Self-assessment in higher education: Learning vs. evaluation [Auto-Evaluación en educación superior: Aprendizaje vs Evaluación]

Gavin T L Brown
The University of Auckland
Email: gt.brown@auckland.ac.nz

THE UNIVERSITY OF AUCKLAND
Te Whare Wānanga o Tāmaki Makaurau
NEW ZEALAND

EDUCATION AND SOCIAL WORK

THE UNIVERSITY OF AUCKLAND
Te Whare Wānanga o Tāmaki Makaurau
NEW ZEALAND

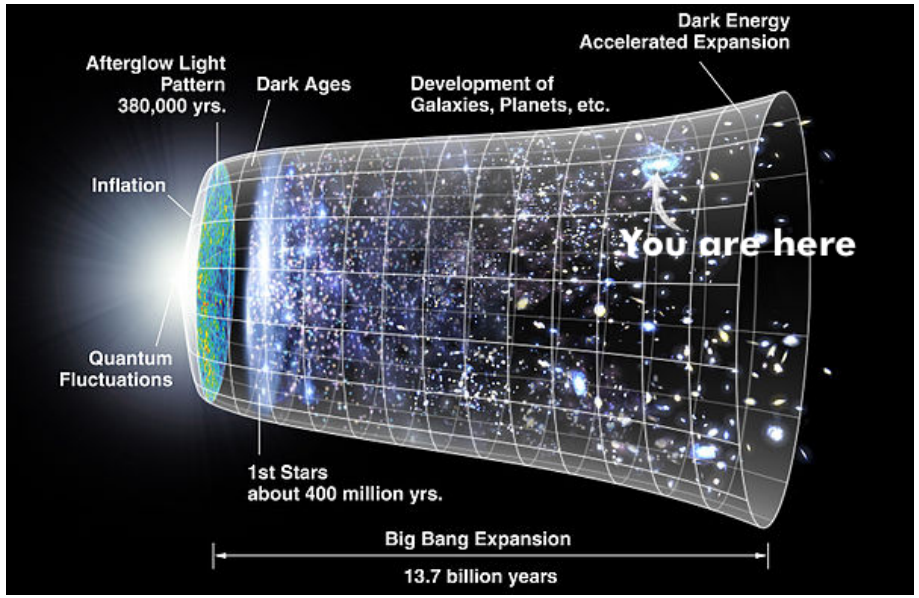
EDUCATION AND SOCIAL WORK

Definitions & Processes

Myself or My work?

THE UNIVERSITY OF AUCKLAND
Te Whare Wānanga o Tāmaki Makaurau
NEW ZEALAND

EDUCATION AND SOCIAL WORK



WORK IN PROGRESS

Self-assessment: a misnomer?
It's not me, but my self-regard, esteem, prestige get in the way
Am I scoring myself or my work? Is my work, me?
Maybe Evaluative Judgment is better?

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.

Typologies of SA

- Higher education
  - 1.1 to 1.3
- School sector
  - 1.4, 1.5

Panadero, Brown, & Strijbos, 2016

Table 1 Self-assessment typologies

Authors	Criterion	Categories
1.1. Boud and Brew	Knowledge interest (authors consider it assessment purpose)	a. Technical interest b. Communicative interest c. Emancipatory interest
1.2. Tan	Involvement: teacher vs. student in a continuum	a. Self-awareness b. Self-appraisal c. Self-determined assessment d. Self-assessment practice e. Self-assessment task f. Self-grading/self-testing
1.3. Taras	Power and transparency	a. Self-marking b. Sound standard of SSA c. Standard model d. Integrated tutor and peer feedback before self-assessment e. Learning contract
1.4. Panadero and Alonso-Tapia	Presence and form of the assessment criteria	a. Standard self-assessment b. Rubrics c. Scripts (additionally prompts and cues)
1.5. Brown and Harris	Student response format	a. Self-rating b. Self-markings or self-estimates of performance c. Criteria- or rubric-based assessments

Assessment *for* learning involves students in assessment

- 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, self-assessment (SA)
  - But these depend on certain conditions….

Why bother?

THE UNIVERSITY OF AUCKLAND
Te Whare Wānanga o Tāmaki Makaurau
NEW ZEALAND

EDUCATION AND SOCIAL WORK

- Teaches self-regulation
  - self-evaluation of the quality attributes of one's own work draws on metacognitive competencies (e.g., self-observation, 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

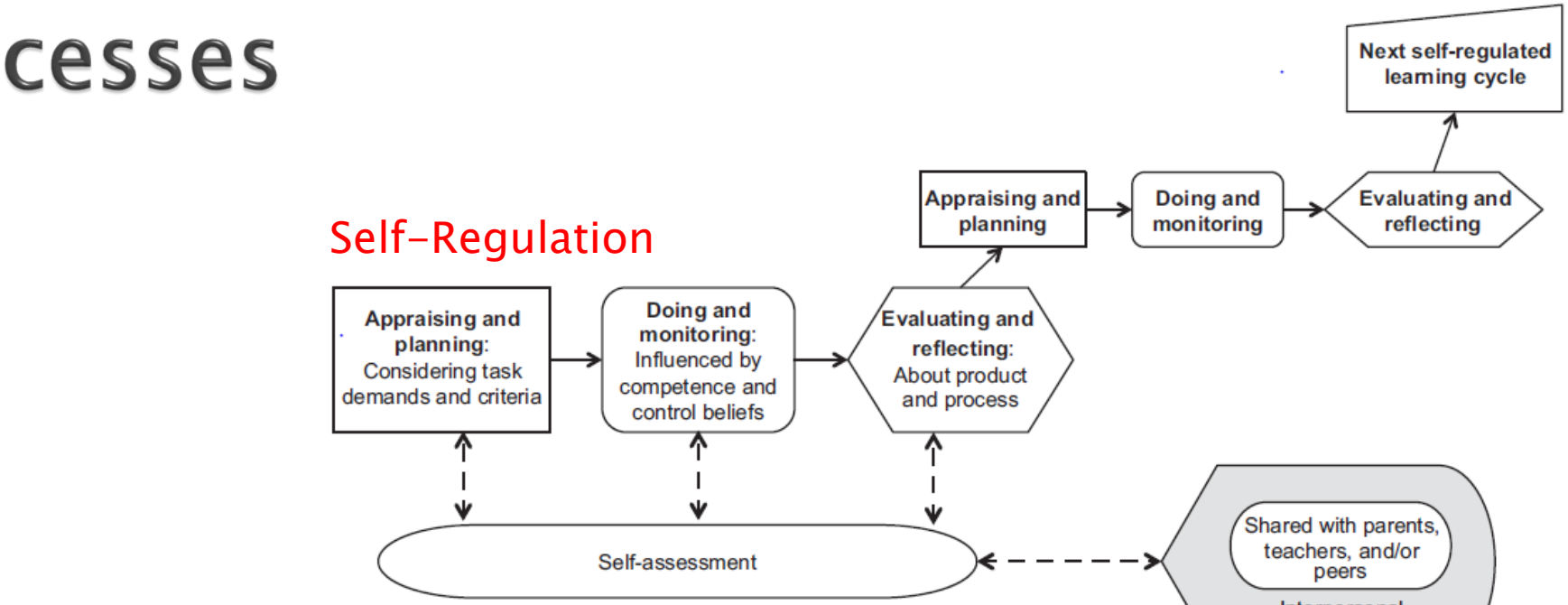
Why bother?

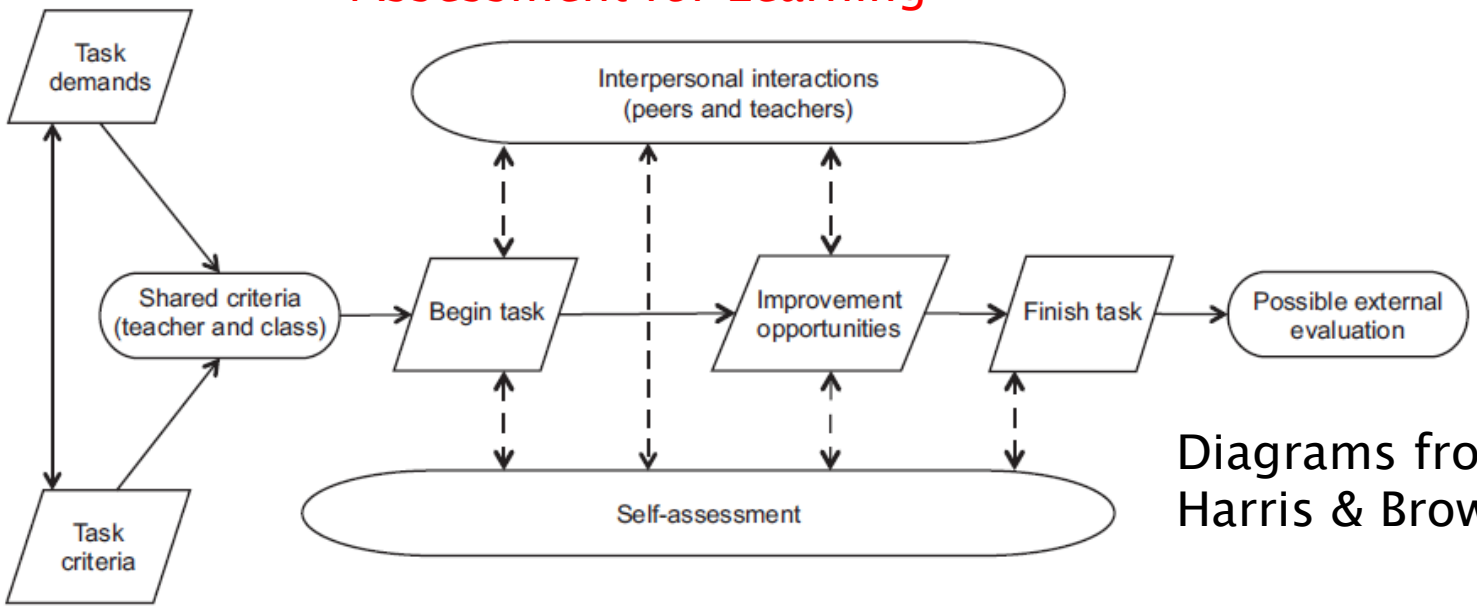
THE UNIVERSITY OF AUCKLAND
Te Whare Wānanga o Tāmaki Makaurau
NEW ZEALAND

EDUCATION AND SOCIAL WORK

- All learners and workers, as they increasingly take responsibility for their own actions and outcomes (i.e., self-regulation), have to be able to monitor and evaluate their work processes and products
  - Have I done the right things?
  - Is it good enough? Have I met expectations?
  - What could I improve on?
  - What is missing?
  - What was hard for me to do?
  - Where do I need help?
- Sometimes called 'Evaluative Judgment'

SA processes



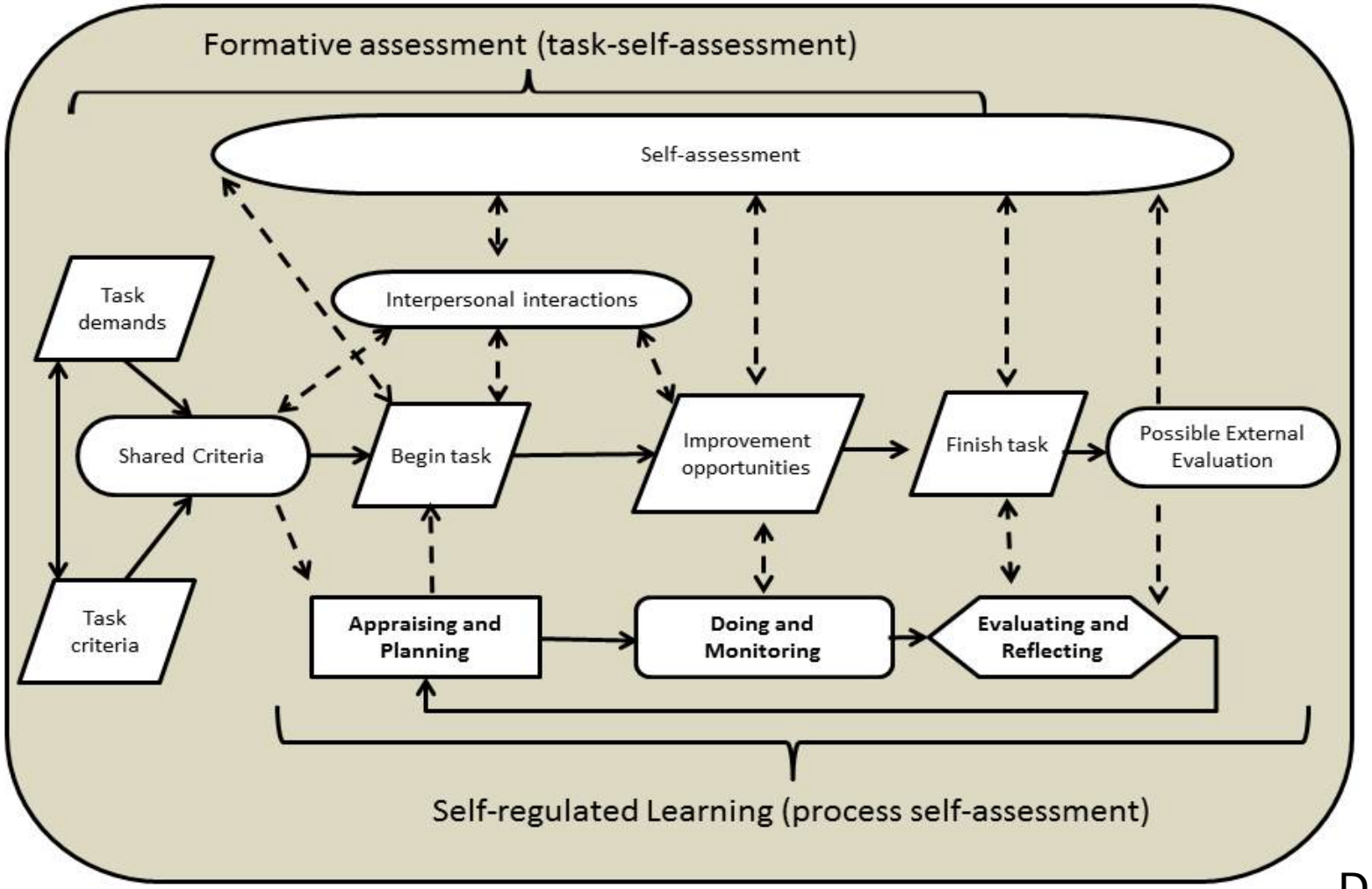


Diagrams from Harris & Brown 2018

Integration SRL and AfL

THE UNIVERSITY OF AUCKLAND
Te Whare Wānanga o Tāmaki Makaurau
NEW ZEALAND

EDUCATION AND SOCIAL WORK

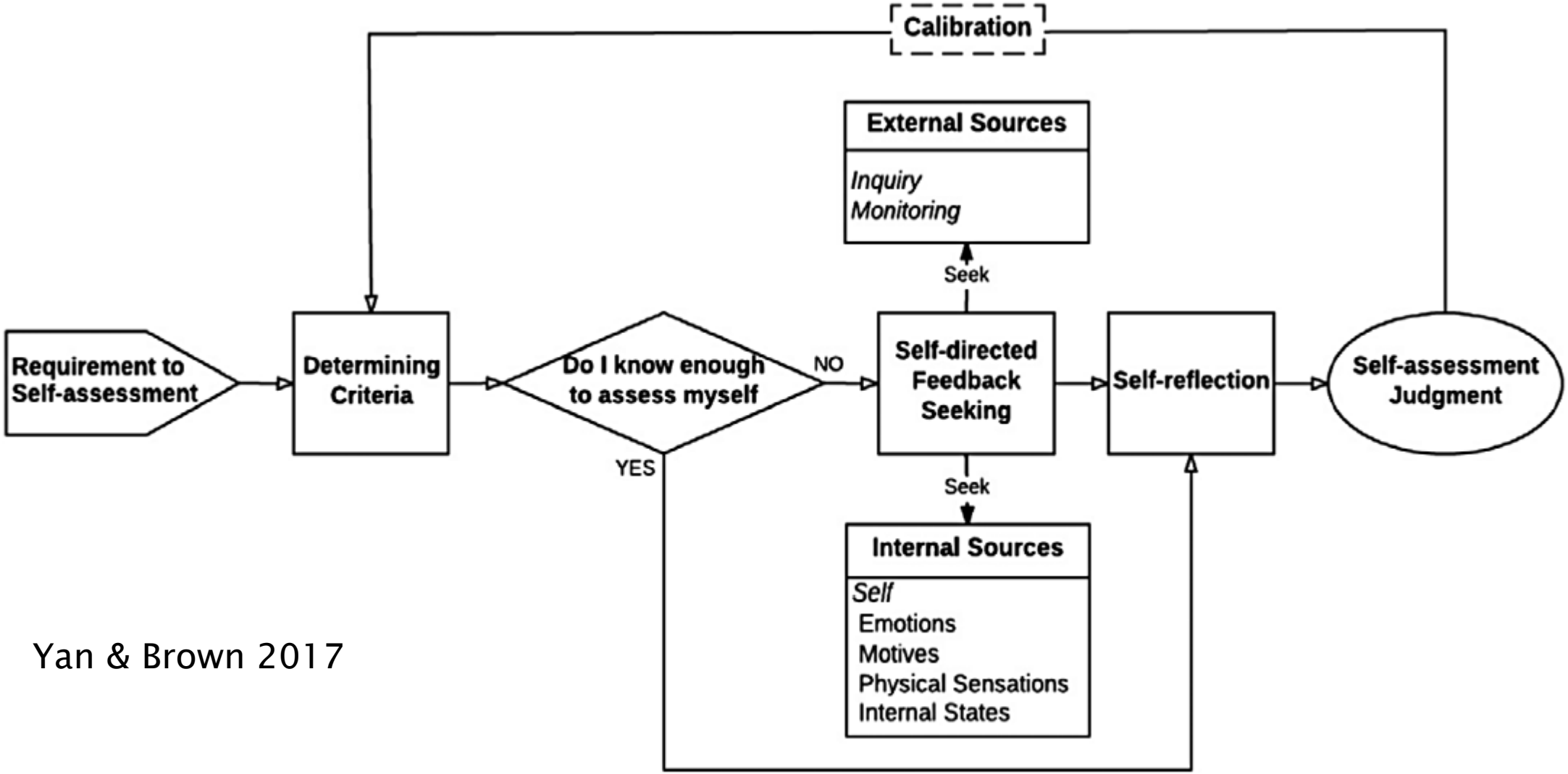


Diagrams from
Harris & Brown 2018

What do students do?

THE UNIVERSITY OF AUCKLAND
Te Whare Wānanga o Tāmaki Makaurau
NEW ZEALAND

EDUCATION AND SOCIAL WORK



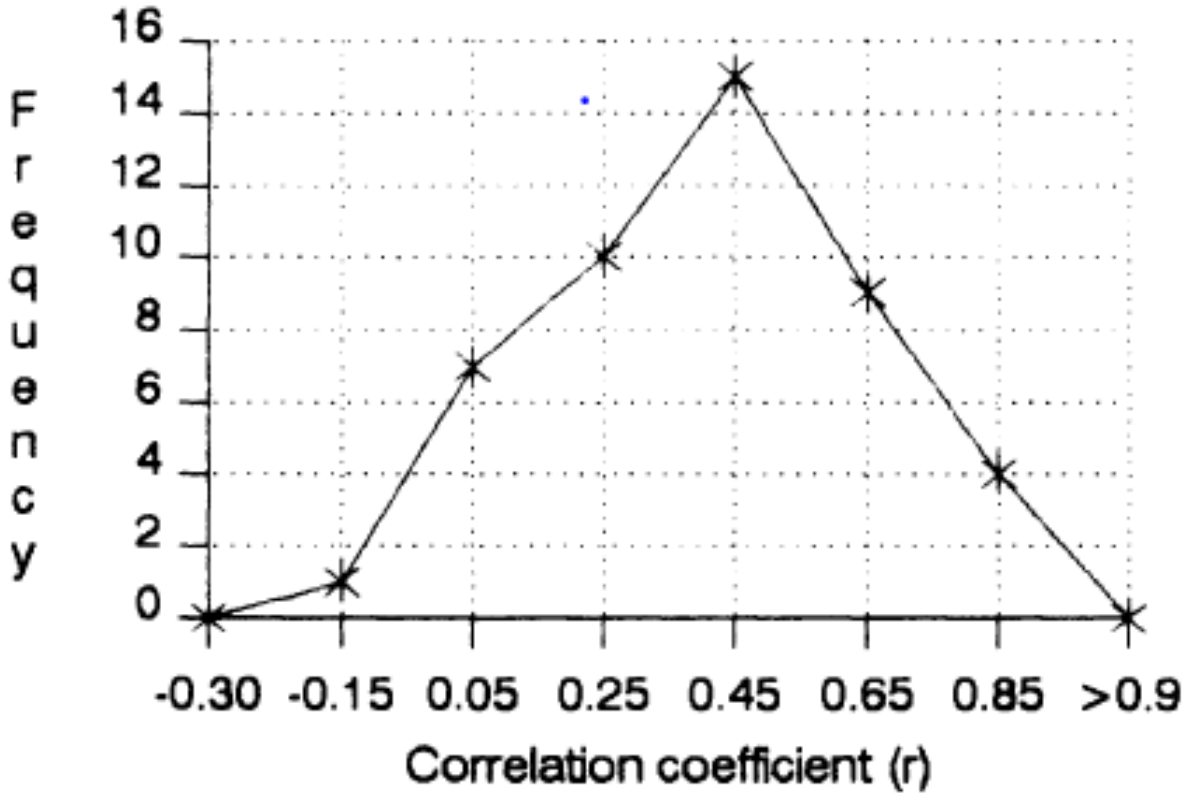
Yan & Brown 2017

Figure 1. The cyclical self-assessment process.

Self-assessment is generous

- Falchikov & Boud, 1989.

Scores of zero=agreement between students and faculty
But MOST students over-rate themselves



Student similarity to faculty?

THE UNIVERSITY OF AUCKLAND
Te Whare Wānanga o Tāmaki Makaurau
NEW ZEALAND

EDUCATION AND SOCIAL WORK

Students tend to overrate themselves, esp. social science,
Type of activity very similar discrepancy/agreement

TABLE 5
Comparison of mean common metrics

Scores are similar if *d* is small and *r* is big

	d	*r*	%
A. For studies in the areas of science and social science			
Science	0.13 ($n = 7$)	0.39 ($n = 13$)	73.49 ($n = 6$)
Social science	0.48 ($n = 10$)	0.33 ($n = 13$)	57.85 ($n = 9$)
B. For professional practice versus traditional academic activities			
Professional practice	0.54 ($n = 16$)	0.30 ($n = 24$)	77.56 ($n = 7$)
Traditional academic activity (process)	0.00 ($n = 1$)	0.37 ($n = 4$)	70.50 ($n = 2$)
Traditional academic activity (product)	0.56 ($n = 14$)	0.54 ($n = 17$)	54.30 ($n = 11$)

Note. *d* = effect size subset; *r* = correlation coefficient subset; % = proportions subset.

Practices are complex and hard to judge

Effect of SA in K-12

Brown & Harris, 2013

Study	Type of Self-Assessment	Effect (*d*)
Wall, 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
van Kraayenoord & Paris, 1997	Student verbal self-assessments evaluated by researchers	.77
Andrade, Du, & Mycek, 2010	Rubric guided judgment	.66
Hewitt, 2001	Self-rated performance	.59
Olina & Sullivan, 2002	Self-rated written work	.57
Daiute & Kruidenier, 1985	Computer assisted monitoring of work	.52
McDonald & 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
Koivula, Hassmén, & Hunt, 2001	Self-rated confidence in accuracy of quantitative work	.29
Barling, 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

Median

THE UNIVERSITY OF AUCKLAND
Te Whare Wānanga o Tāmaki Makaurau
NEW ZEALAND

EDUCATION AND SOCIAL WORK

Why doesn't it work as assessment?

Humans are bad judges

THE UNIVERSITY OF AUCKLAND
Te Whare Wānanga o Tāmaki Makaurau
NEW ZEALAND

EDUCATION AND SOCIAL WORK

- **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

EDUCATION AND SOCIAL WORK

- Pressure to enhance one's own self-worth may result in
  - over-estimation of ability and
  - inaccurate self-reporting of grades or test scores.
  - Trivialisation of contradictory feedback

EDUCATION AND SOCIAL WORK

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’

Age and schooling experience matter

THE UNIVERSITY OF AUCKLAND
Te Whare Wānanga o Tāmaki Makaurau
NEW ZEALAND

EDUCATION AND SOCIAL WORK

- Younger children tend to be
  - more optimistic , lenient, or generous in their self-estimations 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

THE UNIVERSITY OF AUCKLAND
Te Whare Wānanga o Tāmaki Makaurau
NEW ZEALAND

EDUCATION AND SOCIAL WORK

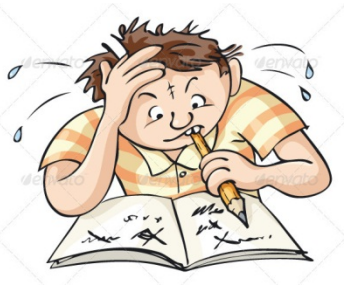
- Higher performing students tend to evaluate their own work differently to lower performing students
  - More severe in self-evaluation
  - Own scores correlate more highly with teacher and test measures
- Lack of competence in a domain (e.g., low-progress learners or beginners) has a **dual handicapping**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

Task difficulty matters

THE UNIVERSITY OF AUCKLAND
Te Whare Wānanga o Tāmaki Makaurau
NEW ZEALAND

EDUCATION AND SOCIAL WORK

- Familiar and predictable tasks permit more accuracy
- More technically difficult tasks require greater attention and effort which probably interferes with ability to monitor and self-rate performance
- formal instruction in tested content prior to testing improves accuracy
- Linking to an assessment of the same proficiency improves accuracy

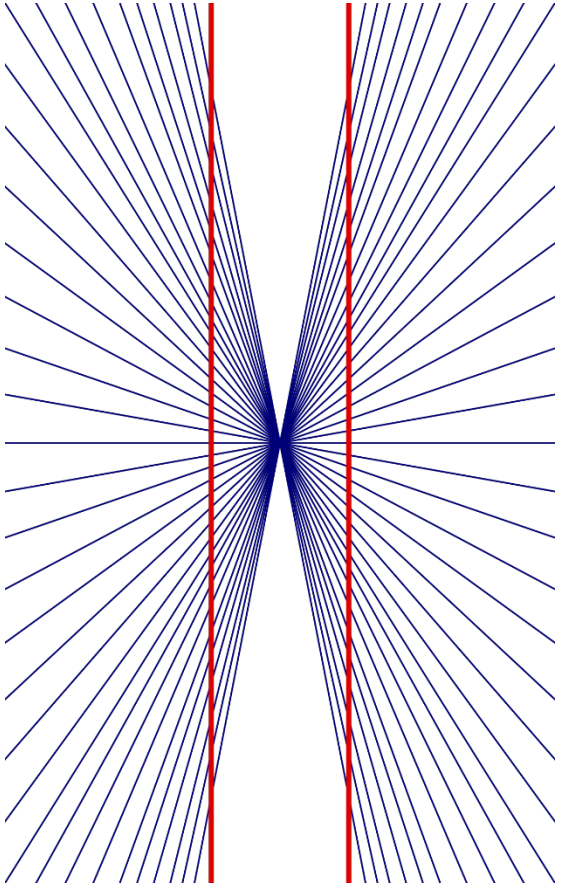


Problem of metacognitive illusion

THE UNIVERSITY OF AUCKLAND
Te Whare Wānanga o Tāmaki Makaurau
NEW ZEALAND

EDUCATION AND SOCIAL WORK

- …when students are left to their own devices, many of them use ineffective methods to monitor their learning, which can produce overconfidence and underachievement.
  - This problem is also likely promoted by textbooks that include end-of-chapter lists of key terms, which may encourage students to use term **familiarity** as a basis for their judgments.
  - For students who actually attempt to retrieve the definitions, they would then face the added difficulty of needing to work back through the chapter to locate the correct definition to compare to their response.
  - And even for students who do compare their answer to the correct definition, their self-score judgments would still show considerable overconfidence



Dunlosky & Rawson, 2012.

THE UNIVERSITY OF AUCKLAND
Te Whare Wānanga o Tāmaki Makaurau
NEW ZEALAND

EDUCATION AND SOCIAL WORK

Solutions & Responses

The virtue of realism

THE UNIVERSITY OF AUCKLAND
Te Whare Wānanga o Tāmaki Makaurau
NEW ZEALAND

EDUCATION AND SOCIAL WORK

- A realist stance requires validation evidence that SA describes as accurately as possible the actual characteristics of the self's performance or product.
- Holding positive beliefs and illusions about one's performance contributes to task motivation and performance goals, in contrast to having negative, pessimistic illusions about one's performance
- Nonetheless, in the long term, it seems desirable that students overcome both false positive and negative illusions and become realistic in their SA
- Whatever benefits that may accrue to the self in thinking unrealistically about the quality of one's own work, these are likely to be potentially misleading, especially should the student reach an inaccurate, negatively biased self-appraisal

Overcoming inaccuracy: Becoming realistic

THE UNIVERSITY OF AUCKLAND
Te Whare Wānanga o Tāmaki Makaurau
NEW ZEALAND

EDUCATION AND SOCIAL WORK

- 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
  - get students to justify their self-evaluations explicitly
  - Don't make it count –it's not really assessment
  - Reward for being honest no matter what the quality of performance
    - Perhaps give credit for doing it

Overcoming inaccuracy: Becoming realistic

THE UNIVERSITY OF AUCKLAND
Te Whare Wānanga o Tāmaki Makaurau
NEW ZEALAND

EDUCATION AND SOCIAL WORK

- Require
  - a self-reflective component in course-work assignment so that students gain credit/marks for identifying ways in which their work did not meet or exceeded important criteria
    - *What would you change before I read it?* [good, no go and do so]
  - A response to feedback that shows what I did in response and why
- Teachers explicitly monitor SSA comments and considerately provide feedback that corrects any illusions of competence or incompetence

Implications: instructional practice

THE UNIVERSITY OF AUCKLAND
Te Whare Wānanga o Tāmaki Makaurau
NEW ZEALAND

EDUCATION AND SOCIAL WORK

- Ross (2006)
  - Students need to be involved in the process of establishing criteria for evaluating work outcomes;
  - Students need to be taught how to apply those criteria;
  - Feedback from others (i.e., teachers and peers) is needed so that students can move from inaccurate, false self-perceptions of their work to more accurate comprehension of the quality of their work; and
  - Students need to be taught how to use other assessment data (e.g., test scores or graded work) to improve their work.
- Brown & Harris (2012)
  - Psychological safety in the implementation of self-evaluation critical. Children must know that it is safe to disclose low-performance and that they do not need to resort to score-enhancement strategies

Conclusion—is SA the answer?

THE UNIVERSITY OF AUCKLAND
Te Whare Wānanga o Tāmaki Makaurau
NEW ZEALAND

EDUCATION AND SOCIAL WORK

- The use of self-assessment is complex and requires great sophistication
  - Students are novices and learn in public spaces—so be careful
  - Teach them systematically how to do it before making it count
  - Teach them to value honesty, truthfulness
  - But maybe better never use it for grading
    - Think of it as a tool for becoming a better worker, citizen, student

References

- Boud, D., & Falchikov, N. (1989). Quantitative studies of student self-assessment in higher education: A critical analysis of findings. *Higher Education, 18*(5), 529-549. doi:10.1007/BF00138746
- Brown, G. T. L., & Harris, L. R. (2013). Student self-assessment. In J. H. McMillan (Ed.), *The SAGE handbook of research on classroom assessment* (pp. 367-393). Thousand Oaks, CA: Sage. doi:10.4135/9781452218649.n21
- Brown, G. T. L., & Harris, L. R. (2014). The future of self-assessment in classroom practice: Reframing self-assessment as a core competency. *Frontline Learning Research, 3,* 22-30. doi:10.14786/flr.v2i1.24
- Brown, G. T. L., Andrade, H. L., & Chen, F. (2015). Accuracy in student self-assessment: Directions and cautions for research. Assess*ment in Education: Principles, Policy and Practice, 22*(4), 444-457. doi:10.1080/0969594X.2014.996523
- Dunlosky, J., & Rawson, K. A. (2012). Overconfidence produces underachievement: Inaccurate self evaluations undermine students' learning and retention. *Learning & Instruction, 22*(4), 271-280. doi:10.1016/j.learninstruc.2011.08.003
- Dunning, D., Heath, C., & Suls, J. M. (2004). Flawed self-assessment: Implications for health, education, and the workplace. *Psychological Science in the Public Interest, 5*(3), 69-106.
- Falchikov, N., & Boud, D. (1989). Student self-assessment in higher education: A meta-analysis. *Review of Educational Research, 59(4), 395-430.*
- Klenowski, V. (1995). Student self-evaluation processes in student-centred teaching and learning contexts of Australia and England. *Assessment in Education: Principles, Policy & Practice, 2*(2), 145-163.
- Panadero, E., Brown, G. T. L., & Strijbos, J-W. (2016). The future of student self-assessment: A review of known unknowns and potential directions. *Educational Psychology Review, 28*(4), 803-830. doi:10.1007/s10648-015-9350-2
- Yan, Z., & Brown, G. T. L. (2017). A cyclical self-assessment process: Towards a model of how students engage in self-assessment. *Assessment and Evaluation in Higher Education, 42*(8), 1247-1262. doi:10.1080/02602938.2016.1260091

THE UNIVERSITY OF AUCKLAND
Te Whare Wānanga o Tāmaki Makaurau
NEW ZEALAND

EDUCATION AND SOCIAL WORK

If you want to read more

- Using Self-Assessment to Improve Student Learning
  - Student Assessment for Educators series
  - https://www.routledge.com/Using-Self-Assessment-to-Improve-Student-Learning/Harris-Brown/p/book/9781138283374

  - Amazon