

**EVALUATION OF
PEER ASSESSMENT
IN A SECOND YEAR
ENGINEERING
MODULE**

David Hassell

Universiti Teknologi Brunei



Introduction

- Background
- Methodology
- Results
- Conclusions



Background

- Universiti Teknologi Brunei officially became a University in 2008
- Petroleum and Chemical Engineering Programme Area (PCE) began in 2009
- PCE currently has ten members of staff teaching two degree's (CE, PE) and ran a Foundation Degree programme until May 2016
- As PCE develops it is introducing new teaching methodologies



Background

- **Second Year module: Petroleum Refining**
 - Basics of Petroleum refining, including processes and systems
 - Qualitative in nature with little numerical calculations
- **Coursework is in essay form (600 words)**
 - Students asked to research, evaluate and explain the factors involved in locating an oil refinery
 - Worth 15% of the module
- **Two student cohorts**
 - Petroleum Engineering degree students (38)
 - Foundation Degree in Process Engineering students (58)



Methodology

- Students undertake and submit the coursework
- At the end of the semester students are provided with a Rubric and supporting documentation to assess their work and that of a peer
- Presentation is given highlighting how to use a rubrics to assess coursework
- Students are given 30 minutes per exercise to both peer and self assess the work
- Coursework is marked by lecturer and 2nd academic marker (non-specialist) and the results compared



Student Perception

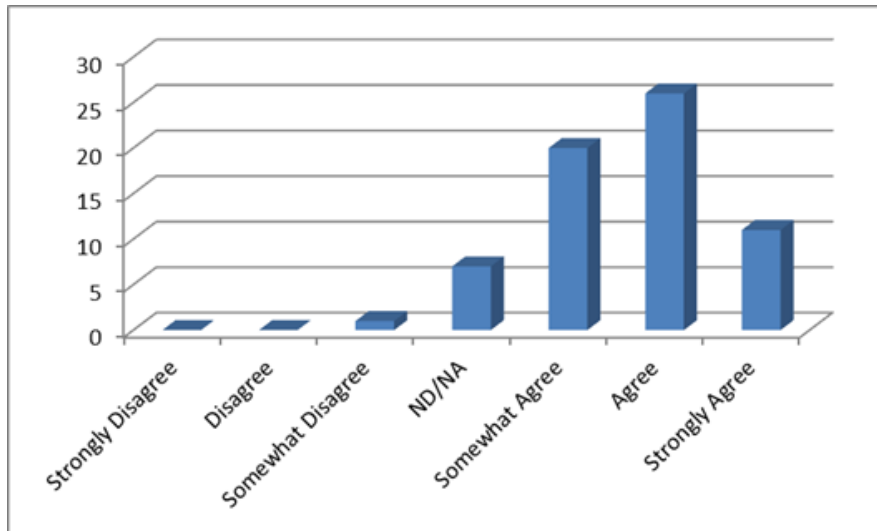
Questions were asked on a seven point Likert scale* to evaluate student perceptions on the following:

- Do students feel that peer assessment is a fair way to evaluate their work and do they think peers have the knowledge to do so?
- Do students take the exercise of marking other peoples work seriously?
- Do students learn from the process, and if so how?
- How do students find the experience?

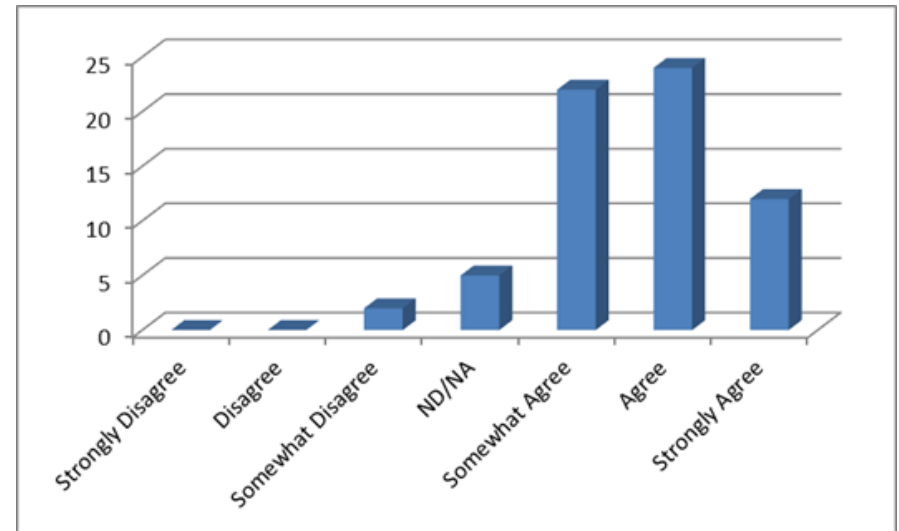
*Likert, R. (1932). A technique for the Measurement of Attitudes. Arch. Psy. pp 140 1-55

Student Perception

“I think that the presentation given at the beginning of the class on how to use rubrics prepared me well enough to assess the work”

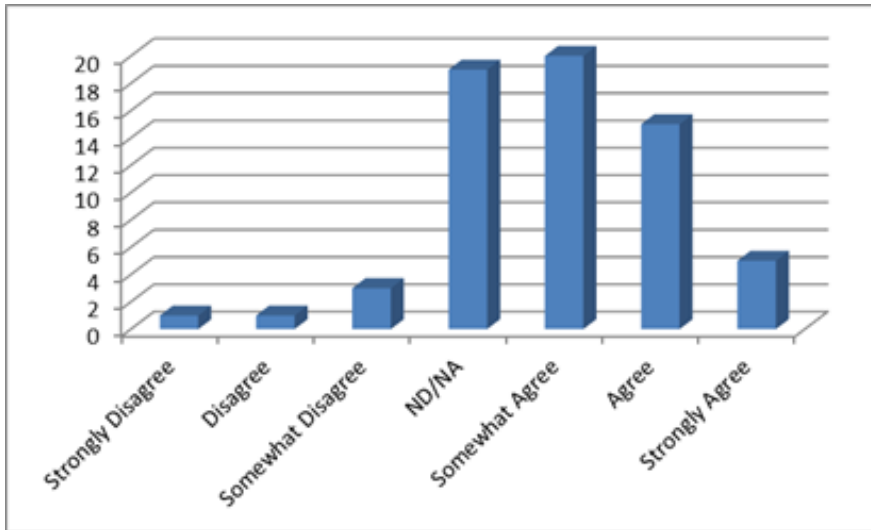


“I think that the rubrics was written in a clear manner which allowed me to accurately assess the work”

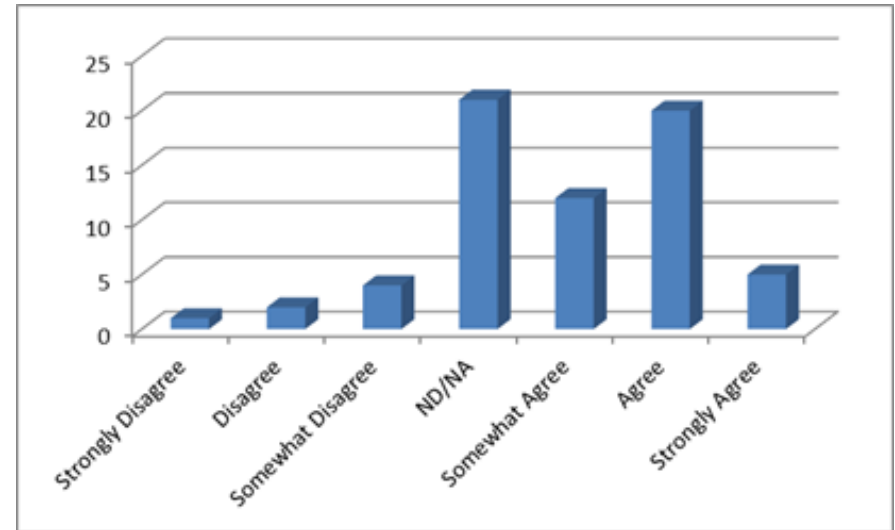


Student Perception

“I think rubrics based peer assessment is a fair method to assess student's performance”

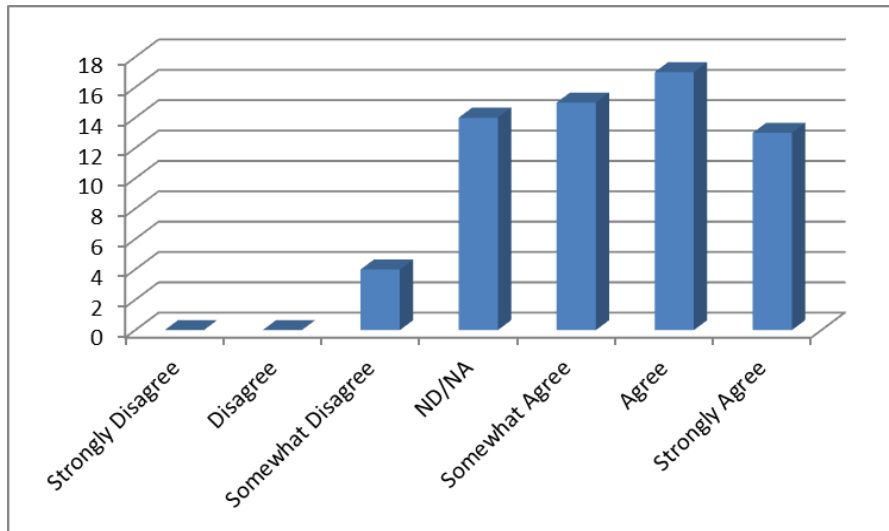


“I feel that my peers have adequate knowledge to evaluate my work”

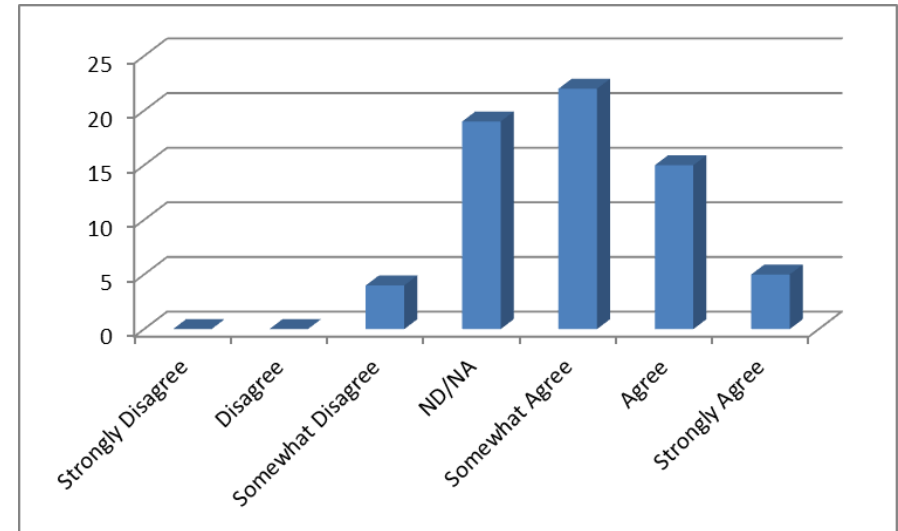


Student Perception

“I took a serious attitude towards marking peers' work”

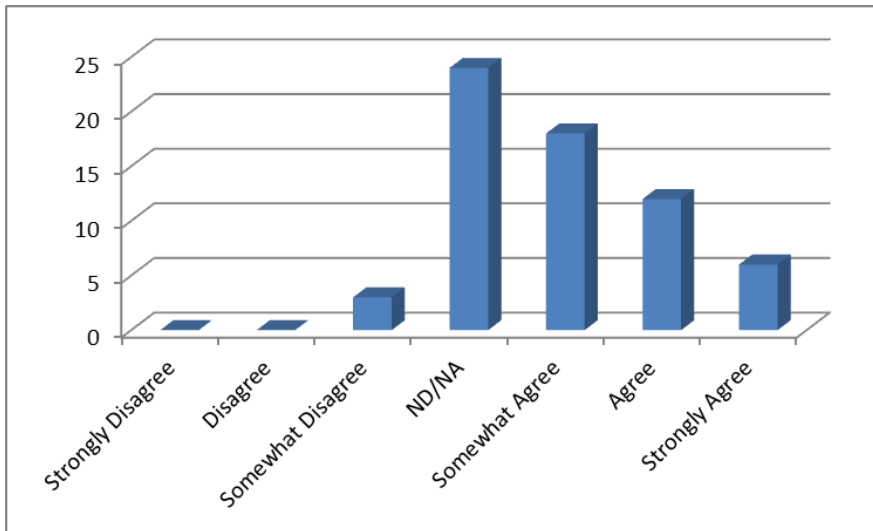


“I felt that I was critical of others work when marking it”

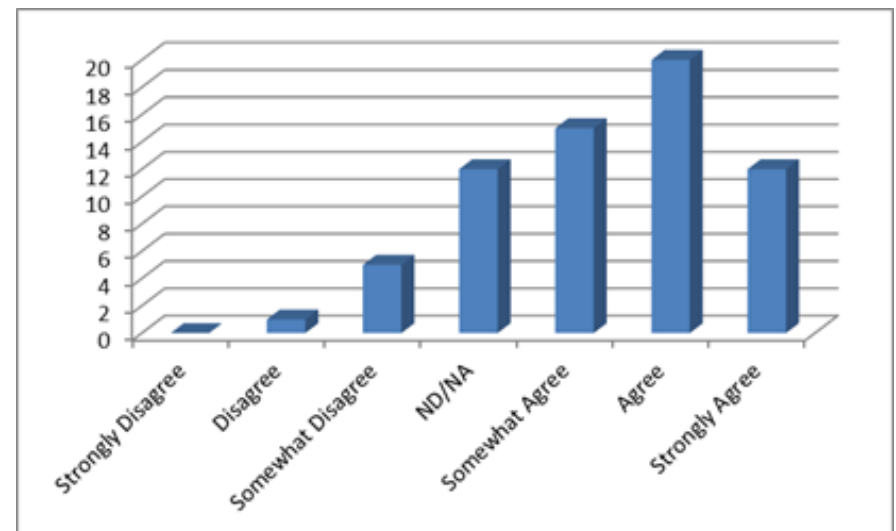


Student Perception

“Giving feedback to my peers is useful to me”



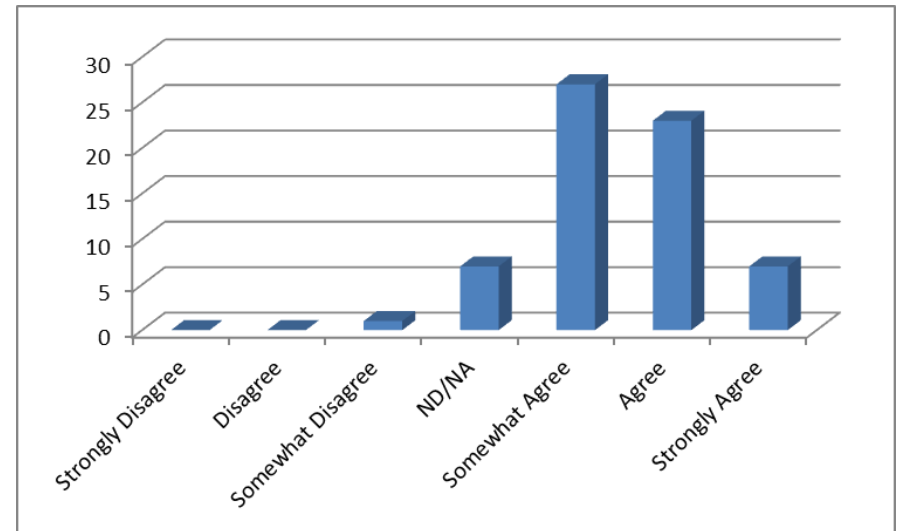
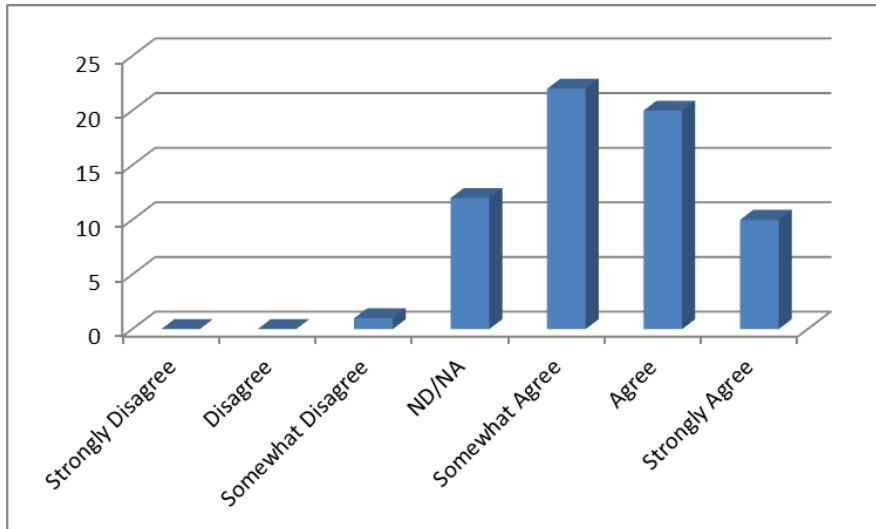
“Giving feedback to my peers is very difficult”



Student Perception

“I feel that peer assessment is helpful to my learning”

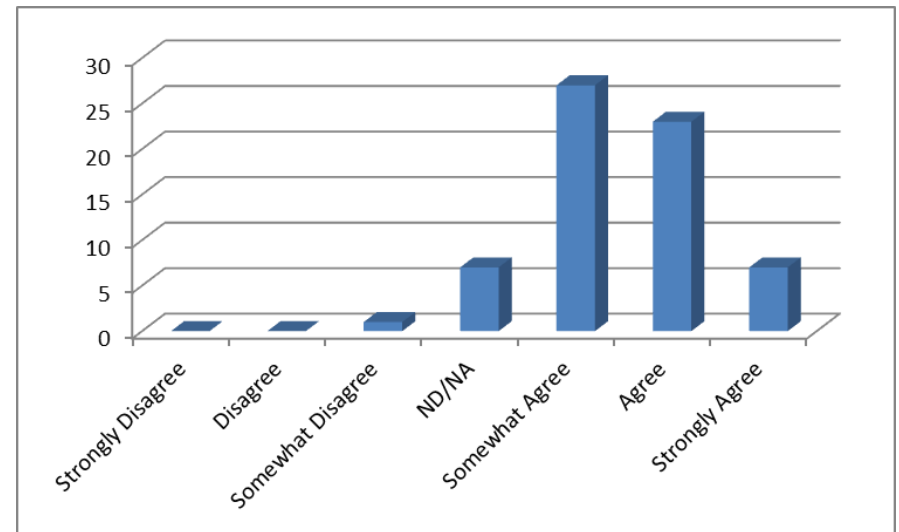
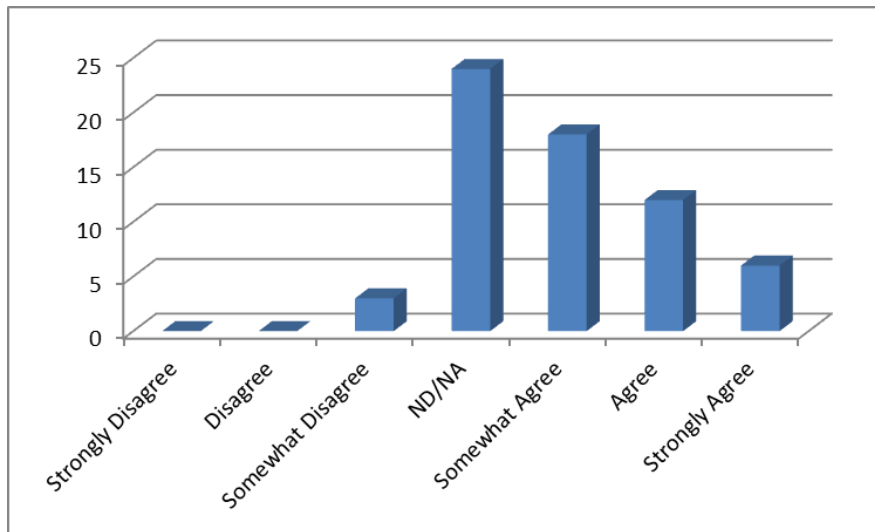
“I learnt something through performing peer review”



Student Perception

“Giving feedback to my peers is useful to me”

“I learnt something through performing peer review”

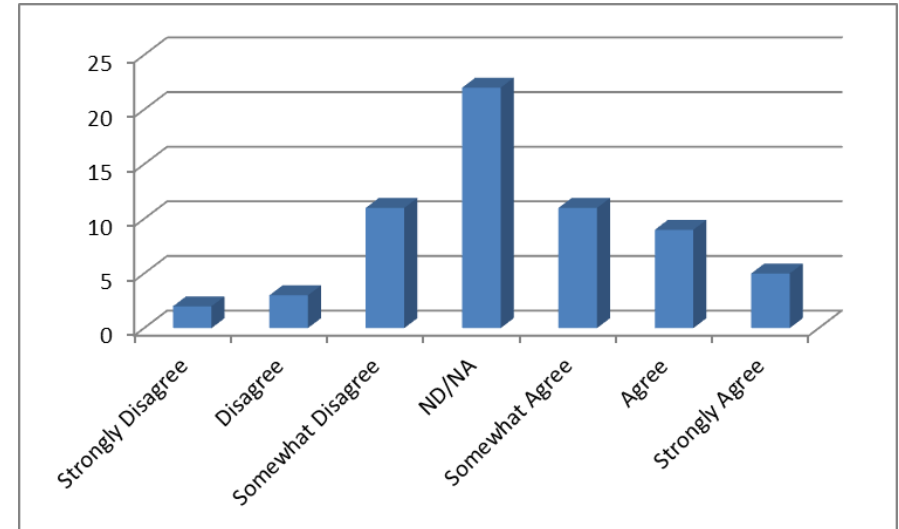
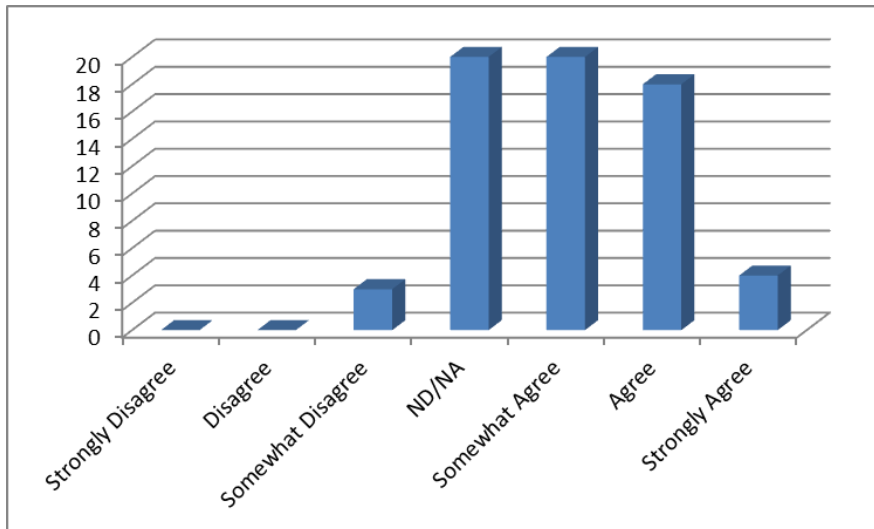


More people thought they learned from it than thought it useful?

Student Perception

“Peer assessment activity motivates me to learn”

“I would prefer not to do peer assessment on others”





Student Perception

Students felt that

- They were adequately prepared to undertake the assessment exercise
- The assessment exercise was a useful learning tool
- The assessment exercise motivated students to learn
- They took the exercise seriously and were critical of the work they were assessing
- The exercise was difficult, and they were unsure whether they would like to peer assess others or not



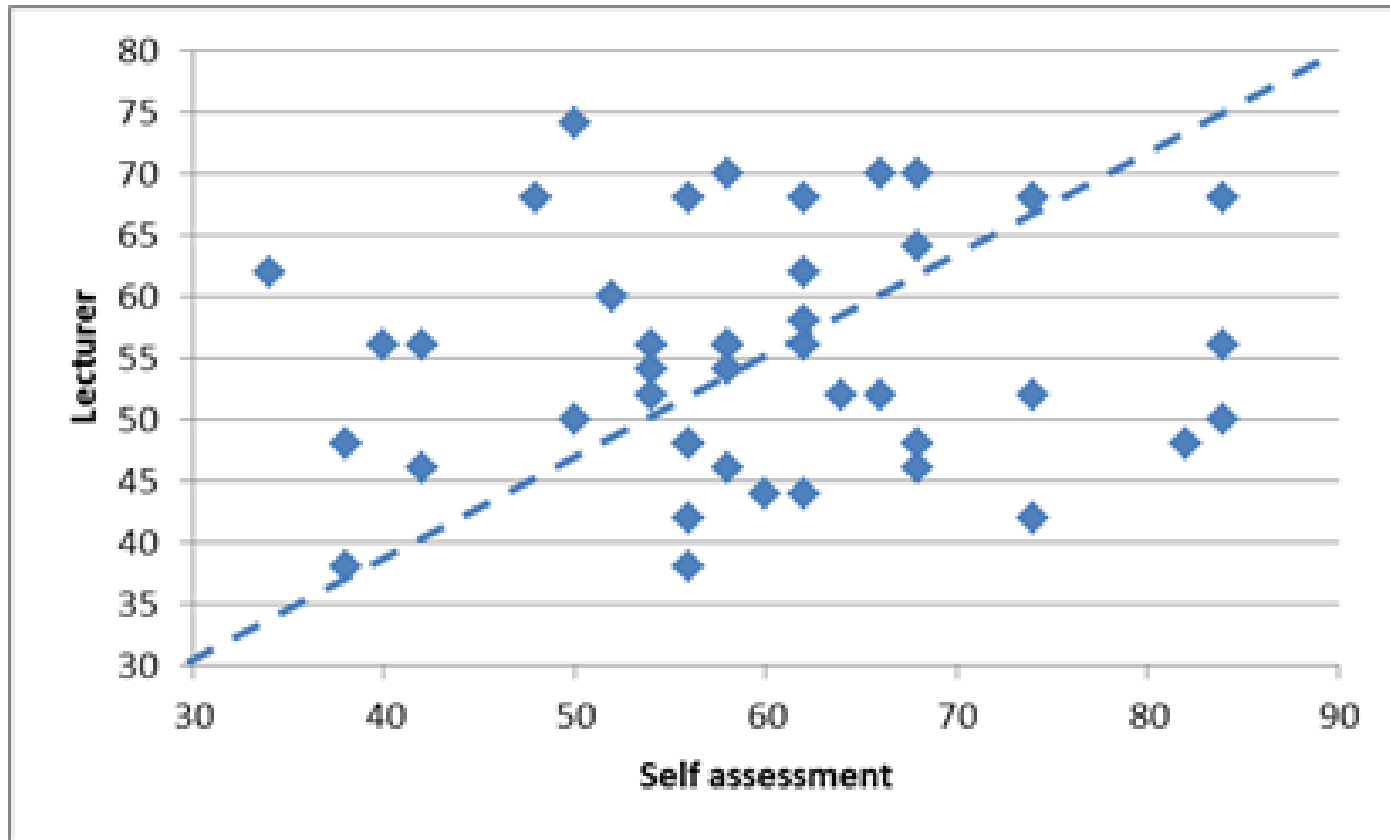
Marking

A comparison of individual marks awarded to students from self-assessment and lecturer assessment

- How does self and peer assessment marking compare with lecturer marking and second marking?
- Are there any observed trends based on student ability with regards to their self or peer assessment?
- Have students learnt from the process?

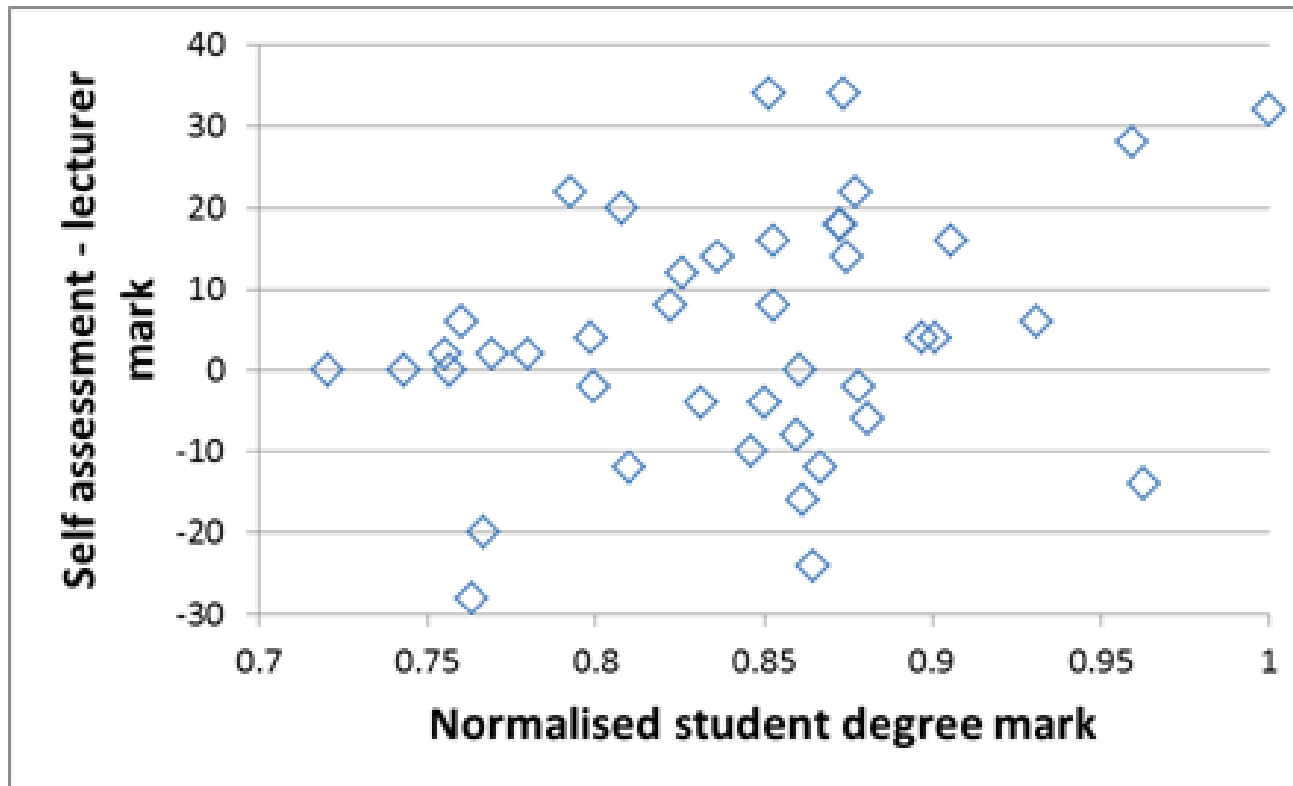
Marking

Can you see any correlation between markers?



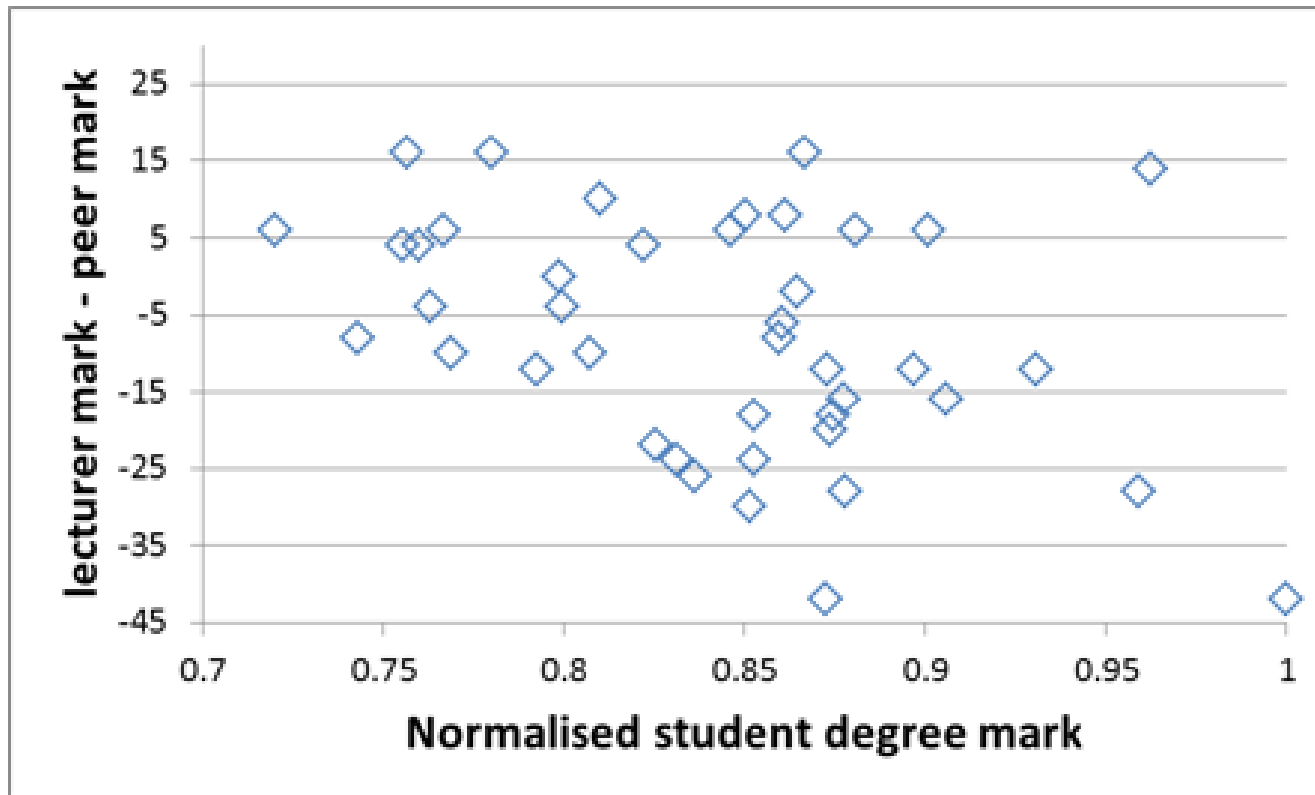
Marking

Poorly performed students have the tendency to overrate themselves as compared to lecturer's grading?



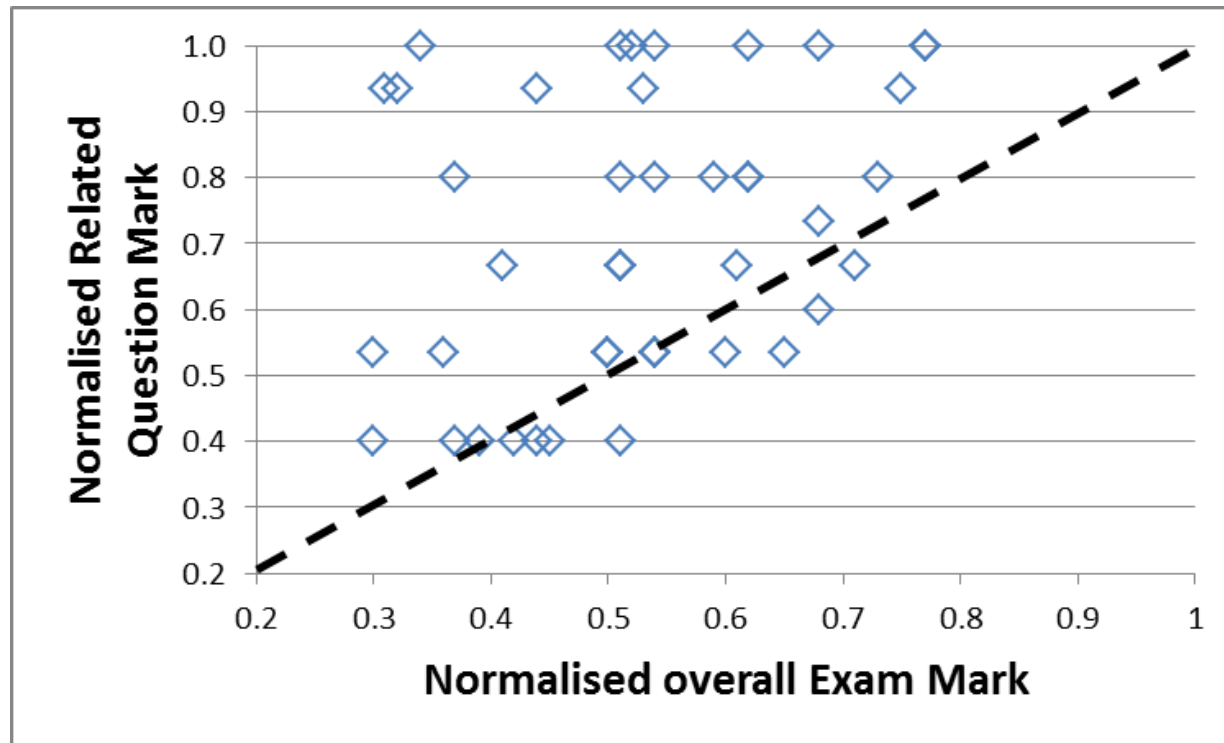
Marking

High performing students tend to be underrated by peers?



Marking

A representative comparison of the exam mark against related question mark



But was it just an easy question? - possibly



Marking

- No correlation between self, peer or lecturer marking
 - Poor Rubrics?
 - Poor implementation?
 - Do people have the required knowledge?
 - Do people understand when a point is correct or not?
- Difference between student marking and that observed by Sadler and Good, 2006
 - Different students
 - Different culture

Sadler, P.M., & Good, E. (2006). The impact of self-and peer-grading on student learning. *Educational Assessment*, 11(1), 1-31.

Conclusion

- Self and Peer assessment was trialed in a second year module for one coursework
- Students seemed to find the exercise useful and learned from the experience
 - Exam results seem to indicate this is possible
- Comparison of marks illustrated no match between self, peer or lecturer marking
 - Poor rubrics, poor implementation?