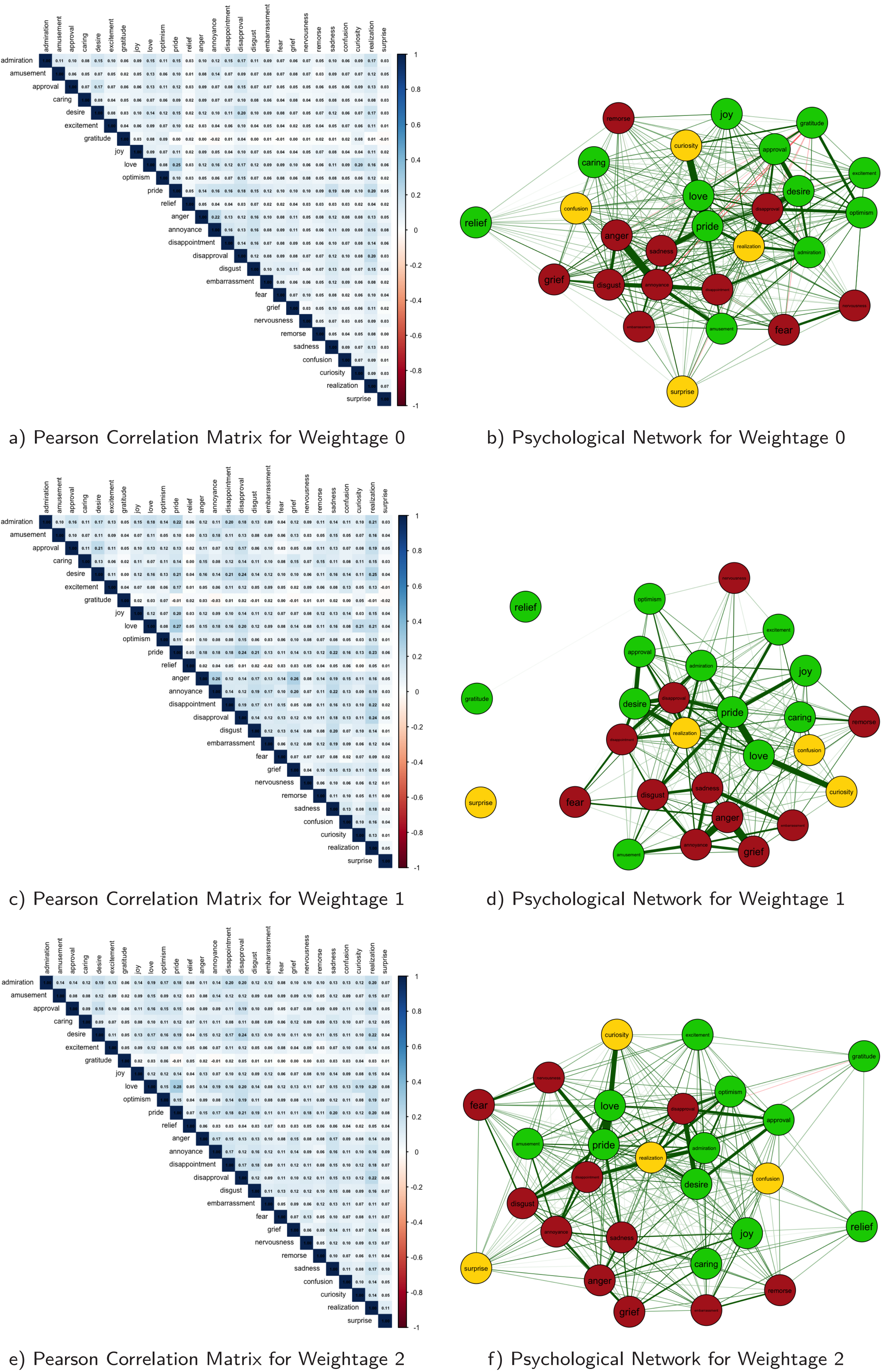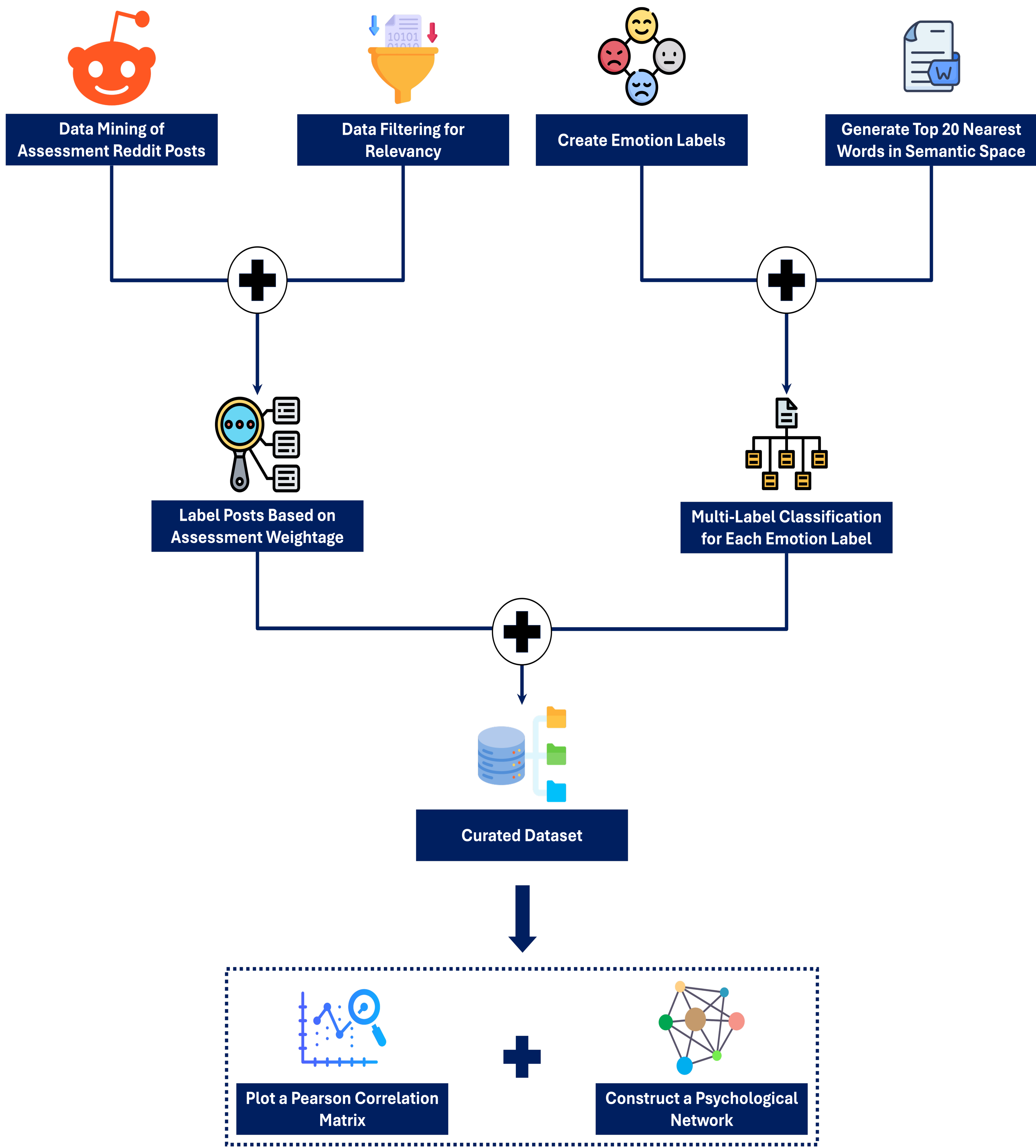Below are the results for each assessment weightage – see Figure 2.

a) Pearson Correlation Matrix for Weightage 0

b) Psychological Network for Weightage 0

c) Pearson Correlation Matrix for Weightage 1

d) Psychological Network for Weightage 1

e) Pearson Correlation Matrix for Weightage 2

f) Psychological Network for Weightage 2

Figure 2: Results for each Assessment Weightage

Our findings have shown that as the assessment stakes got higher, students expressed more negative emotions on the fairness of assessment When the stakes are low, positive emotions are present and negative emotions are strongly connected. As the stakes got higher, negative emotions became more tightly interconnected (realization-disapproval, anger-grief, etc).

Methodology

Figure 1: Pipeline. Data is extracted from Reddit Posts and is filtered using regular expression for relevancy (student discussions on assessment in Singapore's primary and seconadry school). Each post is then labeled according to assessment weightage: **0 (low stakes), 1 (medium stakes), and 2 (high stakes)**.Next, we generated 27 emotion labels along with a word bank using a **GloVe Wiki-Gigaword-300 embedding model** by extracting top 20 words with closest semantic distance to each label. Using the emotion word bank, we classify the data for each emotion label (0,1). Once the dataset is curated, we plotted the **Pearson Correlation Matrix** and constructed a **Network Analysis** using the **bootnet** package in R via **glasso** with **EBIC** for model selection, and laid out using the **Fruchterman-Reingold algorithm** for each assessment weightage categories.

Conclusion

1. Network analysis of Reddit Posts revealed interconnected emotions for different assessment weightages.
2. Different range of emotion indicates different students' perceptions on fairness in assessment
3. Perceived fairness is closely linked to emotional responses, which can impact academic performance and well-being

References

[1] Moshe Zeidner. Test anxiety: The state of the art. 1998.

[2] Junjun Chen and Gavin TL Brown. Chinese secondary school students' conceptions of assessment and achievement emotions: endorsed purposes lead to positive and negative feelings. *Asia Pacific Journal of Education*, 38(1):91–109, 2018.

[3] Jinjing Fang, Gavin TL Brown, and Richard Hamilton. Changes in chinese students' academic emotions after examinations: Pride in success, shame in failure, and self-loathing in comparison. *British Journal of Educational Psychology*, 93(1):245–261, 2023.

[4] Rob Wass, Julie Timmermans, Tony Harland, and Angela McLean. Annoyance and frustration: Emotional responses to being assessed in higher education. *Active Learning in Higher Education*, 21(3):189–201, 2020.