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Brown, G. T. (2015). Self and Peer Assessment. In *Assessment & Grading Seminar Series*. Learning Resource Centre, Högskolan Kristianstad, Sweden. <a href="http://www.hkr.se/sv/lrc/seminarieserie/bedomning-och-betygsattning-ht2015/">http://www.hkr.se/sv/lrc/seminarieserie/bedomning-och-betygsattning-ht2015/</a>

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### Self & Peer Assessment

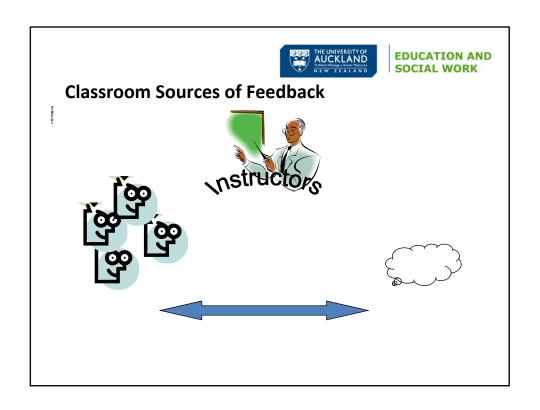
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Presentation at Högskolan Kristianstad, Sweden October, 2015



### A dilemma: what should we do?

- Imagine you're planning your course for the next year.
- On your previous semester's SETs, several students noted that they wanted more feedback within your course. You feel you're providing a great deal of feedback, but it is tied to the three major assessments in the course.
- You don't want to give your students more writing assignments, but you do want them to receive more feedback. It's a big class and you can't do as much oneon-one formative assessment as you'd like.
- Discuss: What do you do?
- How do you do it?
- What should the feedback look like?





### **Feedback**

- Learning depends on dollops of feedback
- Teachers cannot provide enough through interaction or written comments or reports
- But students can provide feedback
  - Their own critical evaluation of their own work—Self Assessment
  - Critical evaluation of other learner's work— Peer Assessment
  - SA & PA increase feedback if guided

# Assessment *for* learning involves students in assessment



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#### Characterised by

- High degree of student involvement
- 5 key strategies
  - Clarifying and sharing learning intentions and criteria for success;
  - Engineering effective classroom discussions, questions, and learning tasks;
  - Providing feedback that moves learners forward;
  - Activating students as the owners of their own learning; and
  - Activating students as instructional resources for one another
- Hence, peer & self-assessment (PASA)
  - But these depend on certain conditions....



### **Benefits PASA**

- Actively using assessment to guide learning increases learning outcomes
- Increased provision of detailed, positive and timely feedback on student work
- Student involvement in & responsibility for learning increases learning outcomes
- Potential to engage and empower students
- Helps students
  - develop self-regulation and metacognition and
  - better understanding of criteria used by instructors to evaluate their work



### Training effects

- Training of students in PASA leads to
  - Higher quality student academic products or processes (e.g., lessons, research proposals)
  - Higher quality of feedback to peers; better PA skills
  - Increased use of range of marks available (i.e., more discrimination)
  - Less variability in marks assigned to products (i.e., more consensus as to awarded mark or grade)
  - Improved ability to evaluate peers' feedback



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### Why bother?

- Teaches self-regulation
  - self-evaluation of the quality attributes of one's own work draws on metacognitive competencies (e.g., selfobservation, self-judgment, self-reaction, task analysis, self-motivation, and self-control)
- Associated with improved motivation, engagement, and efficacy
- Associated with reduced dependence on the teacher



### Positive performance effects of PA

- Improved writing
  - Higher quality after peer review of written essays
  - More suggestions carried out in revisions of written essays
- But several studies reported no difference in performance
  - See van Gennip et al. 2009 for studies



### Peer Assessment

- Appraisal of my work by a fellow learner in relation to a specific learning intention, goal, or set of criteria
  - Produce critical analysis of others' work
  - Receive critical appraisals of my own work.
  - collaboration in the appraisal of learning outcomes by those involved in the learning process



### Example: Peer Marking Technique

- The assessment item/task & assessment criteria discussed by teacher and students.
- Teacher assured that students have a good understanding as to the learning outcomes required.
- Completed assessment items are randomly distributed to students who complete a marking sheet identifying which criteria their peer had met and which grade/standard/mark to award.
- · These marks are moderated by the teacher
- Teacher and peer marking sheets are returned with the assessment item.

#### Factors affecting PA **EDUCATION AND SOCIAL WORK** Van Gennip, Segers, & Tillema (2009) Overview of clusters of assessment parameters Range of variation Parameter Cluster 1: Assessment description (why, what, when, where, how) Curriculum area/subject (Where) All Reasons for implementing peer assessment (Why) Of staff and/or students? Time saving or cognitive/affective gains? Summative or formative or both? Purpose (Why) Objectives measured (What) Outcomes (How) Examples: writing skills, presentation skills, professional skills Test score, open-ended feedback; quantitative or qualitative; credits, bonus points, or other incentives or reinforcement for participation Substitutional or supplementary? Relation to staff assessment (How) Contributing to assessees final official grade or not? Official weight (How) Place (Where) Time (When) In/out class Class time/free time/informally? 10 Requirement (How) Compulsory or voluntary for assessors/assessees? Cluster 2: Interaction 11 Directionality One-way, reciprocal, mutual? Privacy Contact Anonymous/confidential/public? Distance or face to face? Cluster 3: Composition feedback group Same or cross year of study? Ability Constellation assessors Individuals or pairs or groups? Constellation assessed Individuals or pairs or groups? Many variables to consider when deciding to implement PA



### Interpersonal characteristics

- Social and individual relationships between peers and possibly even with the instructor.
- Students are scoring their peers who might be their friends, enemies, or total strangers but they will have to face these people beyond the confines of the class....

# Reciprocity effects | in Peer Assessment



- friendship marking
  - high ratings to friends
- collusive marking
  - high ratings to fellow group members
- decibel marking
  - high ratings to dominant group members
- parasite marking
  - profiting from the efforts invested by fellow group members
- Cheng, W., & Warren, M. (1997). Having second thoughts: Student perceptions before and after a
  peer assessment exercise. Studies in Higher Education, 22(2), 233-239. doi:
  10.1080/03075079712331381064
- Pond, K., & Ul-Haq, R. (1997). Learning to assess students using peer review. Studies In Educational Evaluation, 23(4), 331-348.



### Cultural factors in reciprocity

BEd (Hons.) 2011 Sze Wah Students' perceptions towards peer Project, Michelle assessment in tertiary education in HKIEd LAM Chinese society

How would you evaluate a peer who did very poor work? What grade and/or comments would you give

Closeness	Grade	Comment
Good friend	False	Rich constructive comments on how to improve
Stranger in same class	Accurate	Vague, general, not helpful



### Psychological safety

- Belief that it is safe to take interpersonal risks in a group of people (not causing harm, being hurt by negative comments, attraction)
  - Peterson & Irving (2008, p. 245) NZ secondary students
    - "You can't assess your friends because they'll just be nice to you and they'll put all this nice stuff down"
  - Harris & Brown (2010). NZ secondary teacher:
    - "There's potential social, sort of, issues with students who
      have the potential to be nasty to each other, but I don't think
      they're going to in the class because they have to sign it as the
      marker."

### Psychological safety illustrated



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- Harris & Brown (2010). NZ Secondary school essay peer marking—a teacher tells us:
  - "Nancy ended up doing Joseph's and I think that half the girls in the class fancy Joseph and she passed him on a terrible piece of work, so at that stage I intervened and I talked to them both. I said to Joseph
    - "I think that Nancy is being very careful about your feelings here, but I'm going to tell you both that I think that you may know that it's a Not Achieved piece of work. You've only done one book, you don't have the second half of your assignment. You don't have these things here, um, Nancy has been really gentle with you but you need to know this is not a pass" and she's smiling really sweetly at him
  - And I'm thinking 'oh gosh'. There's the Nancy "I think Joseph is cute" weakness."



### Psychological safety illustrated

- Harris & Brown (2010). NZ Secondary students
  - Leader: So if your peer says it's good, is that good work?
  - Cathy: It could just be them being nice.
  - Eva: In case you give them a bad mark even though it was good
  - Rochelle: Or you are too biased or something
  - All girls: Yeah
  - Psychological Safety must be HIGH



### Value diversity

- Differences in opinion about what a team's task, goal or mission should be (especially as it applies to a common understanding of assessment purposes, objectives, criteria and standards)
  - Involving students in developing criteria, marking guides, standards or RUBRICS for scoring student work seems essential
  - However, these must be designed for ease of use by relative novices....
  - This must be LOW



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### Interdependence

- outcomes—extent to which team members believe that their personal benefits and costs depend on successful goal attainment by other team members;
- tasks—performance of one specific piece of work depends on the completion of one or more other tasks
  - Role interdependence—assessor & assessee (both must agree to being judged and judging)
  - This must be **HIGH**

### Students need to Trust themselves



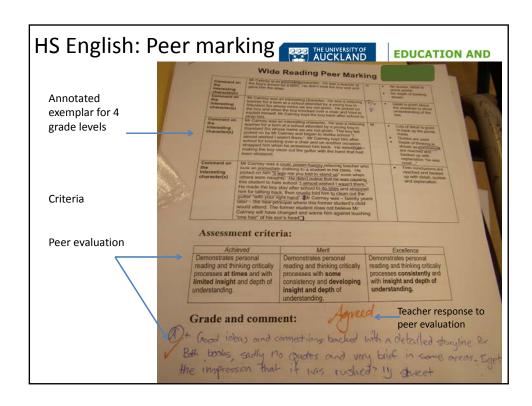
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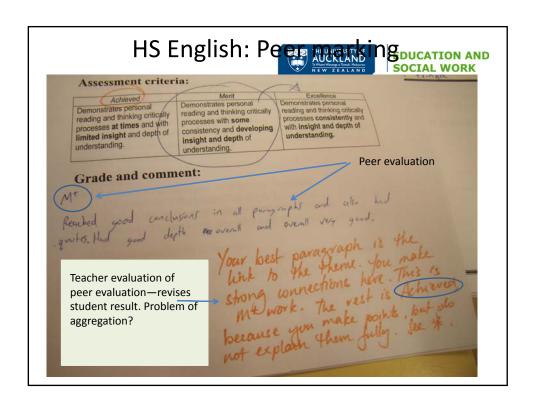
- Confidence in both their own and peers' abilities as assessors (students are naturally sceptical about value of peer comments)
  - Peterson & Irving (2008) NZ secondary student
    - "Friends don't really count...because it's what the teacher says"
  - Harris & Brown (2010). NZ secondary teacher:
    - "Um, and there are students who just don't have a handle on the criteria and will mark it wrongly, but part of that was the point of going through and doing a crosscheck. And it's probably quite valuable to find out when students mark something quite wrongly because they obviously don't have a handle on what they're aiming for and it's potentially quite valuable to find out who that is and if you feel that that's an excellence, maybe we need to talk through what an excellence is made up of."



## NZ High School Teacher: Peer marking example

- Students were put in pairs of their choosing to mark each others' wide reading assignments using set criteria and exemplars. They also had to write a comment where they provided feedback and explained their grading.
- Sylvia then read the assignments and evaluated the peer marks and feedback. If she agreed, the student received the mark given by the peer. If she disagreed, she changed the mark. In either case, she commented on and added to the peer feedback.
- The assignment was then returned to the student who originally wrote it (not the marker).





## Students' doubt: Expertise



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- Nancy: It [Peer assessment] can, like, in a way it can be helpful cause it's good to know what other people say, but then it's also kind of good when the teacher marks your stuff, because, I mean, she knows. And like we don't really know as much as she does and so it's like "oh yeah."
- Cathy: But also when your peers mark your work, it's coming from like the point of view that's the same as your age, so they can tell you coming from here, but it's good when the teacher marks it because ... you know if she says it's good, it's good because she knows.
- Leader: So if your peer says it's good, is that good work?
- Cathy: It could just be them being nice.

...

- Eva: In case you give them a bad mark even though it was good
- Rochelle: Or you are too biased or something
- All girls: Yeah

# What is self-assessment?



- Klenowski (1995, p. 146) self-evaluation requires students "to evaluate and monitor their own performance in relation to identified criteria or standards"
- self-assessment is a descriptive and evaluative act carried out by the student concerning his or her own work and academic abilities.
- Reasonably similar, no?

# Clarke's process for developing self-evaluation



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- Developing jointly success criteria
  - Having shared, clear learning intentions
    - Explicit attention to what and why something is being learned
    - Using the language of learners
    - We are learning to.... (WALT-Shirley Clarke)
  - Involving students in defining what quality and progress are
    - How will we know we have learned to....?
    - What are we looking for?

# Example: Self Marking



- Students are provided with detailed model answers and commentaries for the purpose of comparing their own responses.
- In addition, a marking sheet is provided upon which students are asked to detail the differences between the model responses and their own and to award a mark.
- Teaching staff moderate the responses, maintaining or modifying the marks awarded.



### Example: Class generated criteria

- Assessment criteria for an assessment item are generated and agreed by the class in discussion with the staff member.
- These criteria are used by each student to develop a critique of their own assessment item.
- Both the assessment item and the critique are provided to the staff member who marks the assignment and then compares that critique with the student's critique.
- Marks may be awarded for both the assignment and the critique.

Study	Type of Self-Assessment	Effect (d)
Vall, 1982	Self-marking with self-selected reinforcements	1.62
Ramdass & Zimmerman, 2008	Self-rated confidence in accuracy of own work	1.50
Schunk, 1996	Self-rated confidence in accuracy of own work (Performance goal condition)	1.40
Andrade, Du, & Wang, 2008	Rubric guided judgment	.87
Sadler & Good, 2006	Rubric guided judgment	.82
an Kraayenoord & Paris, 1997	Student verbal self-assessments evaluated by researchers	.77
Andrade, Du, & Mycek, 2010	Rubric guided judgment	.66
lewitt, 2001	Self-rated performance	.59
Olina & Sullivan, 2002	Self-rated written work	.57
Daiute & Kruidenier, 1985	Computer assisted monitoring of work	.52
AcDonald & Boud, 2003	Monitoring of self-regulation processes	.45
Ross, Hogaboam-Gray, & Rolheiser, 2002	Generic self-assessment of mathematics	.40
Glaser et al., 2010	Self-evaluation of written work	.38
Schunk, 1996	Self-rated confidence in accuracy of own work (Learning goal condition)	.38
Miller, Duffy, & Zane, 1993	Self-correction of homework	.32
Coivula, Hassmén, & Hunt, 2001	Self-rated confidence in accuracy of quantitative work	.29
3arling, 1980	Self-monitoring of accuracy with self-selected rewards and standards	.28
Harward, Allred, & Sudweeks, 1994	Immediate self-correction of test performance	.27
Ross, Rolheiser, & Hogaboam-Gray, 1999	Rubric guided judgment	.18
Koivula, Hassmén, & Hunt, 2001	Self-rated confidence in accuracy of verbal work	.12
Ross, Rolheiser, & Hogaboam-Gray, 1998a	Self-assessment survey rating of performance and strategy usage on a mathematics test	.08
Andrade & Boulay, 2003	Rubric guided judgment (response to literature essay)	.04
Andrade & Boulay, 2003	Rubric guided judgment (historical fiction essay)	04



#### **Problems**

- Operational:
  - which conditions need to be in place to create positive learning effects?
- Interpersonal:
  - what social factors need to be in place to permit positive learning effects?

The rarely asked studentinvolved assessment questions



- How accurate is my response?
- How close is my response to that of an expert or experienced person?
- How close is my response to that which is expected of students at my level of learning?
  - All of these above are to do with REALISM
- What aspects of my response are superior and which are deficient?
- What steps should I take next in addressing those aspects which are deficient and in extending those which are superior?



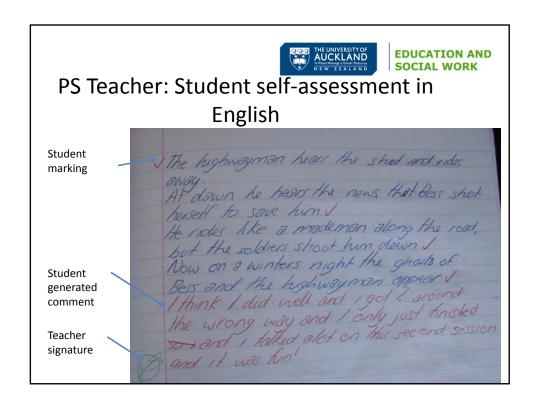
### Things that make PASA difficult

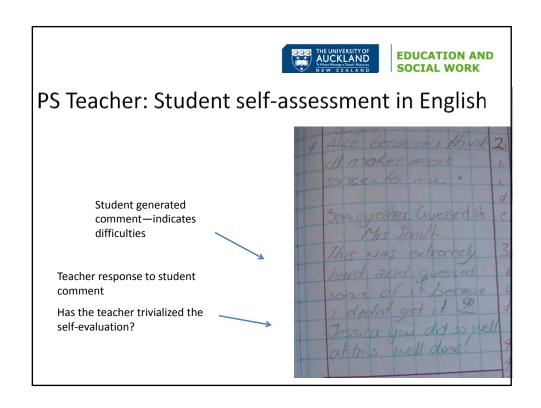
 Here are some salient issues in PASA that need to be considered and addressed in design

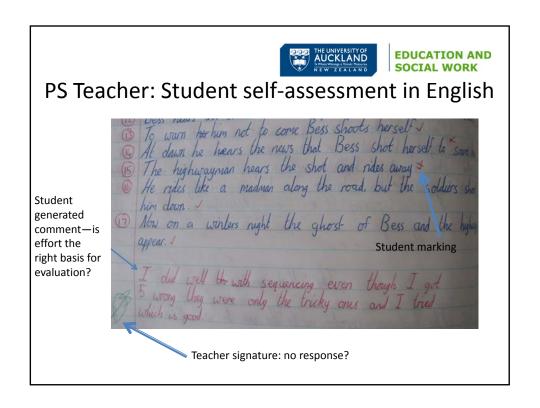


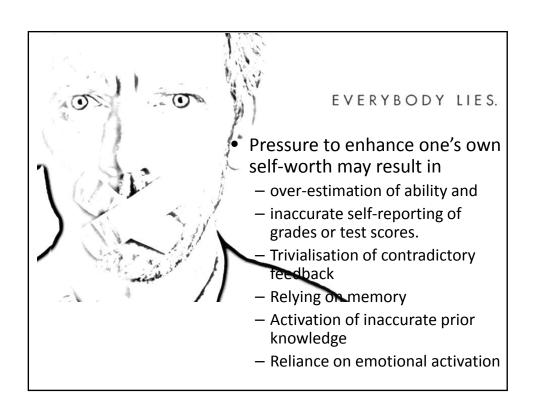
### Humans are bad judges

- Dunning, Heath, and Suls (2004) humans tend to:
  - Be unrealistically optimistic about their own abilities (e.g., "I can finish this in just one week"),
  - Believe that they are above average (e.g., no one admits to being a poor driver, lover, friend, etc.),
  - Neglect crucial information (e.g., ignore key performance indicators that should be used to evaluate their work), and
  - Have deficits in their information (e.g., simply do not know what to look for in determining the quality of their work).
- Applies to teachers as well as students











EVERYBODY LIES.

- Students tend to take their own effort, which ought to be independent of quality, into account when evaluating their work
- Pressure can come from
  - Lack of psychological safety in classrooms (peers & teachers)
  - Cultural processes that maximise 'face'

### Lying with selfassessment



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- Howard: If she says, "You guys have to get a bit more detailed for your comments", sometimes, I just make stuff up.
- Sally: Yesterday, we were learning to simplify fractions and I couldn't actually understand what she was saying so I don't actually know how to simplify fractions.

Researcher: That's okay. Have you told Mrs. XXXX that? Did you put red in your traffic light?

Sally: I did orange

Researcher: And why did you do orange?

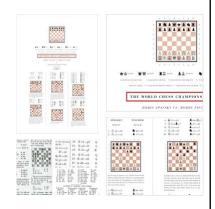
Sally: Um, Jason was looking at my work and if I did red, he'd think I was dumb, so I just did orange.

# It's hard to know if you're good at complex stuff



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- Much of what makes one competent in many domains is relatively ill-defined.
  - Consider the great difficulty teachers have in scoring student work against standards or rubrics, often providing inaccurate or inconsistent judgments of student work.



## Age and schooling experience matter



- · Younger children tend to be
  - more optimistic , lenient, or generous in their selfestimations of performance than older children
- Older students' self-ratings tend to
  - Lower but correlate more strongly with teacher ratings or test scores
  - Be generally more sophisticated
- Experience within domain
  - Seniors in Freshman course as inaccurate as freshmen but not in senior level course
    - subject knowledge not age of student



### Academic ability matters

- Higher performing students tend to evaluate their own work differently to lower performing students
  - More severe in self-evaluation
  - Own scores correlate more highly with teacher and test measures
- Lack of competence in a domain (e.g., lowprogress learners or beginners) has a dual handicapping effect;
  - not very good in the domain and not aware that they are not good in the domain



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### Task difficulty matters

- Familiar and predictable tasks permit more accuracy
- More technically difficult tasks require greater attention and effort which probably interferes with ability to monitor and selfrate performance
- formal instruction in tested content prior to testing improves accuracy
- Linking to an assessment of the same proficiency improves accuracy
- Practice (e.g. TP) vs. Product (e.g., essay) vs. Process (e.g., oral or group participation)
  - Practice (r=.54) more inaccurate than Product (r=.75) or Process (r=.83)
- Science/engineering more accurate, perhaps because
  - Use full score range and Objective scoring





### Type of criteria matters

- Absolute assessments (against fixed criteria/standards) more accurate than relative assessments (compared to other people)
- More specific social comparison (i.e., "those in my class") more accurate than a general social comparison (i.e., "all children my age")
- Global/holistic ratings (not analytic) made in light of known criteria or guidelines produce highest agreement (r=.77) and lowest discrepancy (d=.17)



# Overcoming inaccuracy: Becoming realistic



- Training improves accuracy.
  - teach students to use explicit, objective criteria
  - involve students in the co-construction of criteria for the rubric and with practice at using the rubric
  - ensure students are motivated to pay attention to the rubric and
  - get students to justify their evaluations explicitly to peers
  - Use groups of peers involved in the rating process of no more than 2-7



### NZ PS: Traffic Light self-assessment example

 After a small group math lesson on subtracting fractions: Danielle: Have we got these things in our heads, all of us

Students: Yes

Danielle: We can see how it works with the blocks?

Students: Yes

Danielle: Okay, draw me the traffic lights showing your understanding. Orange means ah, yes and no. Green means you're doing well. Red, I need one more lesson on

Danielle used this self-assessment technique after all small group mathematics lessons and generally looked at what students had written before they left the mat.



**EDUCATION AND** SOCIAL WORK

### Teacher intentions for the Traffic Light self-

- assessment To judge how well students have understood the lesson and adjust instruction "And when they come to me and show it to me, it's always registered in my head. And I know where they are. Today Jim was orange. He was not green. So I asked him to stay down on the mat."
- A personal evaluation of her lesson "...if I get a green, I'm telling myself my lesson was planned well. If I get a red, that's telling me 'Danielle, you're going off track. Hold it, caution. That's a caution; that's a hazard there... I feel I'm not making maths reachable for them. Approachable, enjoyable, relevant" relevant.

Interesting choice of words—should learning be fun?



## Students' interpretations of the Traffic Light self-assessment

Students expressed concerns relating to:

Consequences of honest reporting

Chelsea: Because if you put red, you feel like she might tell us off or something.

Natasha: She'll tell us to listen more or something, like we weren't listening.

Michael: She always turns it against us if we're not learning.



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#### Harris & Brown (2010). NZ secondary students:

- Hugh: Our teacher ran out of time, so we just did it... She
  just double checked it and then, yeah, just agreed with our
  grade or just changed it
- Cathy: Or disagreed.
- Nancy: It wasn't that she ran out of time, it's because she wanted us to mark it to see what we thought
- Joe: She also wanted to see like if we knew what we were supposed to be looking for in our wide reading. She was like, "if you mark it and I think you marked it real wrong," she wants to see you, not the person that stuffed it up.
- This must be **HIGH**

### Why are students so negative about PASA?



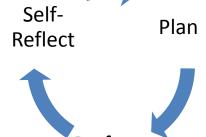
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- Possible explanations
  - Teachers have not persuaded students that participating helps improve their learning.
  - PASA practices do not count towards the high-stakes qualifications assessments
  - The impact of the high-stakes qualifications system prevents interactive-informal practices being implemented
    - These are good but the exam is real?
  - PASA isn't happening.
  - Students have concerns about the reliability and validity of this kind of assessment practice.
  - Students may believe that teacher-controlled assessment practices lead to the greatest information to the student and the teacher about how to improve student learning

#### **BUT**



- Maybe it shouldn't be assessment!
- But rather a component of Self-regulated learning



#### PA Recommendations



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(Falchikov & Goldfinch, 2000)

- Keep peer groups doing peer assessment small
- Do it with traditional academic school content, not professional practice
- Restrict peer rating to overall holistic mark, with well understood rubric/criteria
- Involve students in design or discussions about rubric/criteria
- Analyse peer—teacher agreement with correlations not proportion grade agreement



#### Conclusion—is PASA the answer?

- The use of peer and self-assessments is complex and requires great sophistication
  - Students are novices and learn in public spaces
  - Consider recommendations for better PASA:
     (e.g., Falchikov & Boud, 1989; Falchikov & Goldfinch, 2000)
    - Holistic ratings rather than analytic
    - Anonymous marking mechanisms
    - Rubrics with annotated exemplars
    - Content expertise development
    - Friendship comments not grades
    - Don't use it as assessment at all?

### Selected Readings



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