



# Feedback literacy for automated feedback



**@CarlessDavid**

**Faculty of Education, HKU**

**CHERA, March 16, 2023**

**<https://davidcarless.edu.hku.hk/>**



# Designing learning environments

Assessment and feedback designs are  
firmly interlinked

(After Boud & Molloy, 2013)





# Key proposition

Assessment adjustments that are positive in  
their own right

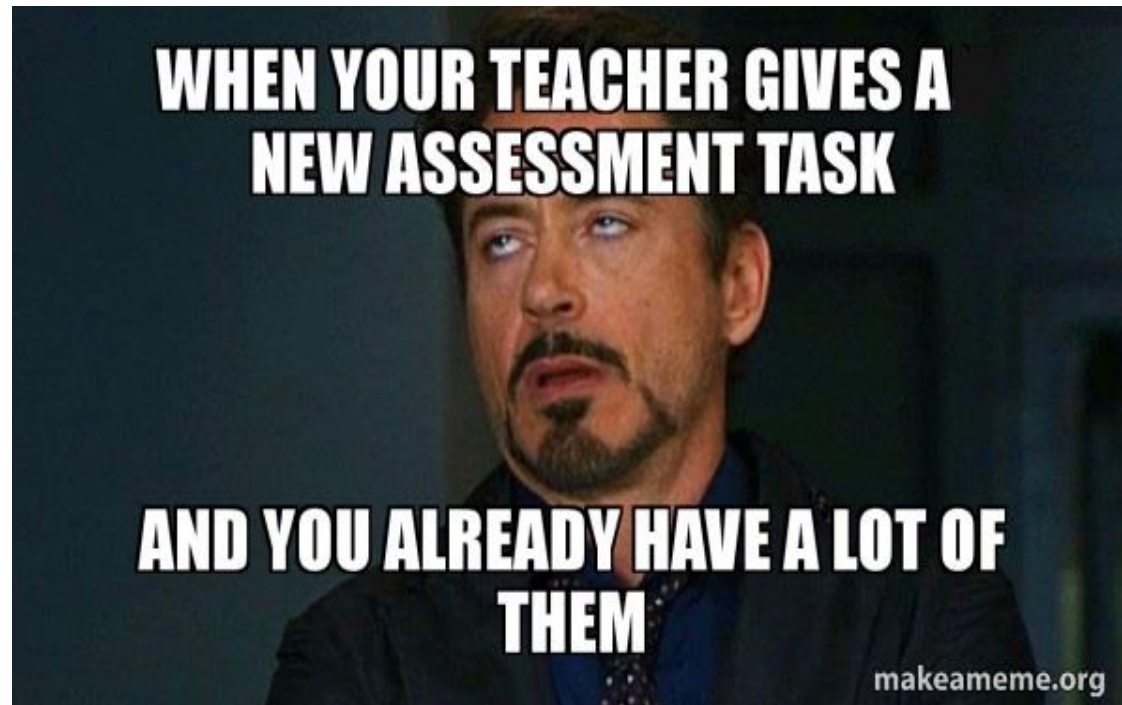
&

Cater for the realities of the AI era



# ChatGPT & Assessment reform

Time to tackle assessment overload





# Making space for ...

Process as much as product

Digital oral assessment (podcasts, vlogs)

New feedback possibilities



# Automated feedback potentials

Timely feedback at scale

Potential for uptake



Support for lower achieving students  
(cf. Tacoma, Drijvers & Jeuring, 2021)



# Automated feedback challenges

Critical evaluation of automated inputs

Over-reliance on bots

Acknowledging AI inputs





# My embryonic research

Interface between automated feedback practice & 'good' feedback principles

Case studies: education, medicine, science

(Internal funding application, in progress)





# Research niche

Automated feedback & AI insufficiently informed by educational research (Zawacki et al., 2019); and evidence on effective feedback (Cavalcanti et al., 2021).





# Cognitive & behavioral

How do students make sense of automated feedback inputs?

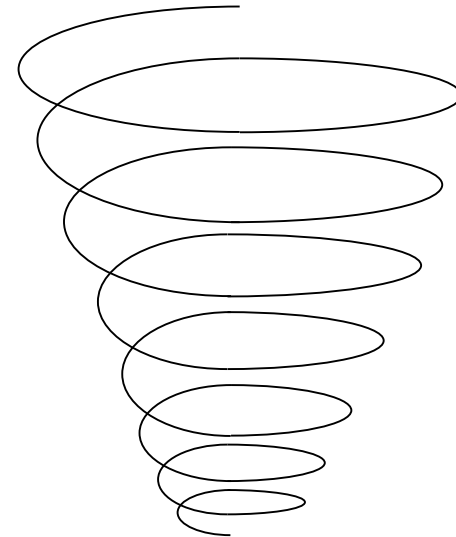
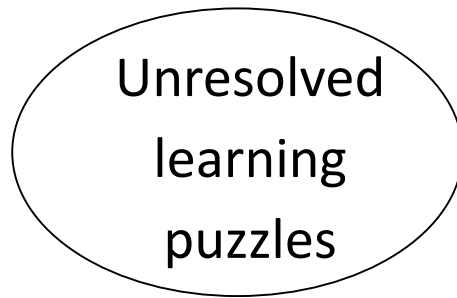
What do students do with automated feedback inputs?

**Uptake**



# Feedback loops & spirals

Closing feedback loops sometimes involves limited types of learning



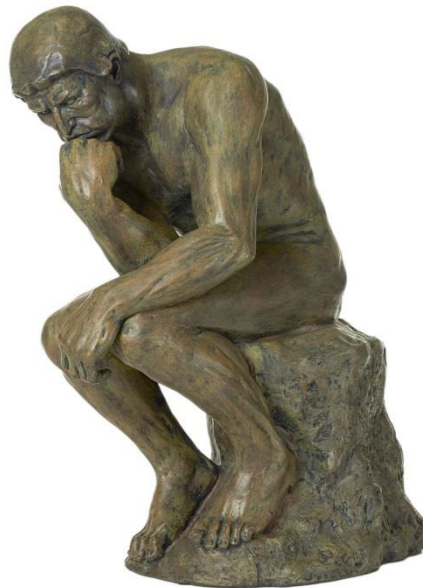
Feedback spirals

(Carless, 2019)



# Reflection

Reflection about feedback stimulates the development of student feedback literacy (Coppens et al., 2023)





# Reflective feedback literacy

Critical engagement with previous feedback practices, and making adjustments in the light of experience.

(Carless, 2023, in press)



# Insights from LA

Feedback literacy even more important  
when students using automated feedback  
(Shibani, Knight & Buckingham Shum, 2022)

Scaffolding

Critical engagement by design



# Affective response

Under what circumstances is automated feedback motivating?

What are the emotional responses to automated feedback?

(Cf. Lim et al., 2021)





# Automated feedback literacies

What are student & teacher feedback literacies for principled use of automated feedback?

FEEDBACK LITERACY





The University of Hong Kong

# Student automated feedback literacy

Critical engagement with AI inputs

Feedback for self-regulation



Reflective feedback literacy (cf. Carless, 2023)



# Teacher automated feedback literacy

Modelling & coaching effective use of AI

Motivating or incentivizing appropriate & ethical use of AI



# Concluding summary

Automated feedback  
+ pedagogic principles  
+ critical engagement  
+ reflective feedback literacy



## References

- Boud, D. & Molloy, E. (2013). Rethinking models of feedback for learning: The challenge of design. *Assessment & Evaluation in Higher Education*, 38(6), 698-712.
- Carless, D. (2023, in press). Teacher feedback literacy, feedback regimes and iterative change: Towards enhanced value in feedback processes. *Higher Education Research and Development*,
- Carless, D. (2019). Feedback loops and the longer-term: Towards feedback spirals. *Assessment and Evaluation in Higher Education*, 44(5), 705-714. <https://doi.org/10.1080/02602938.2018.1531108>
- Carless, D. and Boud, D. (2018). The development of student feedback literacy: Enabling uptake of feedback. *Assessment and Evaluation in Higher Education*, 43(8), 1315-1325. <https://doi.org/10.1080/02602938.2018.1463354>.
- Carless, D., & Winstone, N. (2023). Teacher feedback literacy and its interplay with student feedback literacy, *Teaching in Higher Education*. <https://doi.org/10.1080/13562517.2020.1782372>
- Cavalcanti, A. et al., (2021). Automated feedback in online learning environments: A systematic literature review. *Computers and Education: Artificial Intelligence*, 2. <https://www.sciencedirect.com/science/article/pii/S2666920X21000217>
- Coppens, K., van den Broeck, L., Winstone, N. & Langie, G. (2023). Capturing student feedback literacy using reflective logs, *European Journal of Engineering Education*, <https://www.tandfonline.com/doi/full/10.1080/03043797.2023.2185501>
- Deeva, G., D. Bogdanova, E. Serral, M. Snoeck, and J. De Weerd (2021). A Review of Automated Feedback Systems for Learners: Classification Framework, Challenges and Opportunities. *Computers & Education*, 162. [doi:10.1016/j.compedu.2020.104094](https://doi.org/10.1016/j.compedu.2020.104094)



# References (continued)

---

- Harland, T. & Wald, N. (2021) The assessment arms race and the evolution of a university's assessment practices, *Assessment & Evaluation in Higher Education*, 46:1, 105-117, DOI: [10.1080/02602938.2020.1745753](https://doi.org/10.1080/02602938.2020.1745753)
- Lim, L-A., et al. (2021) Students' perceptions of, and emotional responses to, personalised learning analytics-based feedback: an exploratory study of four courses, *Assessment & Evaluation in Higher Education*, 46:3, 339-359, DOI: [10.1080/02602938.2020.1782831](https://doi.org/10.1080/02602938.2020.1782831)
- Shibani, A., Knight, S. & Buckingham Shum, S. (2022) Questioning learning analytics? Cultivating critical engagement as student automated feedback literacy. LAK 22, 12<sup>th</sup> International Learning Analytics and Knowledge Conference, <https://dl.acm.org/doi/10.1145/3506860.3506912>
- Tacoma, S., Drijvers, P., & Jeuring, J. (2021). Combined inner and outer loop feedback in an intelligent tutoring system for statistics in higher education. *Journal of Computer Assisted Learning*, 37, 319-332.
- Winstone, N., & Carless, D. (2019). *Designing effective feedback processes in higher education: A learning-focused approach*. London: Routledge.
- Zawacki-Richter, O. et al. (2019). Systematic review of research on artificial intelligence applications in higher education – where are the educators? *International Journal of Educational Technology in Higher Education*, 16.  
<https://educationaltechnologyjournal.springeropen.com/articles/10.1186/s41239-019-0171-0>



**QUESTIONS**  
**&**  
**COMMENTS**



# Assessment for feedback

Designing assessment to promote iterative cycles of feedback (of different forms)



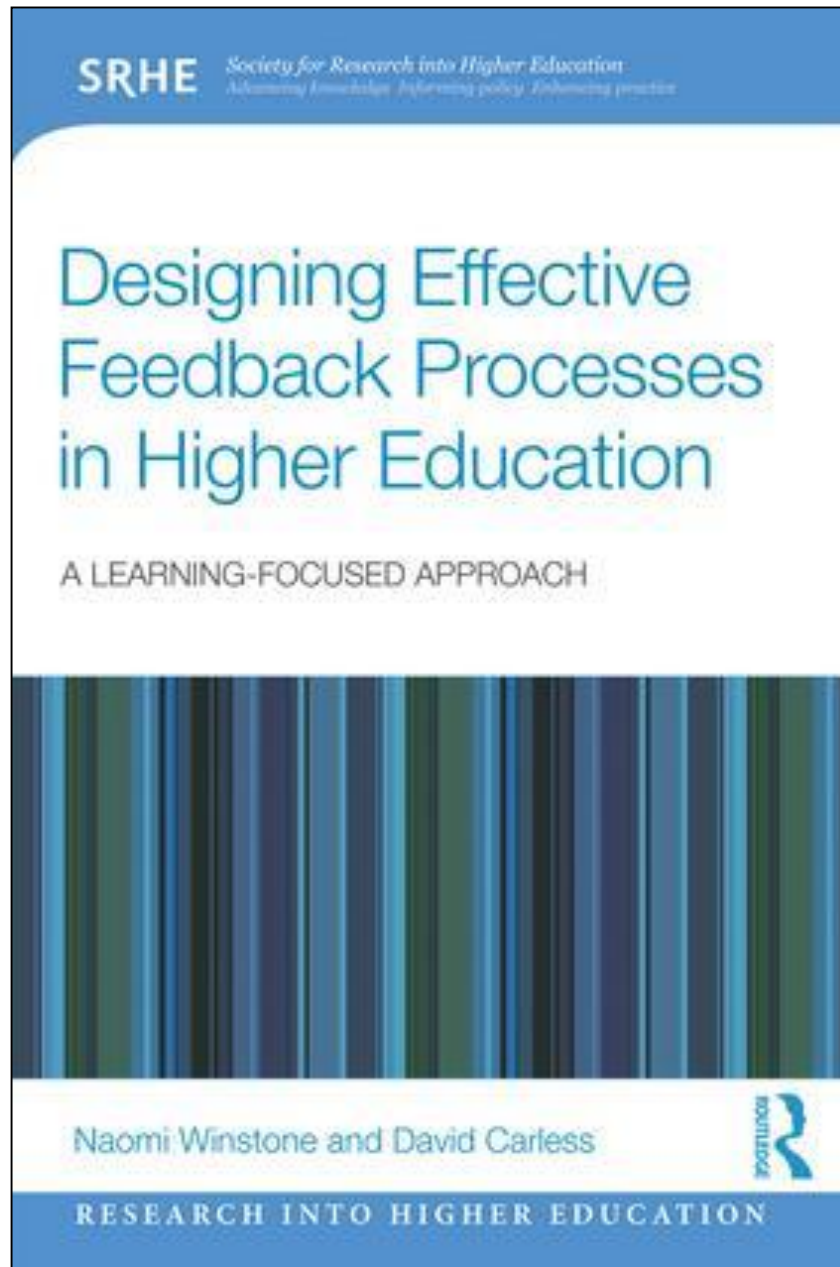
# Teacher feedback literacy

Expertise in designing feedback processes to enable student uptake of feedback of different forms

(Carless & Winstone, 2023)







SRHE *Society for Research into Higher Education*  
*Advancing knowledge. Informing policy. Enhancing practice.*

# Designing Effective Feedback Processes in Higher Education

A LEARNING-FOCUSED APPROACH

Naomi Winstone and David Carless



RESEARCH INTO HIGHER EDUCATION



The University of Hong Kong