

Developing the Right Questions for Assessment

**Analysis of Part 1 of 3rd Professional
Examination (2007-2010)**

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How good are the questions we used to assess our students?

- Ideally:
 - Not far too easy
 - Able to discriminate
 - Smart students get a higher score than the weak students

How good are the questions we used to assess our students?

- Ideally:
 - Not far too easy (Difficulty)
 - Able to discriminate (Discriminating power)
 - Smart students get a higher score than the weak students (Correlation)

Measurement

- Difficulty
= average score (higher value = easier question)
- Discrimination index
= (average score of students at 27%tile – average score of students at lower 27%tile) / 100
>= 0.15 - 0.3 is acceptable or satisfactory

Preparing and Evaluating Essay Test Questions, Technical Bulletin #36,
Evaluation and Examination Services, University of Iowa
Jacobs, L. C. & Chase, C. I. (1992). "Developing and Using Tests
Effectively", Jossey Bass Higher and Adult Education Series

Measurement

- Correlation

= correlation between the score of the question and the score of the written paper

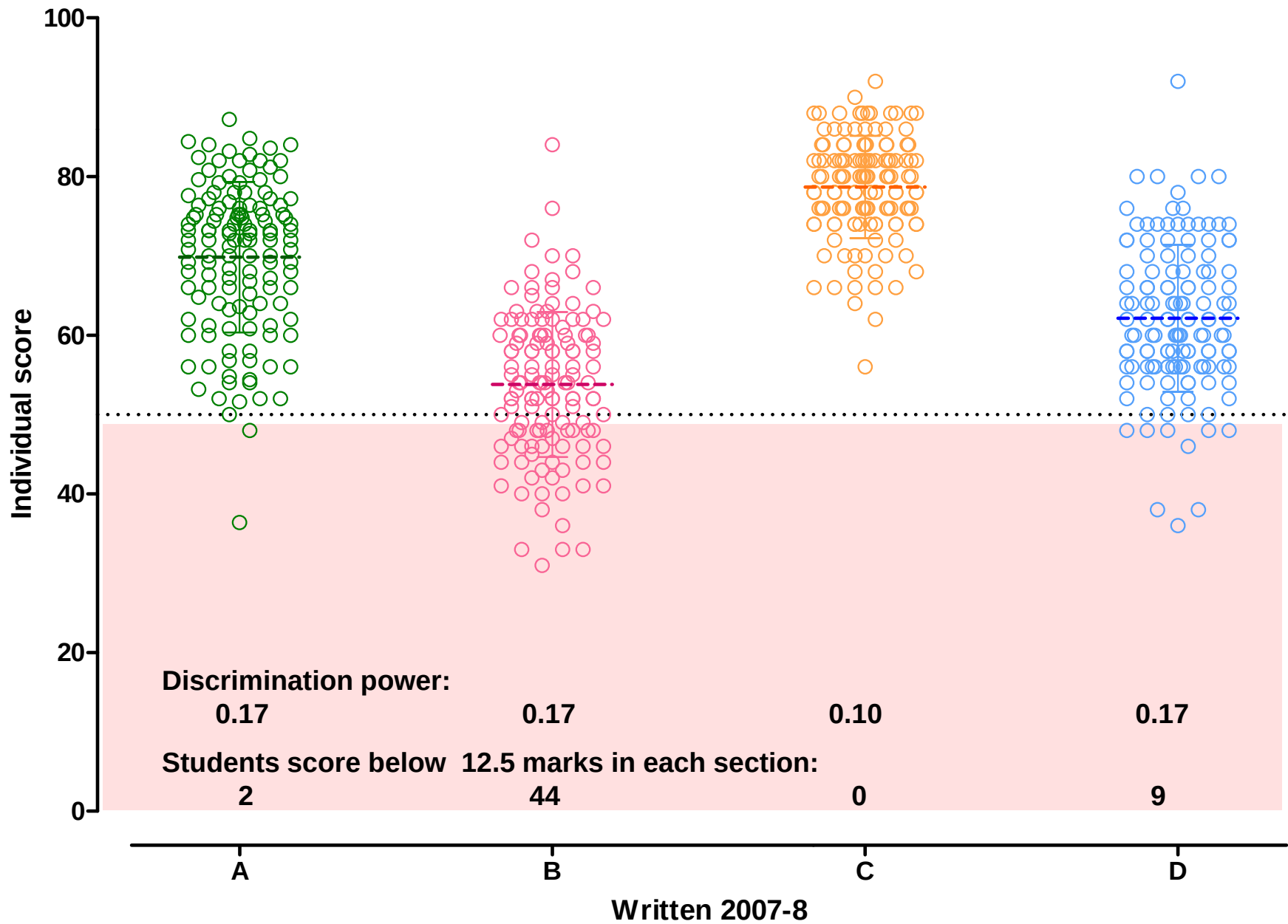
≥ 0.3 : acceptable

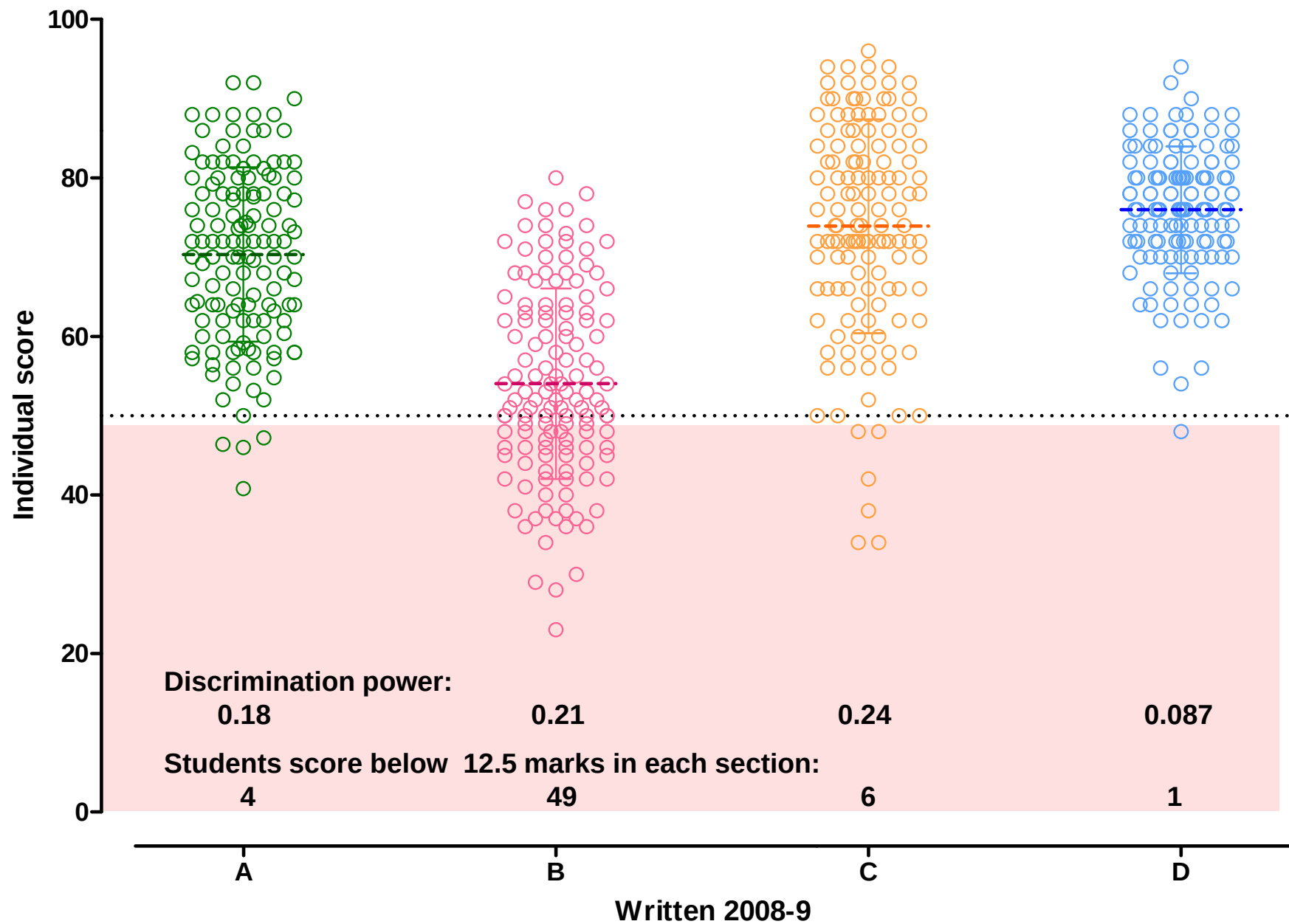
Examination format

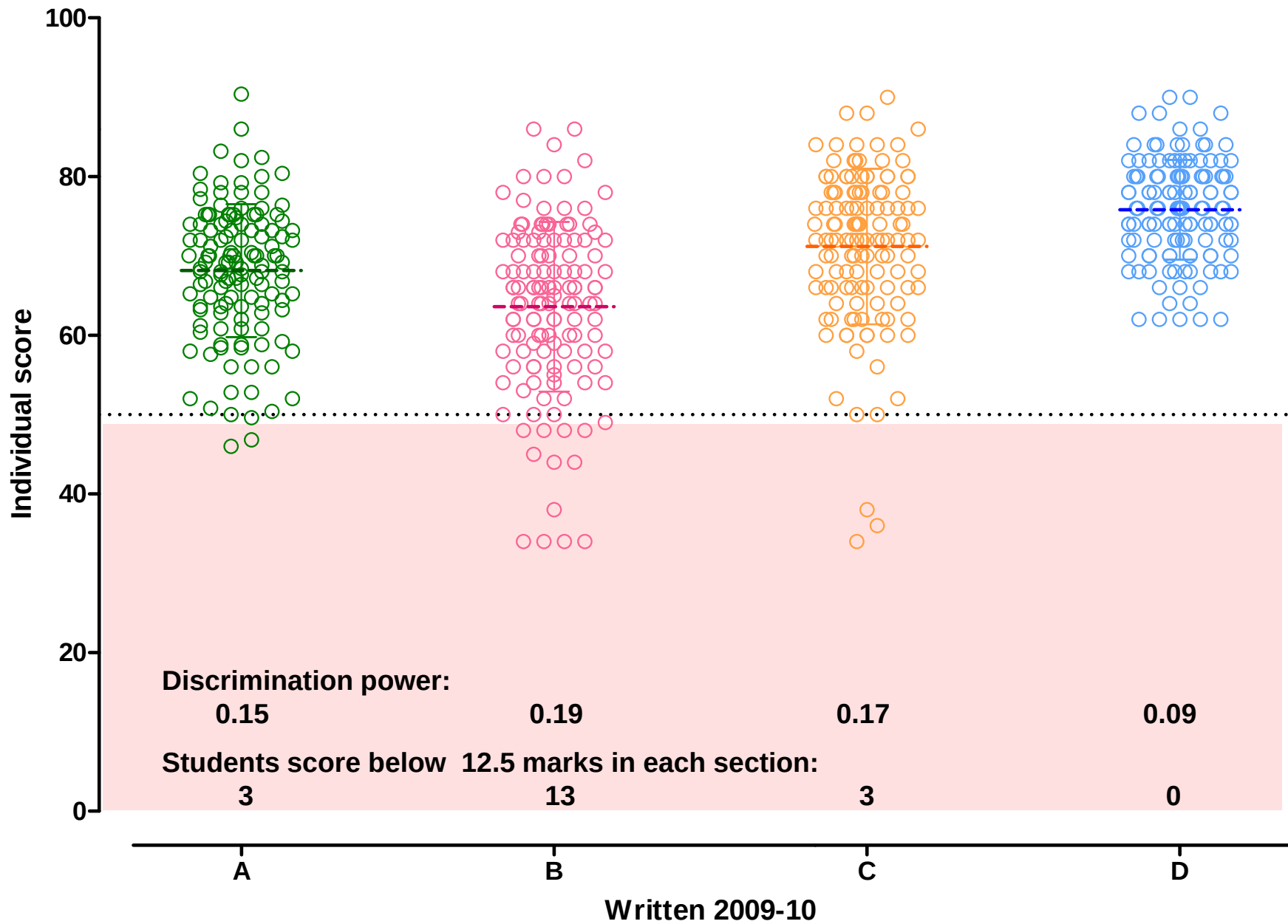
- Written paper:
 - 4 specialties / departments: total 16-18 questions (each section: 25% of marks)
- Combined clinical examination:
 - 2 clinical questions: each student is examined by 2 examiners

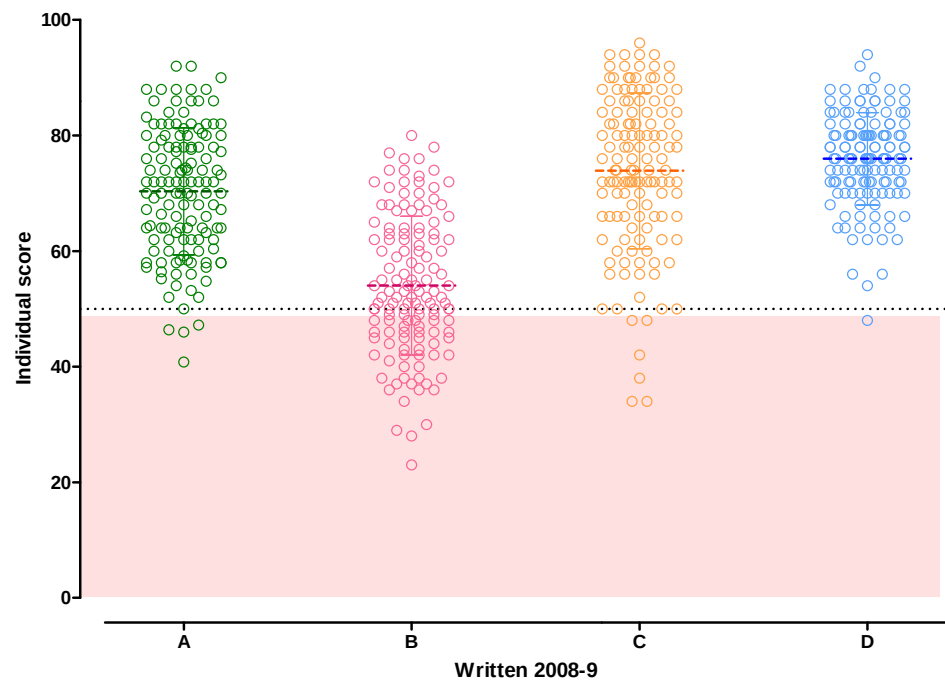
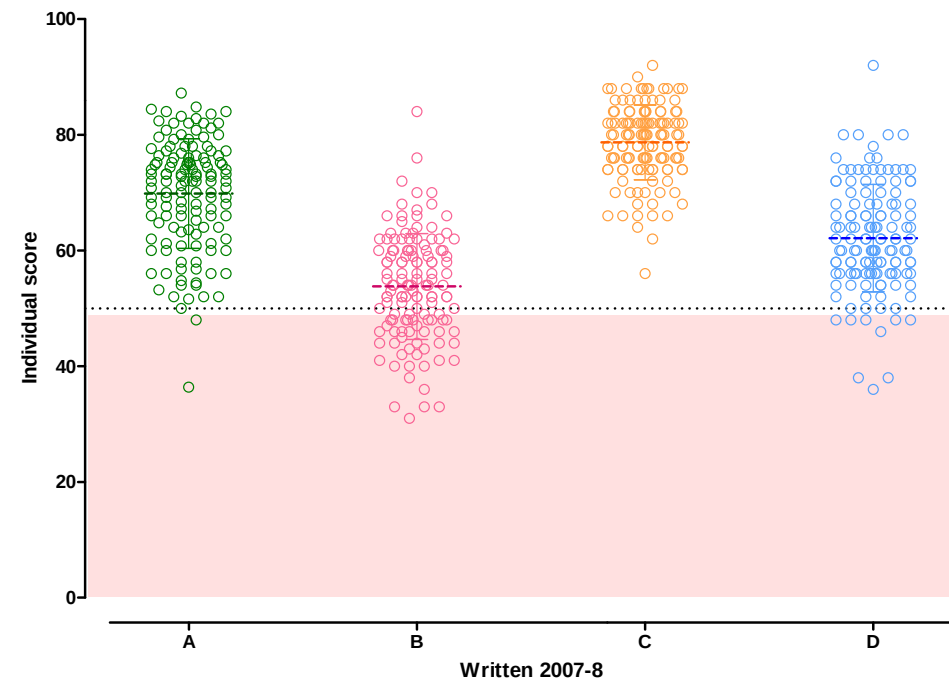
Written paper

Analysis by sections



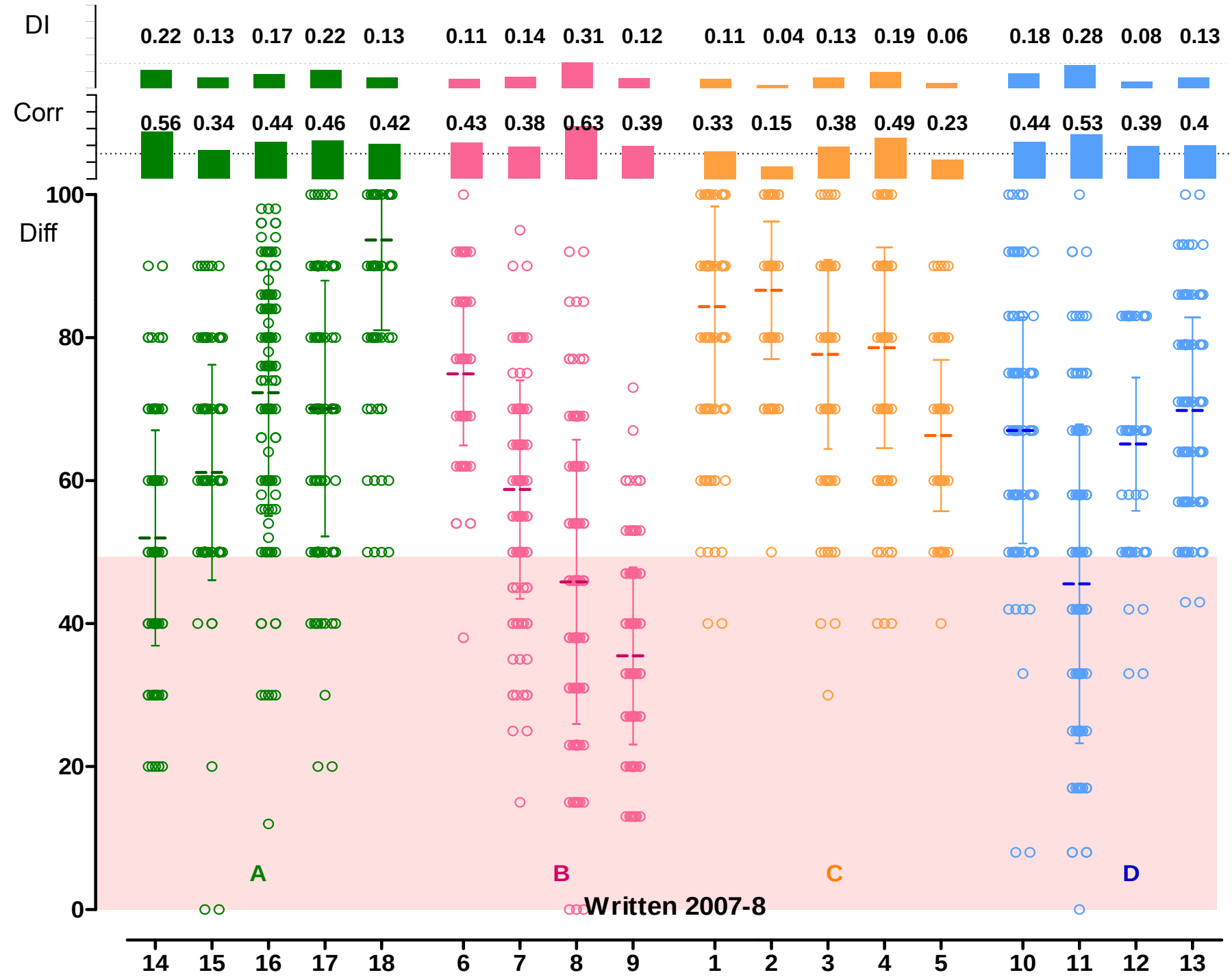


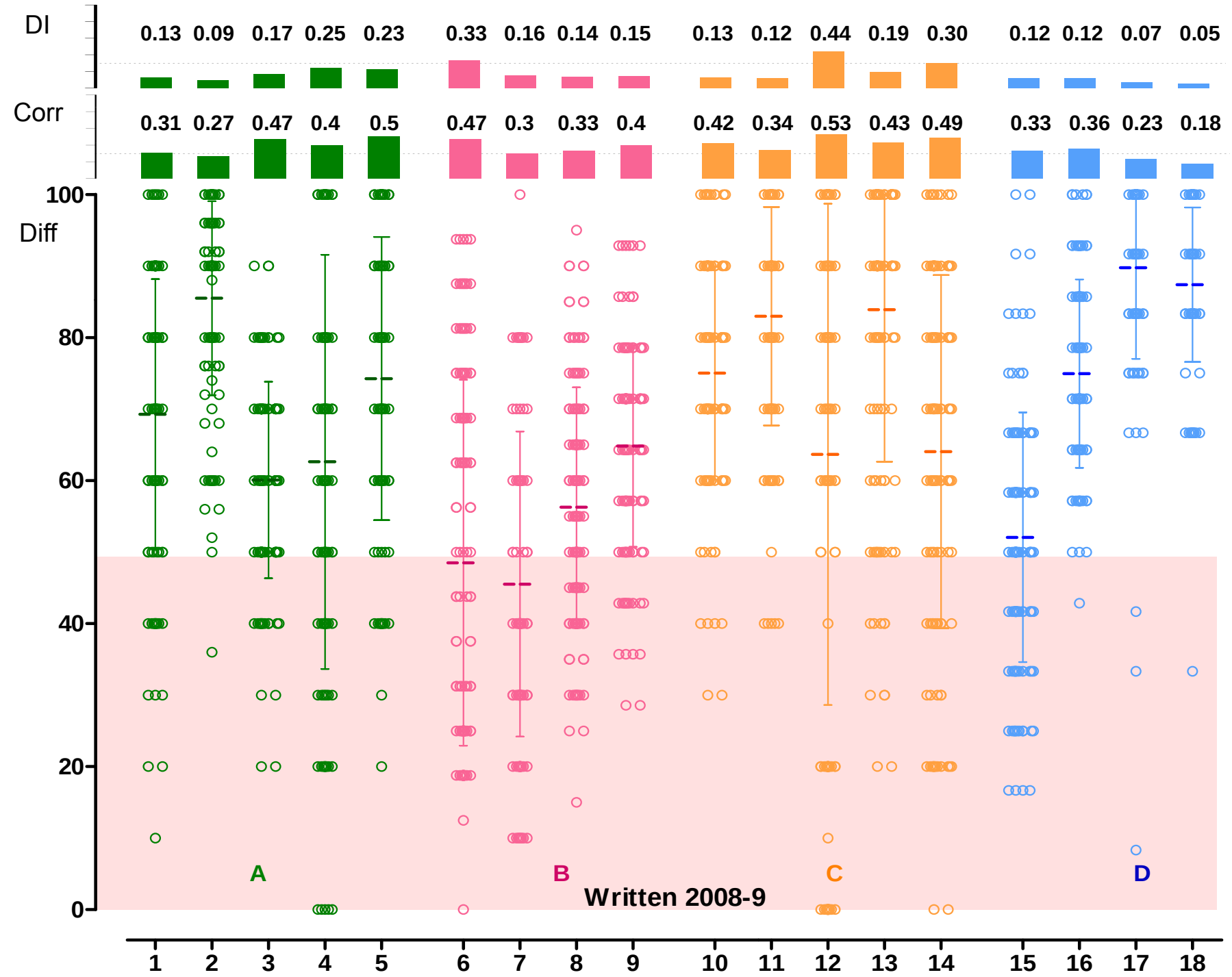


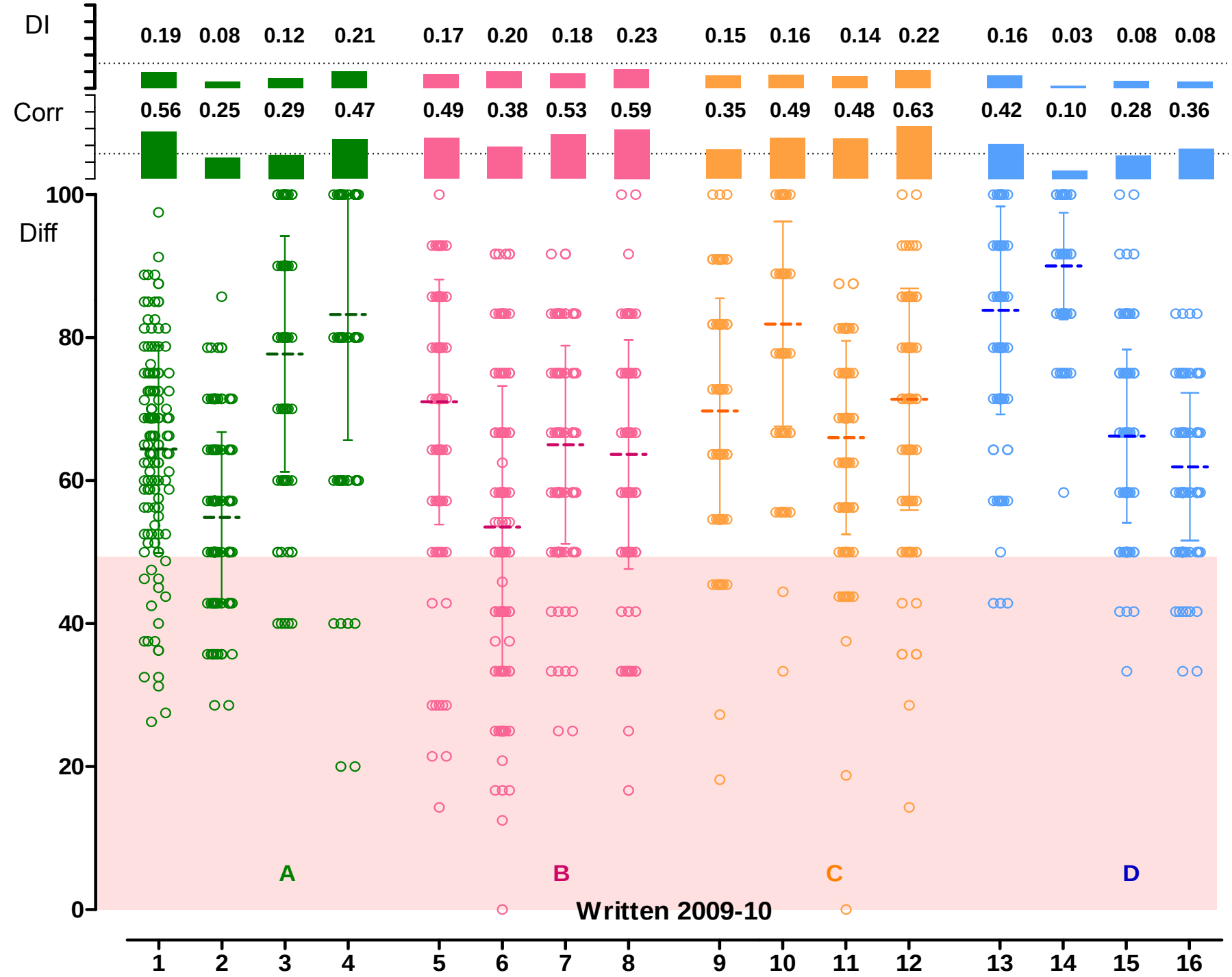


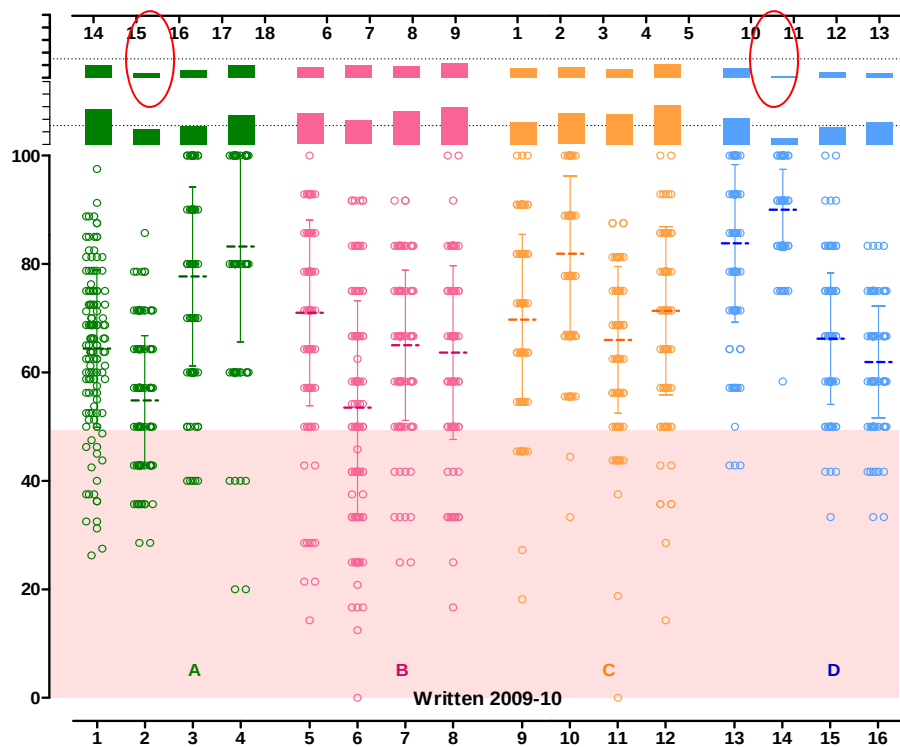
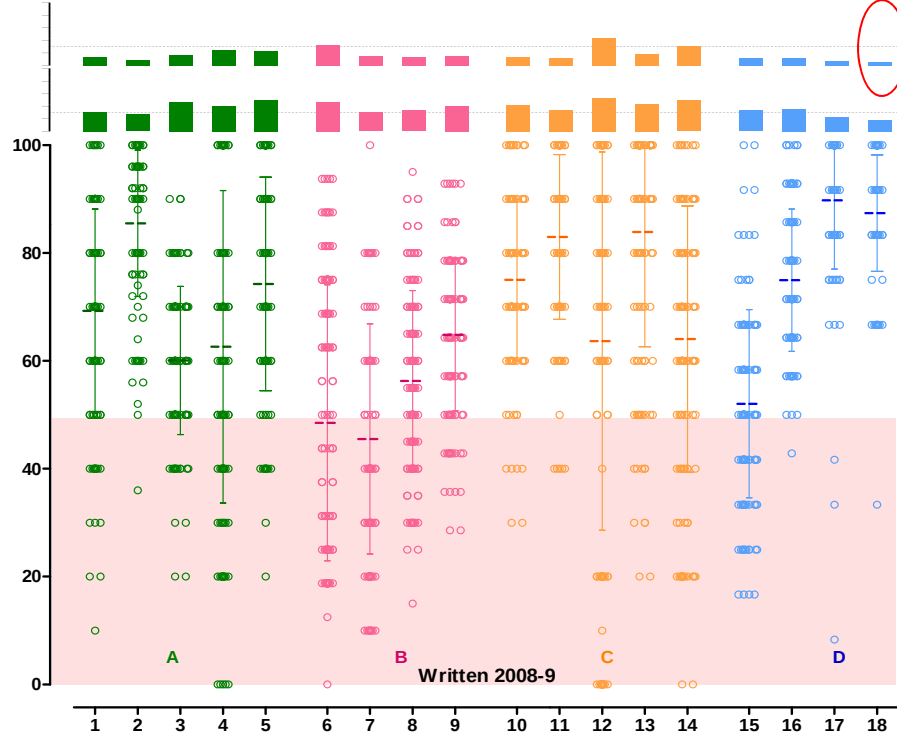
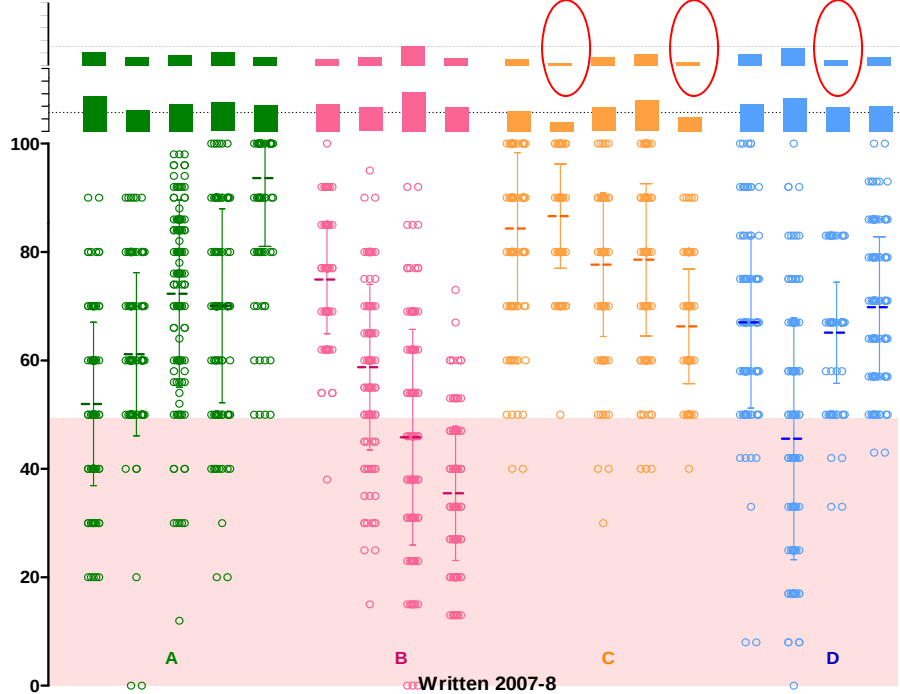
Written paper

Analysis by individual question





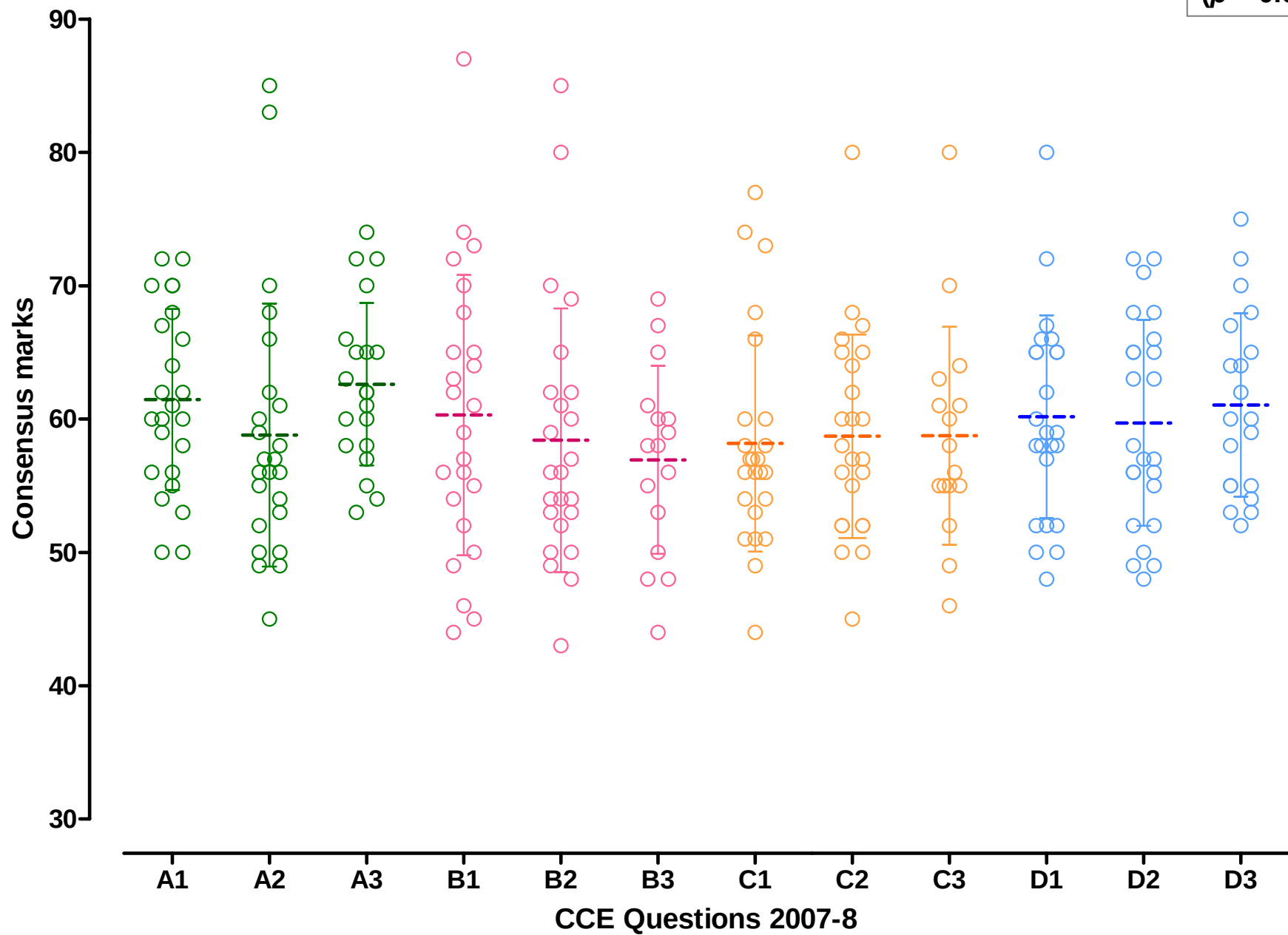


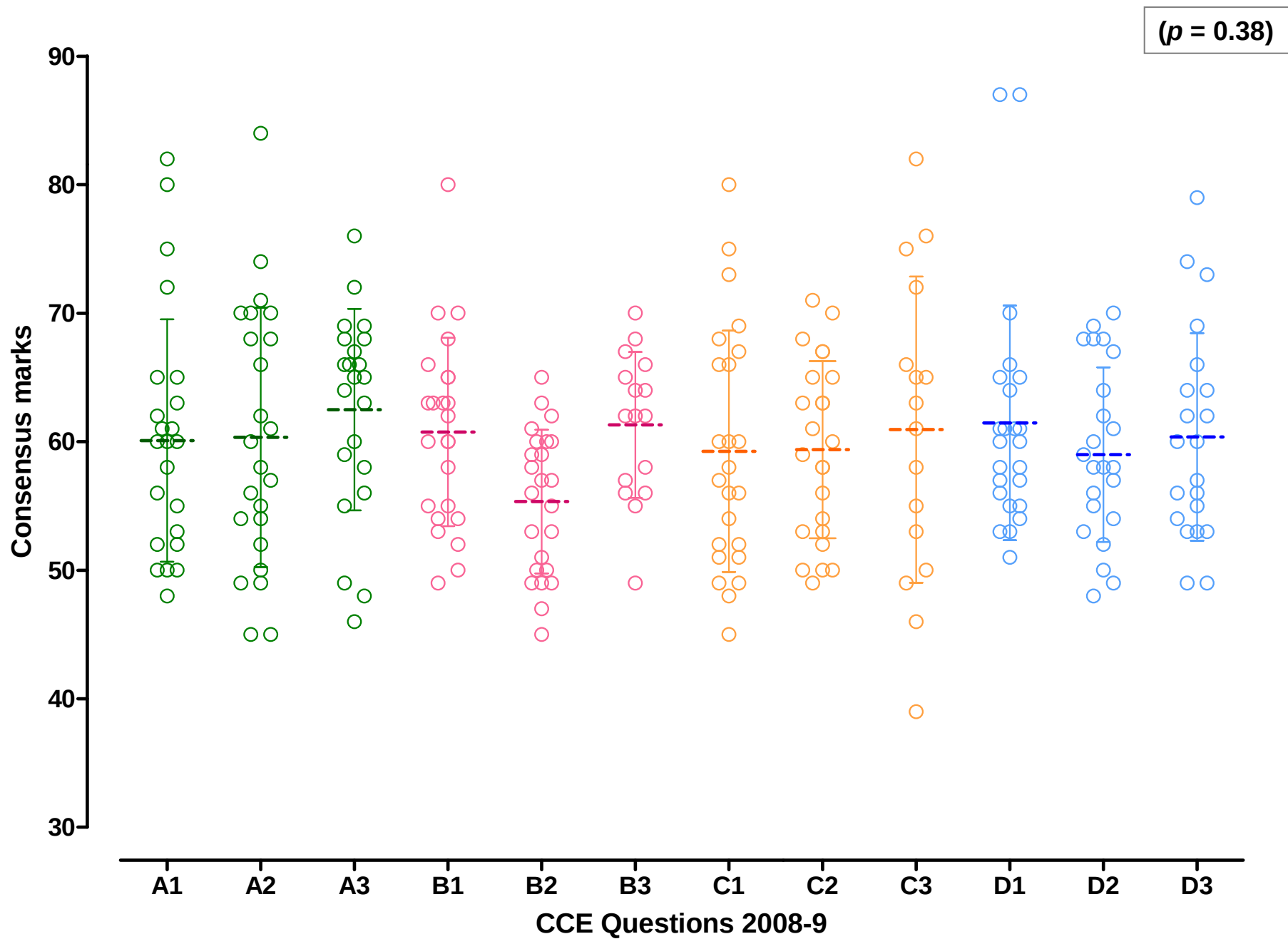


Combined clinical

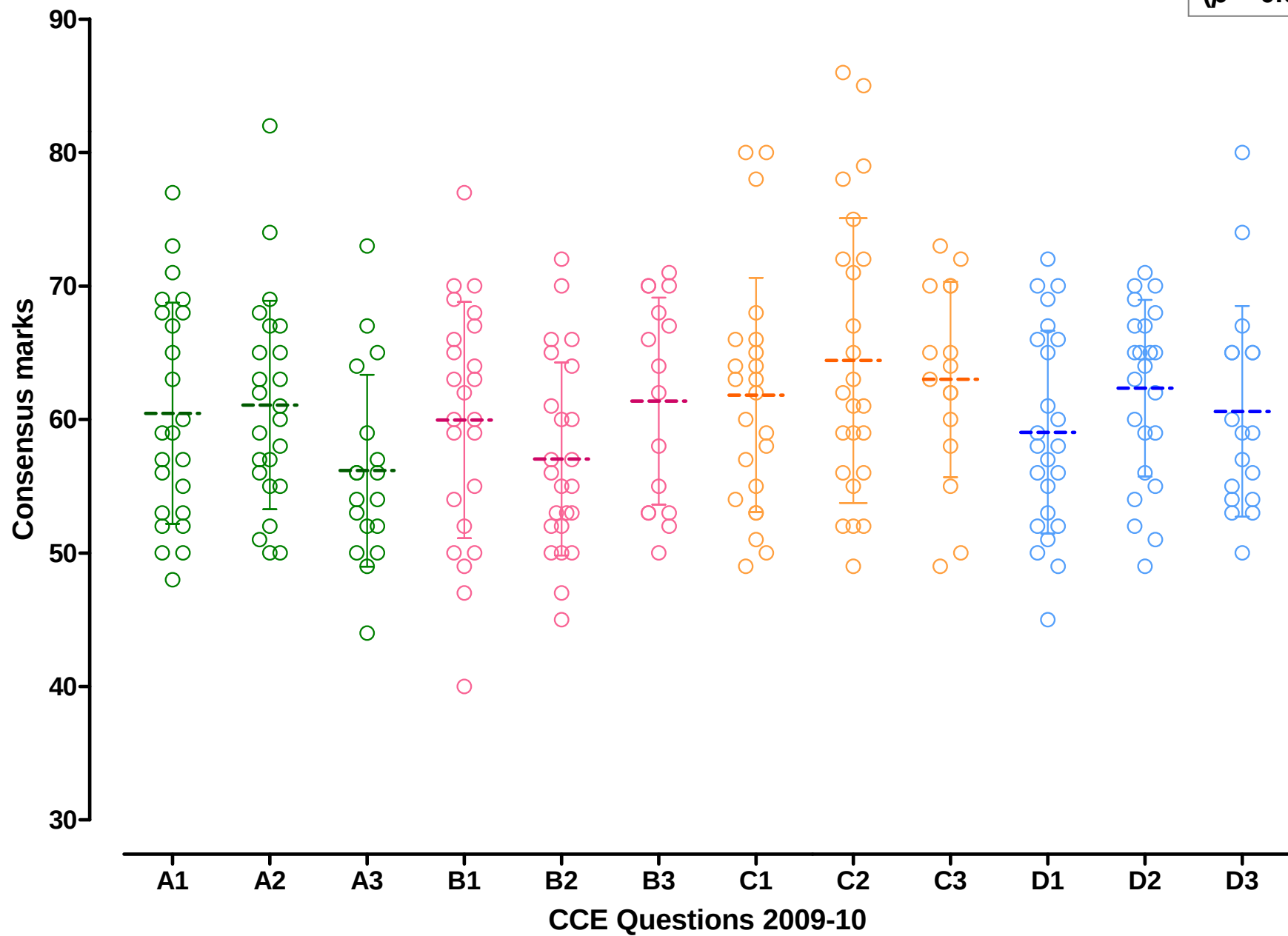
Analysis by individual question

$(p = 0.67)$



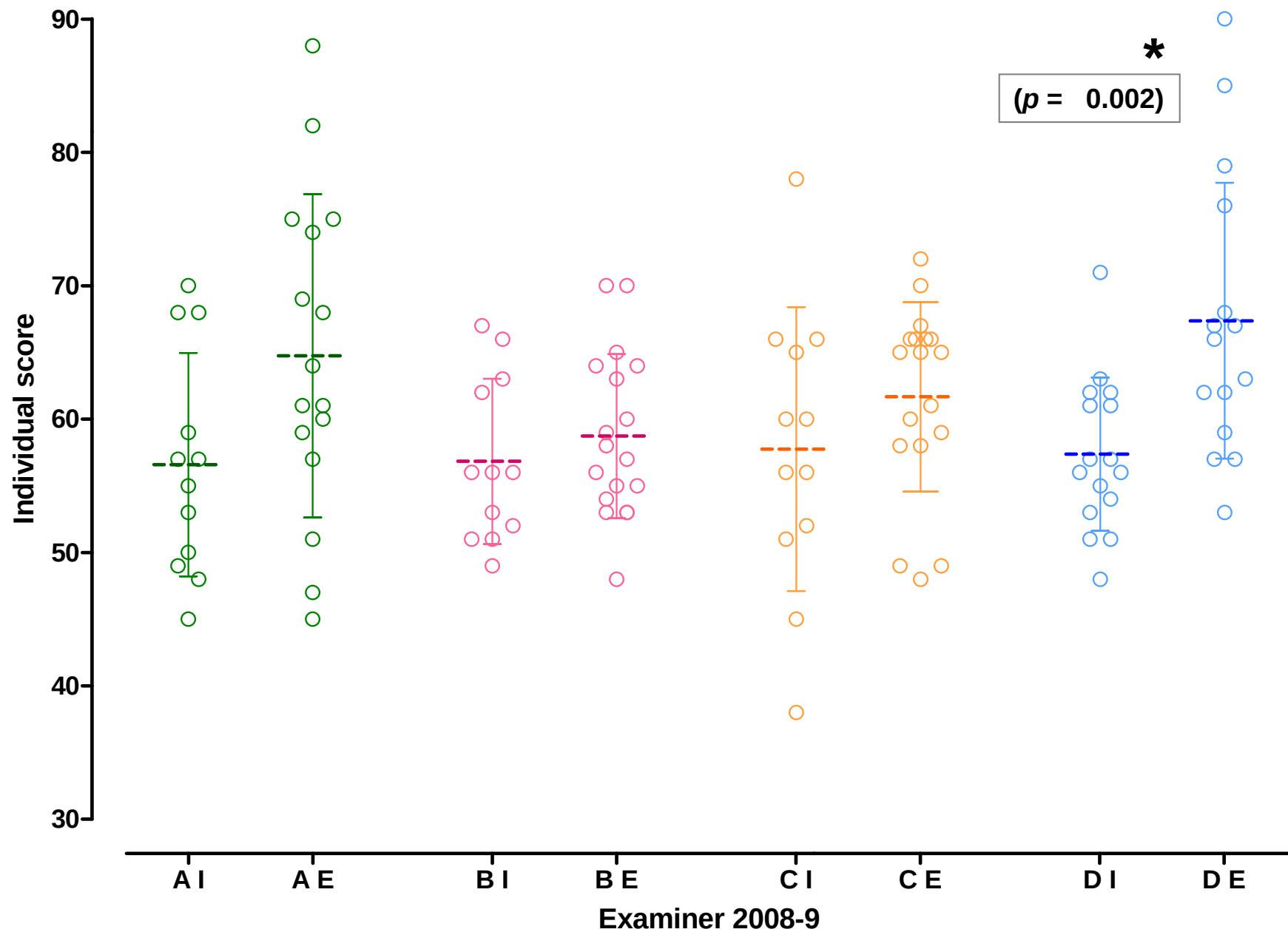


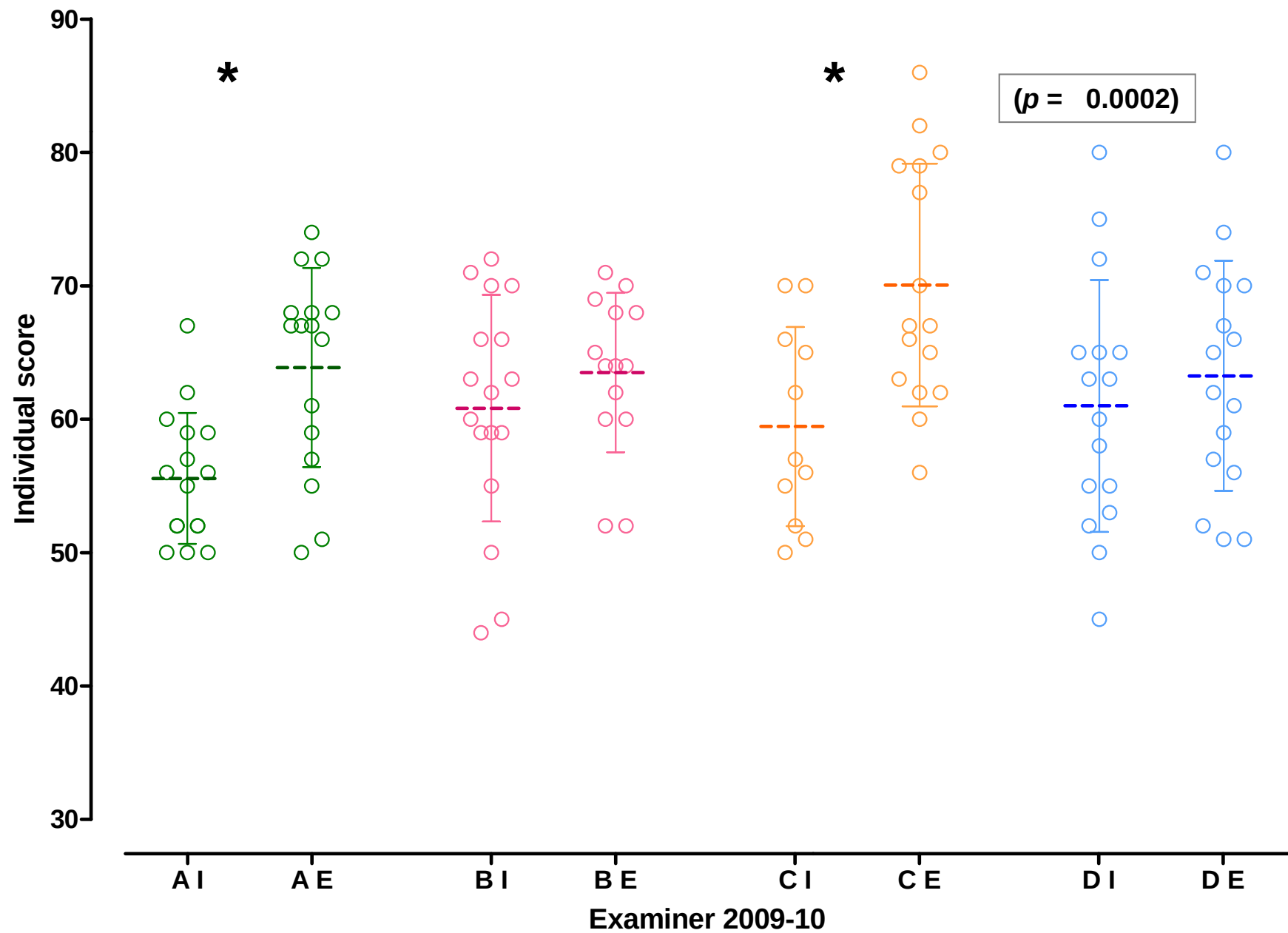
$(p = 0.057)$



Combined clinical examination

Rating by external examiners vs
internal examiners

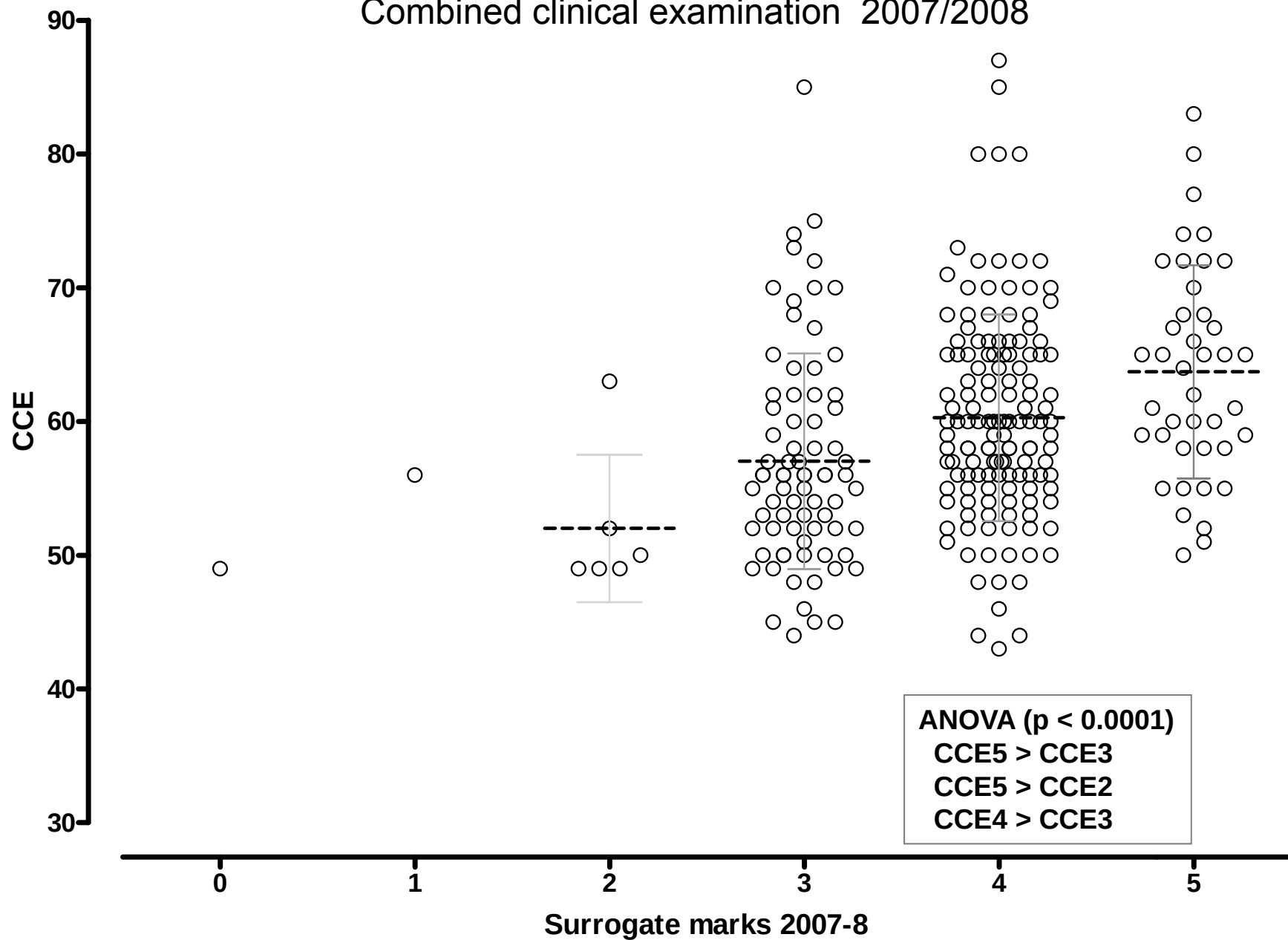




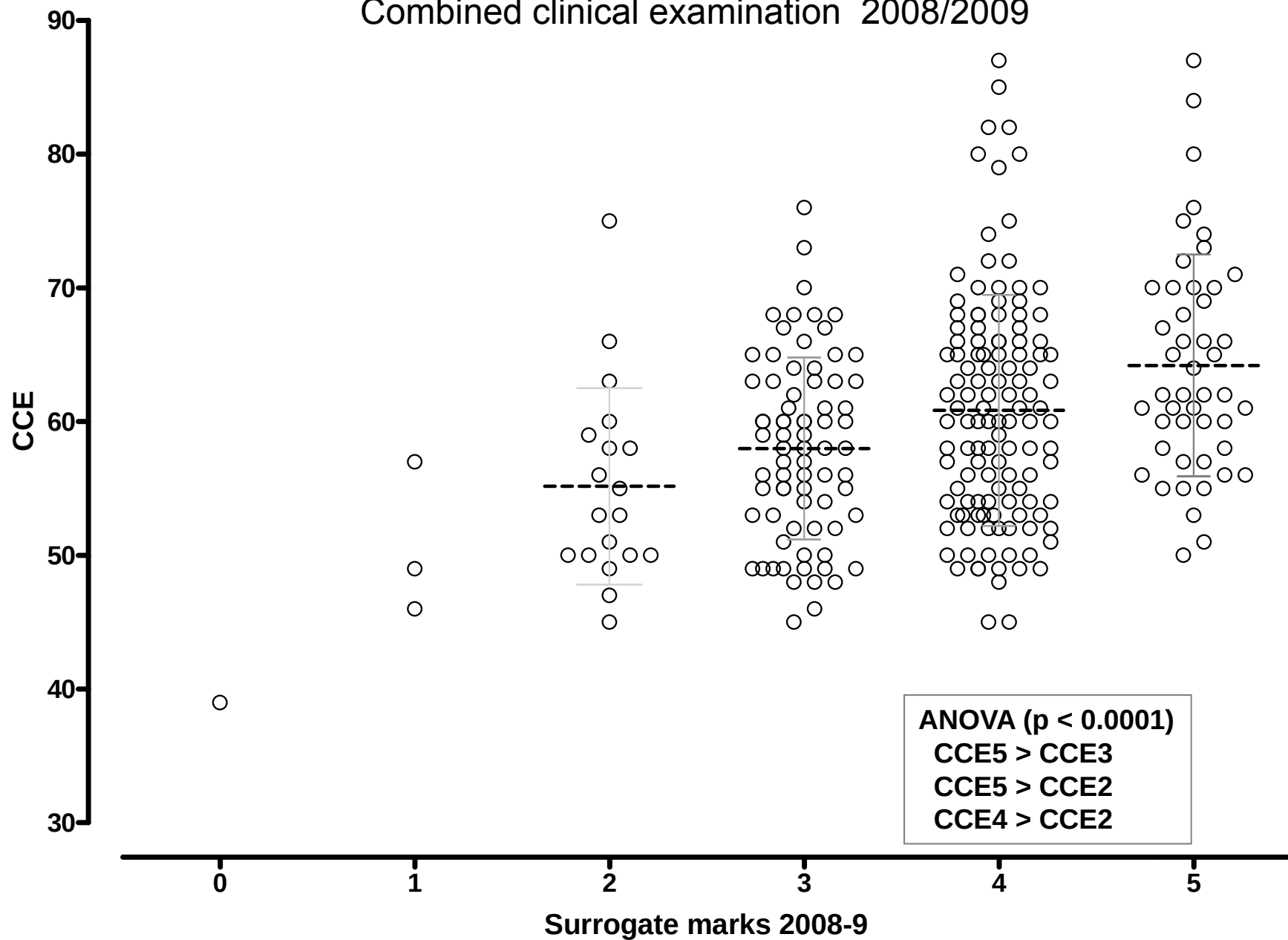
Overall rating by surrogate patients

Correlation between surrogate mark
(by surrogate patients) and the
consensus mark (by examiners)

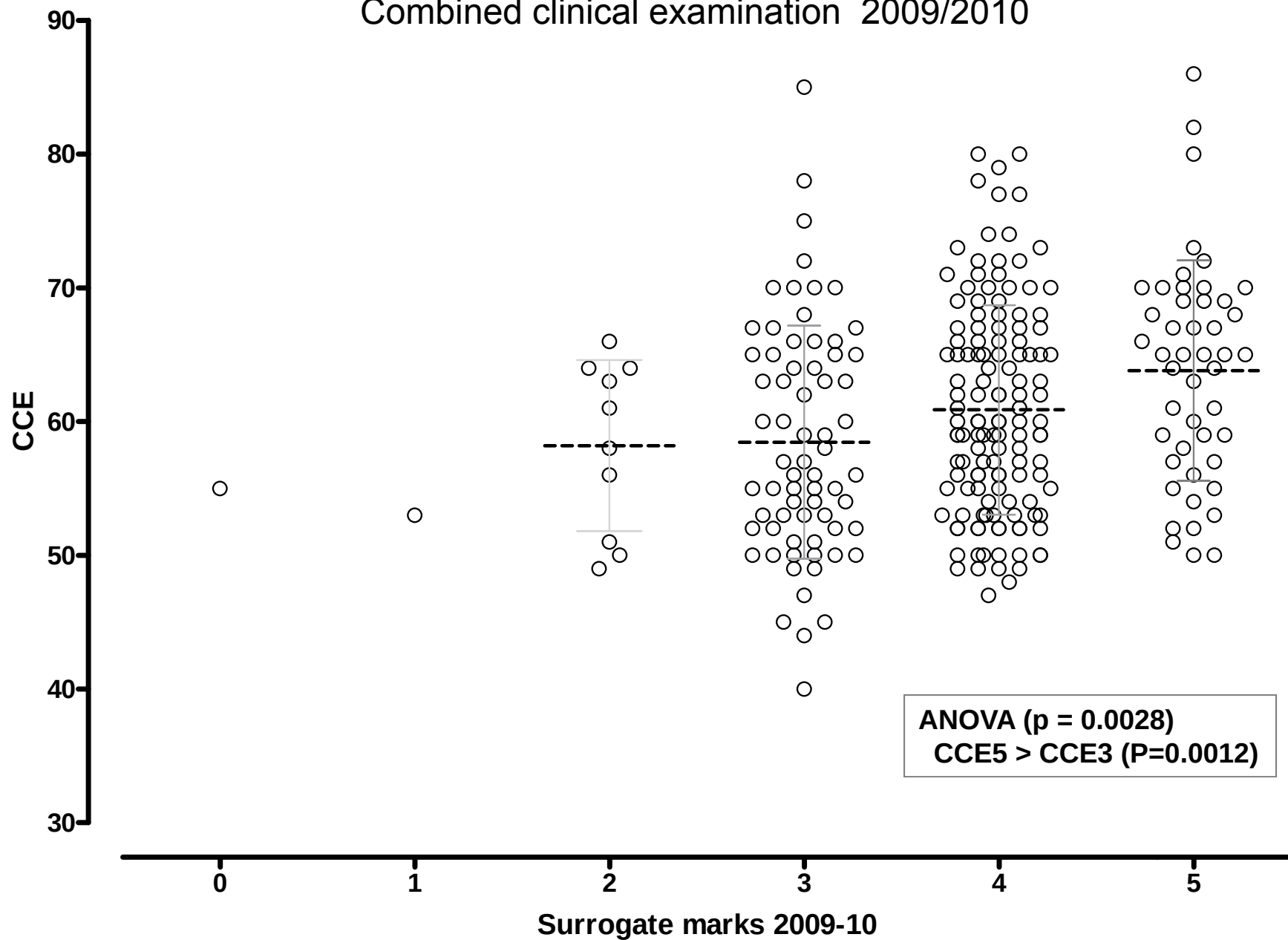
Combined clinical examination 2007/2008



Combined clinical examination 2008/2009



Combined clinical examination 2009/2010



Item analysis

Can provide:

- Feedback to teachers on the quality of the question

Cannot provide:

- Qualitative analysis of the question
- How to improve the question?

Outcome based assessment

- Future research to correlate the examination performance with the postgraduate performance (as an external validity)
- e.g. surrogate marks: how does it correlate with intern assessment on interpersonal relationship?