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Noncontent language, tone and sentiment conveyed in biology syllabi

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BACKGROUND

Syllabi are the first documents students receive in a college course and are important sources of information for topics covered, how to contact the instructor, and grading and attendance policies. Besides contact information, syllabi can convey information to the student about classroom environment with the wording used by instructors that does not relate to the course content, a construct referred to as instructor talk. In this study, we examined the content of syllabi for undergraduate biology courses. We aimed to answer three main questions: (1) what are the categories of tone, (2) what are the polarity and subjectivity scores of attendance policies in syllabi? and (3) what are the levels of learning outcomes in courses?

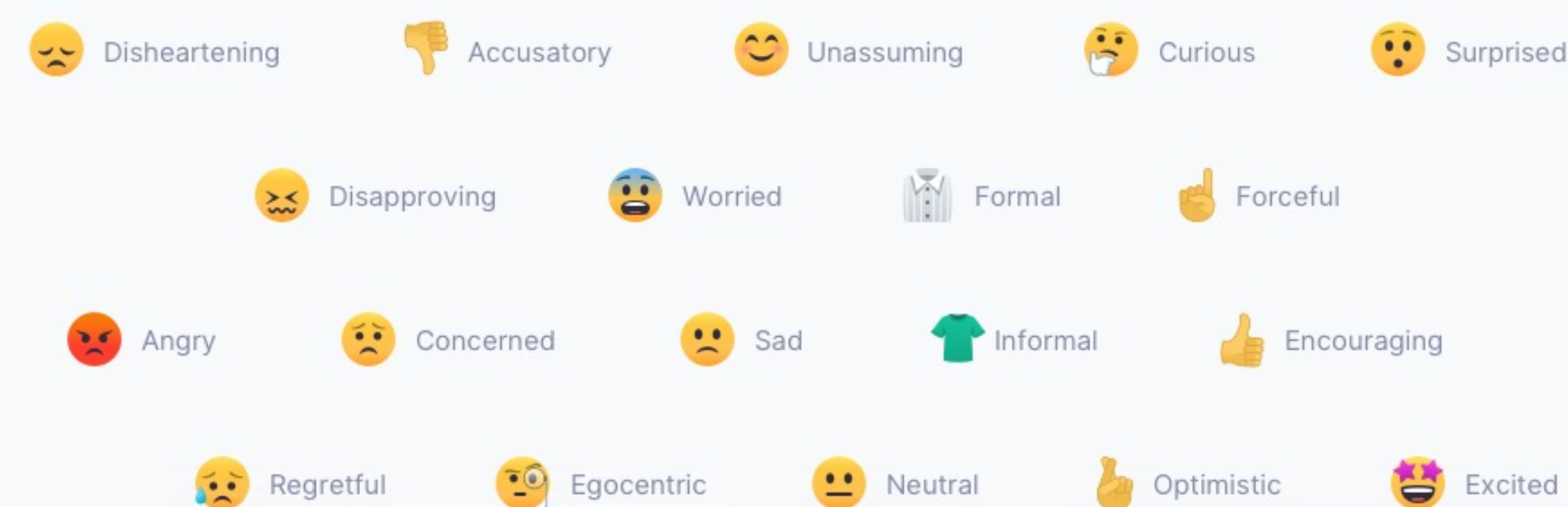
METHODS

- Attendance, grading policy, and learning objectives were extracted from 356 biology course syllabi.
- We used sentiment analysis in Python to assess subjectivity (degree of personal bias) and polarity (+/-) of attendance policies
- The tone of the attendance and grading policy was assessed using the Grammarly tone detection tool.
- For a subset (15) of syllabi, the learning objectives were categorized based on the Bloom's taxonomy levels (1-6: remember, understand, apply, analyze, evaluate, create).



How do you want to sound?

By analyzing your word choice, phrasing, punctuation, and even capitalization, Grammarly's tone checker can identify the tone of your message before you hit send.



CONCLUSIONS

Most courses' attendance policies show weekly positive sentiment.

Learning outcomes were on lower levels of bloom taxonomy (only 15 syllabi).

Attendance and grading policies both had informative tones but differed in types of tones present.

More direct and formal tones were detected in grading than attendance policies.

Sentiment analysis of attendance policies

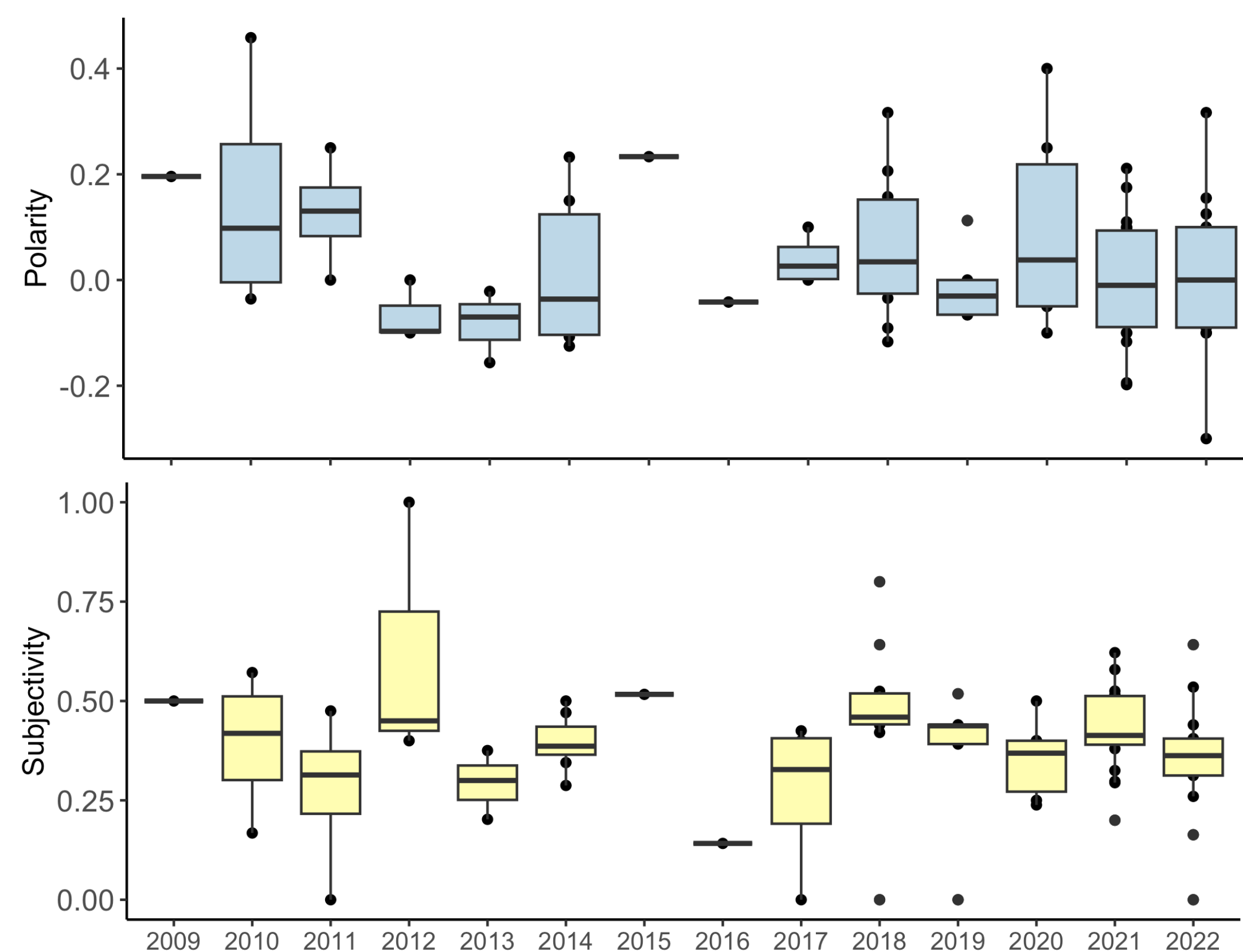


Figure 1. Polarity (top) and subjectivity (bottom) of attendance policies.

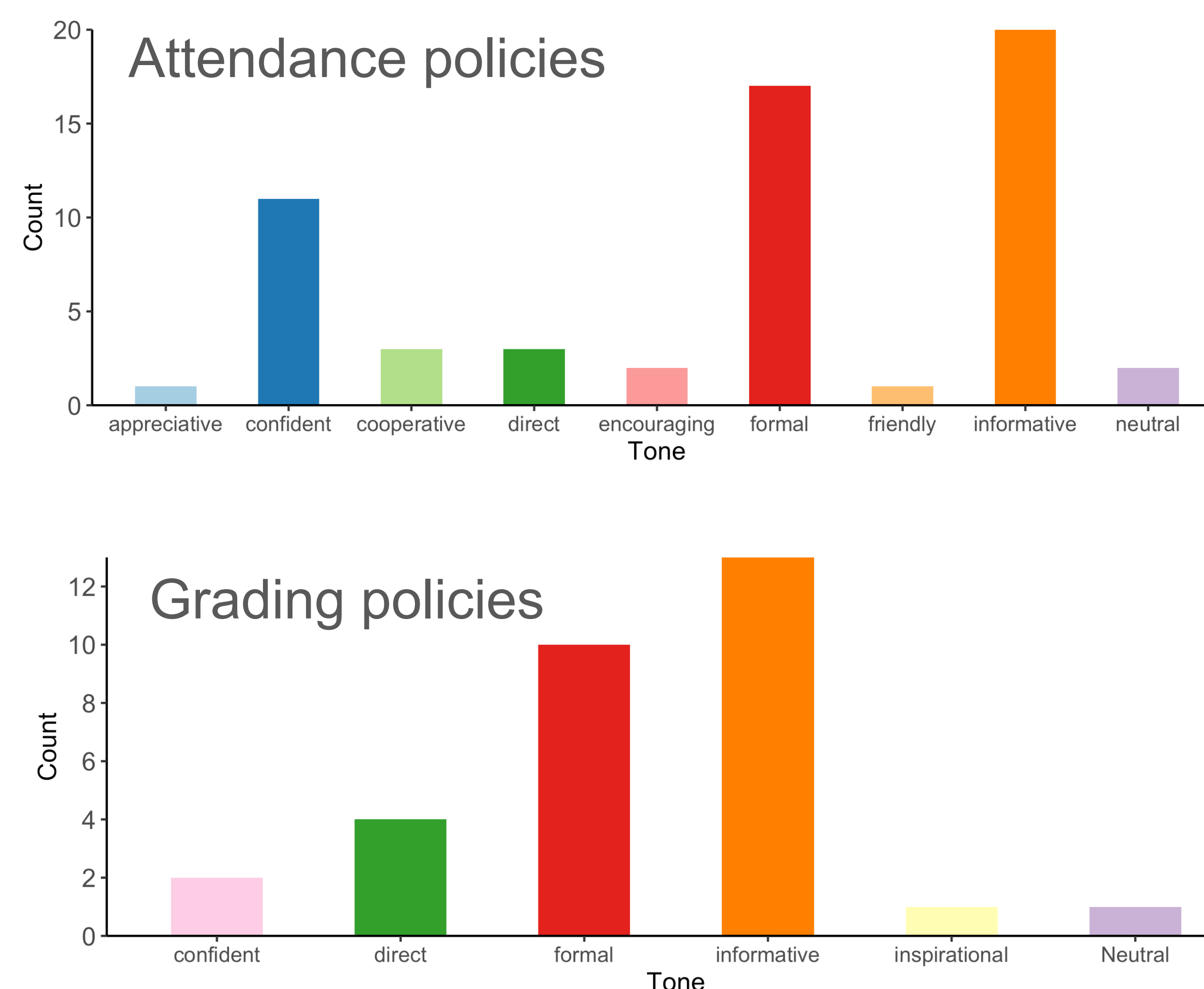


Figure 2. Histogram of tones detected in attendance (top) and grading (bottom) policies in course syllabi.

Course Learning Outcomes (LOs)

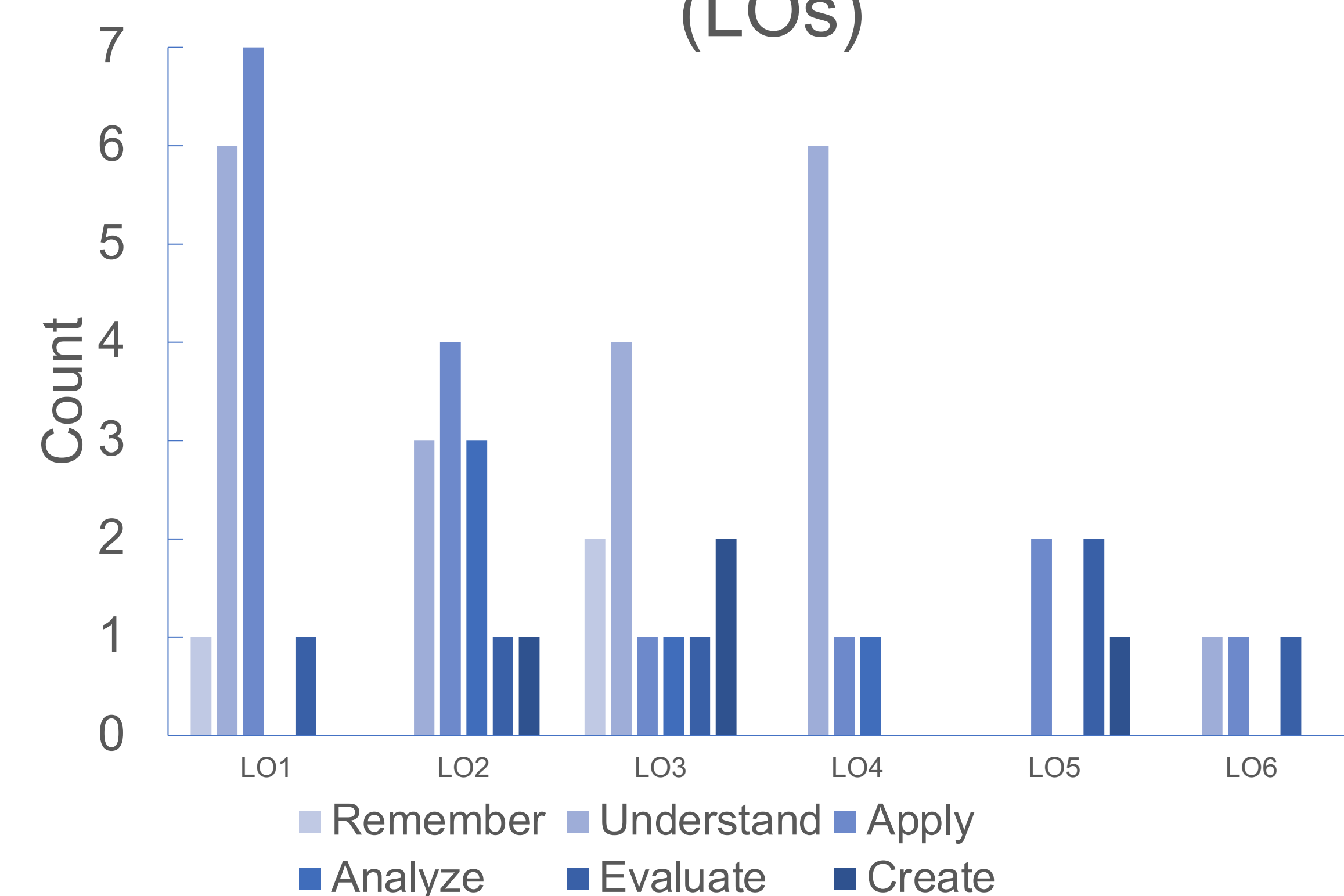


Figure 3. Histogram of learning outcomes (LO) levels found in course syllabi based on Bloom's taxonomy.