

TRAINING IN PEER ASSESSMENT AFFECTS QUALITY OF ASSESSMENTS & STUDENTS PERCEPTION & ACCEPTANCE OF PEER ASSESSMENTS

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Definitions

- * **Peer review** is the process of subjecting an author's scholarly work, research or ideas to the scrutiny of others who are experts in the same field.
- * **Peer assessment (PA)** is similar to peer review; it is a pedagogic method where students assess (grade, provide feedback on) the work of their peers, that is, other students in the same course.
- * Teacher assessment > **Peer assessment** > Self assessment



How I use PA



- * Psychology 101 (Introduction of Biological and Cognitive Psychology): ~ 300 students per section.



- * Students write a research report: ~1200 words, based on 3-5 peer reviewed journal articles, submit it to Turnitin (for originality check) & Moodle (for assignment to peers).

- * Each research report (anonymized) is assigned for assessment by 6 randomly selected peers; assessment is made according to a rubric (teacher provided).

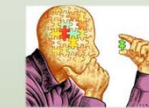


- * Research reports count for 12% of course grade; reviews graded by teaching staff count for 4% of course grade.



PA Benefits

- * PA is employed to **save teachers time**; PA makes it possible -- even in large classes -- to use pedagogic methods other than multiple choice tests.
- * PA permits **direct comparison** with work of other students; students learn from the successes & mistakes of peers (Race, 1998).
- * PA hones **critical thinking skills**; students gain proficiency in broad range of skills required for critical analysis and evaluation (de Sande & Godino-Llorente, 2014; Mulder et al., 2013).
- * PA increases **student engagement** in the learning process; students gain a better understanding of requirements of assessments and grading standards (Brindley & Scofield, 1998; Falchikov, 1995; Mulder et al. 2013).
- * The **amount and range of feedback** about an assignment is increased when multiple peers assess a student's work.



however ...

- * Students tend to have a negative attitude towards peer assessment.
- * Students tend to view:
 - * peer Assessment as being **unfair**; they argue that grades based on peer assessment are not valid.
 - * themselves and/or their peers as lacking the skills required for peer assessment; they maintain that **students are not qualified to do assessments**, that teachers should grade work and provide feedback.

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Questions

- * Do students have a negative attitude toward peer assessment?
- * If yes, does this attitude vary with year of study (1st year; 2nd year, etc), or with faculty of study (ARTS vs SCIENCE), or with GPA?
- * Can students' attitude toward peer assessment be improved by providing training on how to do peer assessments?

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Questions

- * What (if any) effects result from training in how-to-do peer assessments? Does it ...
 - * influence students' assessment scores?
 - * increase the quality of students' written work?
 - * increase students' ability to estimate the quality of their work?
 - * affect the reliability of the scores provided by reviewers?

Present Study: Workshop Info

- * On-line, delivered via the course web
- * Completion time: ~2 hours
- * Steps:
 1. Study description of research essay assignment & scoring rubric; pass MC test to proceed (20-30 min)
 2. PAPAQ (3-5 min) (attitude scale)
 3. Grade sample research report – aspect by aspect -- according to rubric; video feedback provided by peers (30 – 60 min)
 4. Grade 2nd sample research report according to rubric; video feedback provided by instructor (20 – 40 min)
 5. PAPAQ (3 min)
 6. Workshop exit survey (10 min)

Design

Student Tasks						Submit Research Report			Conduct Peer Reviews			
Course Week	1	2	3	4	5	6	7	8	9	10	11	12
Condition			BEFORE				BETWEEN				AFTER	

- * Study conditions:
 - * BEFORE ... writing the research report or doing any peer reviews
 - * BETWEEN ... submitting the research report and prior to doing any peer reviews
 - * AFTER ... writing the research report & completing the peer reviews

Participants

- * 427 students from Psych101: Introduction to Biological and Cognitive Psychology
- * 371 consented to the research use of their data & course grades
- * ~350 provided complete data
 - * BEFORE: n = 111
 - * BETWEEN: n = 128
 - * AFTER: n = 108

RESULTS

Peer review scores from the training workshop

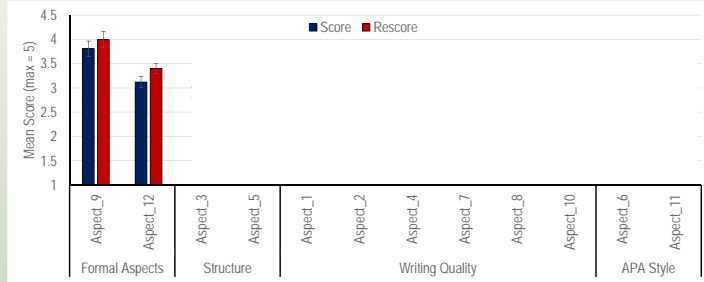


Q1: Does training/feedback influence assessment scores?



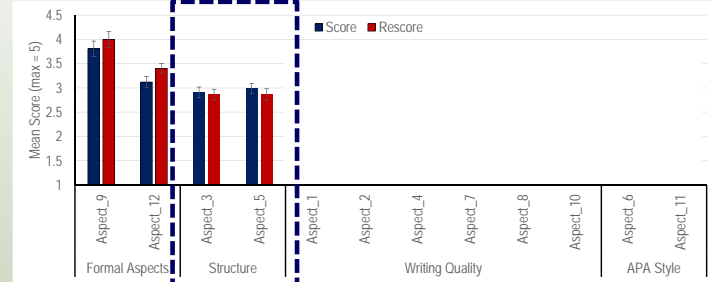
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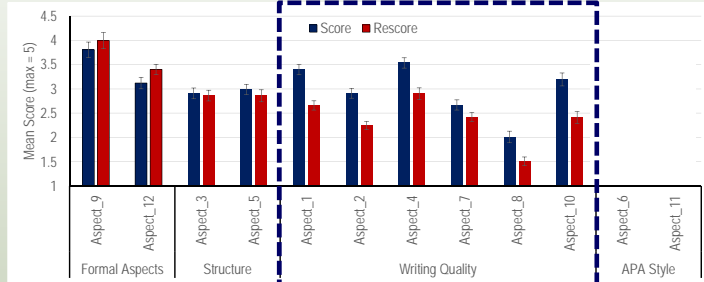
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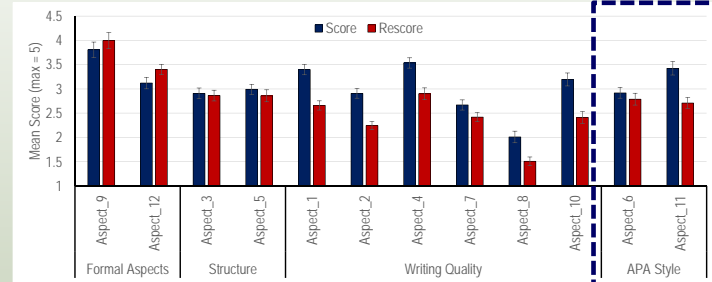
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Interim Summary

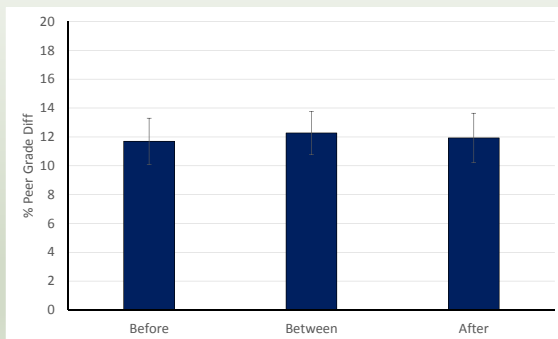
- * What (if any) effects result from training in how-to-do peer assessments? Does it influence students' assessment scores?
- * Yes, especially with scoring subjective, qualitative aspects of reports. During the training workshop, feedback made students more cautious and more critical.

RESULTS

Scores assigned to peer reports
Knowledge translation

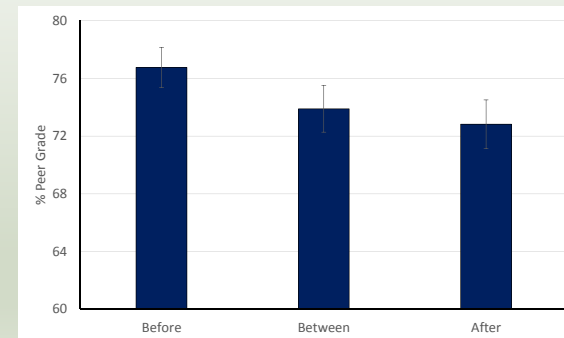


Q: Does training change the spread (reliability) of peer grades?



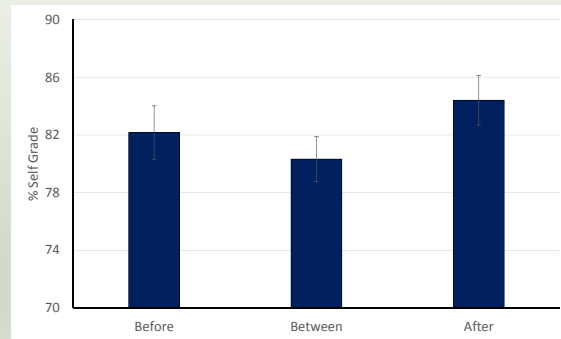
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Q: Does training influence peer-assessed grades?



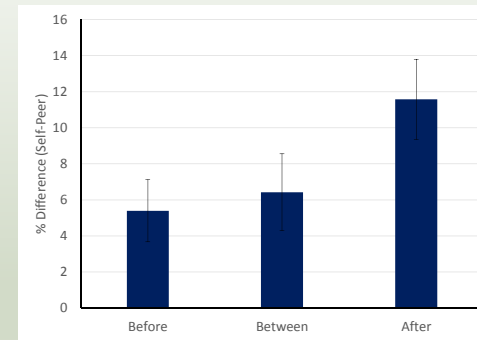
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Q: Does training affect self-assessed grades?



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Q: Does training increase insight into quality of own work?



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Interim Summary

- * What (if any) effects result from training in how-to-do peer assessments? Does training translate into practice? How does training affect later report writing & report assessment?
- * Training does not affect the spread of peer review scores.
- * Students who have completed training tend to receive higher peer grades for their work.
- * After training, student give lower self-assessment scores.
- * After training, students' self-assessed scores are closer to the peer assessed scores.

Interim Conclusion

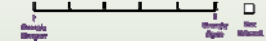
- * Training in peer assessment is useful and leads to a number of benefits.
- * The most important benefit is that it equips students to make better predictions about how their work is perceived and evaluated by their peers.
 - * Training makes students more critical
 - * Training increases students awareness of the assignment requirements and scoring criteria.

Questions

- * Do students have a negative attitude toward peer assessment?
- * If yes, does this attitude vary with year of study (1st year; 2nd year, etc), or with faculty of study (ARTS vs SCIENCE), or with GPA?
- * Can students' attitude toward peer assessment be improved by providing training on how to do peer assessments?

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Perception & Acceptance of Peer Assessment Questionnaire (PAPAQ)



- * 18 items, such as:
 - * I understand the criteria used for grading/evaluating my written course assignments.
 - * A teaching assistant is more skilled than my peers at grading/evaluating written course assignments.
 - * It is fair that part of my course grade is based on evaluations and feedback provided by peers.
- * Questionnaire structure:
 - * Factor 1 – 8 items; alpha = .93: Confidence in Peers' Assessment Skills
 - * Factor 2 – 7 items; alpha = .91: Confidence in Own Assessment Skills
 - * Factor 3 – 3 items; alpha = .79: Appropriateness of Peer Assessment in University Courses
- * Factors account for:
 - * 67.93% of variability in data

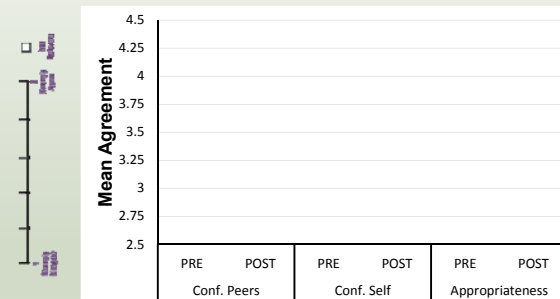
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Present Study

- * 427 introductory students completed PAPAQ twice, either immediately BEFORE or immediately AFTER doing a 2-hour on-line workshop on peer assessment
- * 371 consented to the research use of their PAPAQ data & course grades
- * 338 provided complete PAPAQ data

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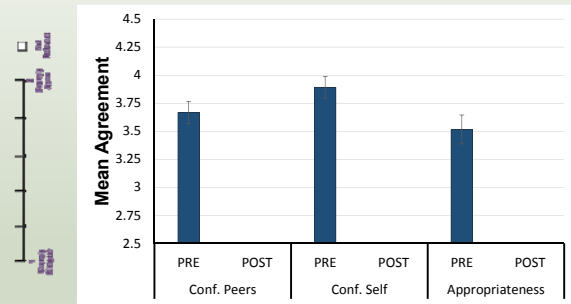
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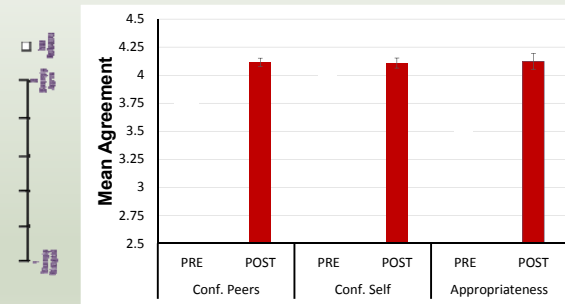
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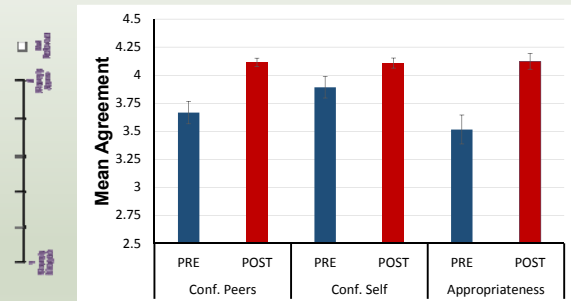
Q2: Does training change students' attitude toward peer assessment?



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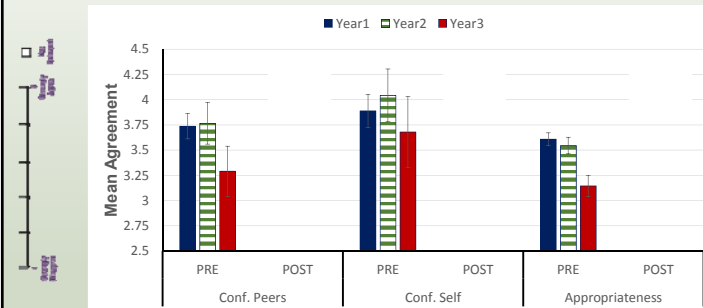
Q2: Does training change students' attitude toward peer assessment?



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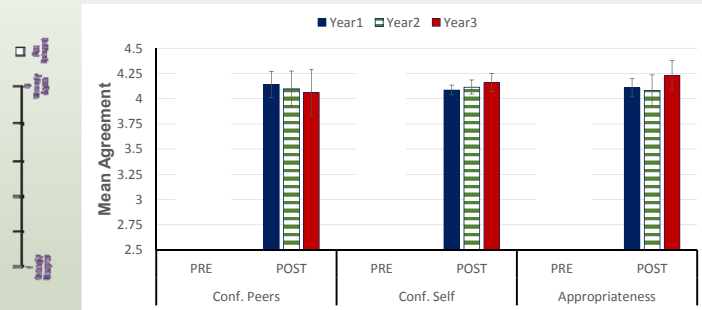
Q3: Does year-of-study determine attitude toward peer assessment?



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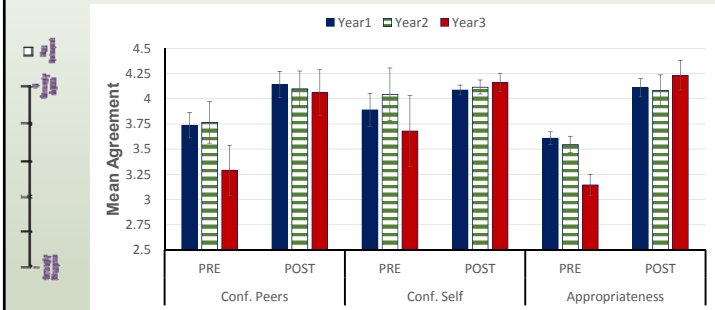
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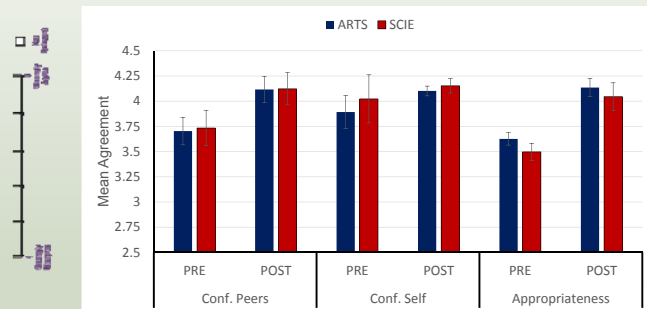
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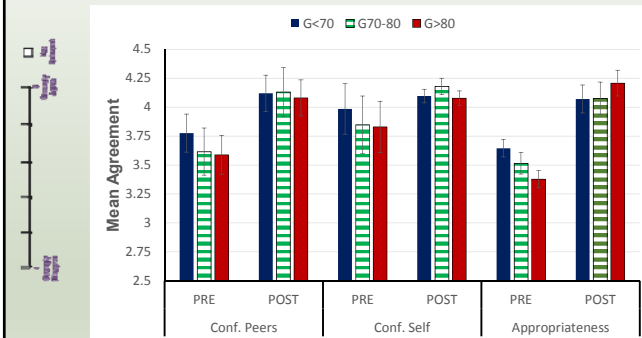
Q4: Does faculty/study-focus impact attitude toward peer assessment?



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Q5: Does course grade affect attitude toward peer assessment?



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Summary & Discussion

- * Q: Do students have a **negative attitude** toward peer assessment?
- * Answer:
 - * Yes/No (3.5 on 6-point scale is middle/neutral)
 - * Students believe they are more skilled as reviewers than their peers
- * Q: Does **training** change students' attitude toward peer assessment?
- * Answer:
 - * Yes (.5 increase on 6-point scale)
 - * Training increases students' rating of own and peers' skills
 - * Training increases students' rating of the course appropriateness of PA

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Summary & Discussion

- * Q: Does **faculty/study-focus** impact attitude toward peer assessment?
- * Answer:
 - * No (no significant differences either PRE or POST workshop)
 - * Same attitude increase for both Arts and Science students
- * Q: Does **course grade** determine attitude toward peer assessment?
- * Answer:
 - * Somewhat: Prior to the workshop, high achieving students gave lower ratings of the course appropriateness of PA (**probably fear of grading by a low-GPA student**)
 - * Training removes differences due to course grade

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Summary & Discussion

- * Q: Does **year-of-study** affect attitude toward peer assessment?
- * Answer:
 - * Yes; PRE workshop, upper year students gave lower ratings than 1st or 2nd year students
 - * No: POST workshop, all differences were removed

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Conclusion

- * Results show that negative attitudes toward PA is not huge, but is real, and is easily removed with a bit of training. Therefore, don't be deterred by negative attitude; focus on the fact that PA methods can be used to enrich learning.
- * Many academics are convinced that peer review is the only process appropriate for most purposes (eg. article review, grant application review). This conviction is likely shared by our students; they will respond more favorably to peer feedback than instructor feedback.

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Factor 1: Confidence in Peers' Assessment Skills

- I trust the grading/evaluations and feedback provided by peers.
- My peers know what to look for when grading/evaluating my written course assignments.
- My peers have the skills required for grading/evaluating my written course assignments.
- I have confidence in my peers' ability to grade/evaluate my written course assignments.
- Students are capable of grading/evaluating the written course assignments of their peers.
- My peers have received adequate training on how to grade/evaluate my written course assignments.
- My peers are able to grade/evaluate my written course assignments in a fair manner.
- I believe my peers are sufficiently well trained for grading/evaluating my written course assignments.

Factor 2: Confidence in Own Assessment Skills

- I have received adequate training on how to grade/evaluate the written course assignments of my peers.
- I know what to look for when grading/evaluating my peers' written course assignments.
- I am adequately prepared for grading/evaluating the written course assignments of my peers.
- I am able to grade/evaluate my peers' written assignments in a fair manner.
- I have the skills required for grading/evaluating my peers' written course assignments.
- I have confidence in my ability to grade/evaluate my peers' written course assignments.
- I have received adequate training for grading/evaluating the written course assignments of my peers.

Factor 3: Appropriateness of Peer Assessment

- Peer grading should be an important part of every university course.
- It is fair that part of my course grade is based on evaluations and feedback provided by peers.
- It is appropriate that part of my course grade is based on evaluations and feedback provided by my peers.