

Fruits or Weeds?

Examining the affordances and
challenges of automated feedback tools

Danny Scholten

Mary-Jo Diepeveen

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Mary-Jo Diepeveen

PhD Candidate in AI for STEM
Education | Senior Content Developer
at Microsoft | AI & Data Science

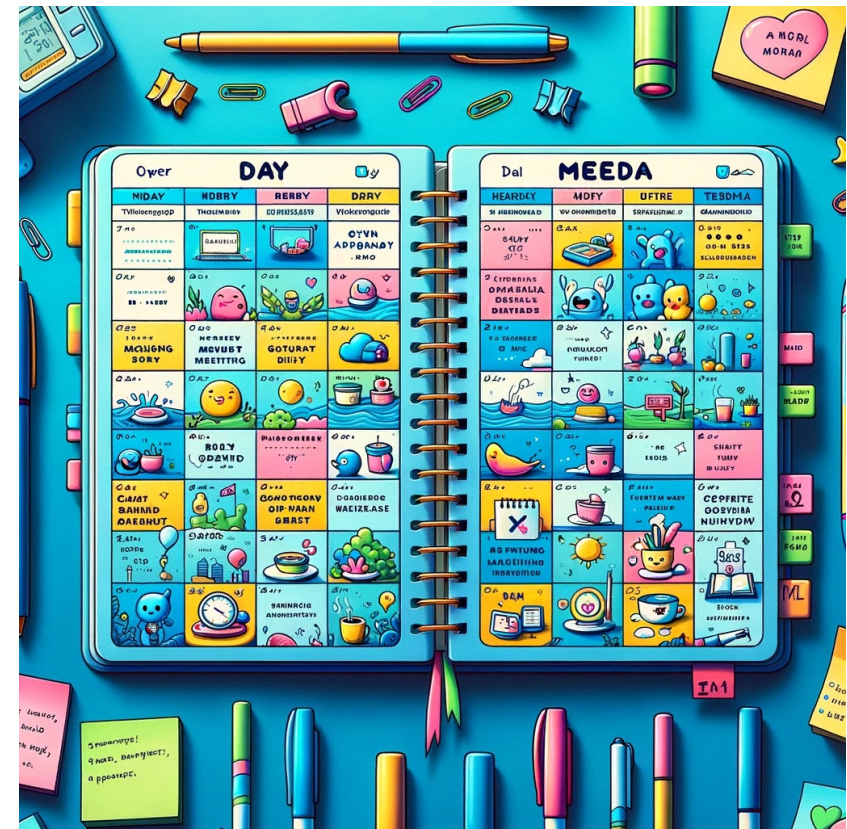


Danny Scholten

Assistant Professor Innovations in
Human Health & Life Sciences |
Educational Research Fellow VU

This workshop (75 min)

- What is feedback?
- AI-generated (automated) feedback
- VU FeedbackFruits tools for automated feedback
- Hands-on exercises
- Discussion: “To use or not to use automated feedback”?

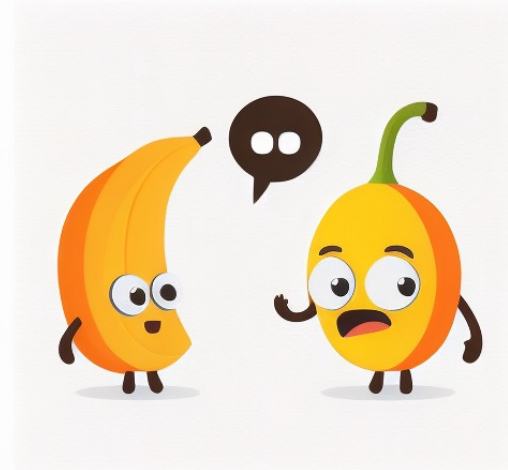


Feedback

- Feedback is reported as being the most powerful moderator to improve student achievement (Hattie, 1999).
- Feedback should not be exclusively in the hands of the teachers (Nicol & Macfarlane-Dick, 2006).
- Self- and peer-assessments may not be as accurate as teacher assessments but have a positive effect on a student's motivation to think and learn more (Black & Wiliam, 1998).

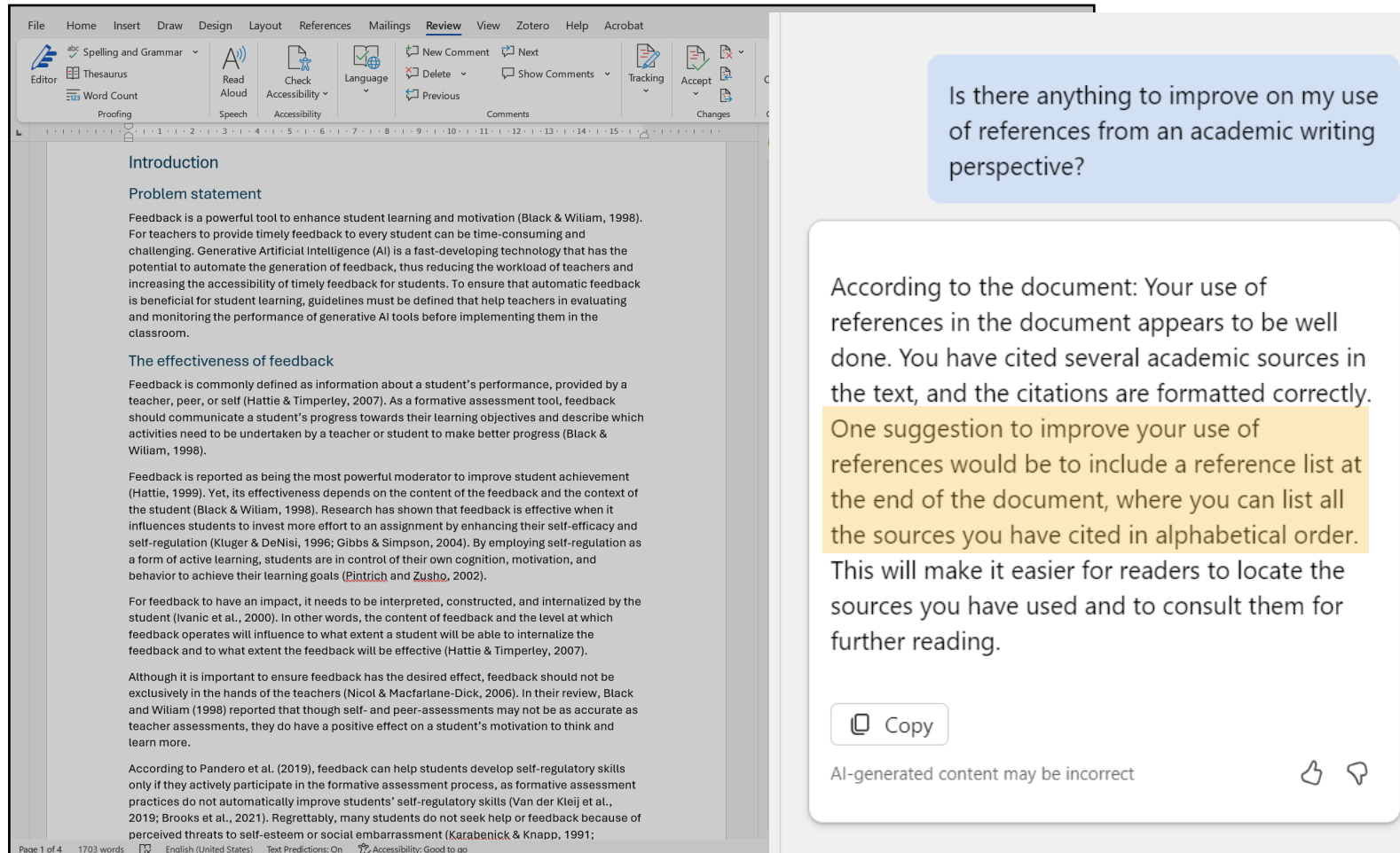


Short discussion



Do you integrate feedback in your courses? What challenges do you face?

How can AI generate feedback?



The image shows a Microsoft Word document with the following text:

Introduction

Problem statement

Feedback is a powerful tool to enhance student learning and motivation (Black & Wiliam, 1998). For teachers to provide timely feedback to every student can be time-consuming and challenging. Generative Artificial Intelligence (AI) is a fast-developing technology that has the potential to automate the generation of feedback, thus reducing the workload of teachers and increasing the accessibility of timely feedback for students. To ensure that automatic feedback is beneficial for student learning, guidelines must be defined that help teachers in evaluating and monitoring the performance of generative AI tools before implementing them in the classroom.

The effectiveness of feedback

Feedback is commonly defined as information about a student's performance, provided by a teacher, peer, or self (Hattie & Timperley, 2007). As a formative assessment tool, feedback should communicate a student's progress towards their learning objectives and describe which activities need to be undertaken by a teacher or student to make better progress (Black & Wiliam, 1998).

Feedback is reported as being the most powerful moderator to improve student achievement (Hattie, 1999). Yet, its effectiveness depends on the content of the feedback and the context of the student (Black & Wiliam, 1998). Research has shown that feedback is effective when it influences students to invest more effort to an assignment by enhancing their self-efficacy and self-regulation (Kluger & DeNisi, 1996; Gibbs & Simpson, 2004). By employing self-regulation as a form of active learning, students are in control of their own cognition, motivation, and behavior to achieve their learning goals (Pintrich and Zusho, 2002).

For feedback to have an impact, it needs to be interpreted, constructed, and internalized by the student (Ivanic et al., 2000). In other words, the content of feedback and the level at which feedback operates will influence to what extent a student will be able to internalize the feedback and to what extent the feedback will be effective (Hattie & Timperley, 2007).

Although it is important to ensure feedback has the desired effect, feedback should not be exclusively in the hands of the teachers (Nicol & Macfarlane-Dick, 2006). In their review, Black and Wiliam (1998) reported that though self- and peer-assessments may not be as accurate as teacher assessments, they do have a positive effect on a student's motivation to think and learn more.

According to Pandero et al. (2019), feedback can help students develop self-regulatory skills only if they actively participate in the formative assessment process, as formative assessment practices do not automatically improve students' self-regulatory skills (Van der Kleij et al., 2019; Brooks et al., 2021). Regrettably, many students do not seek help or feedback because of perceived threats to self-esteem or social embarrassment (Karabenick & Knapp, 1991);

Page 1 of 4 1703 words English (United States) Text Predictions: On Accessibility: Good to go

AI-generated feedback box:

Is there anything to improve on my use of references from an academic writing perspective?

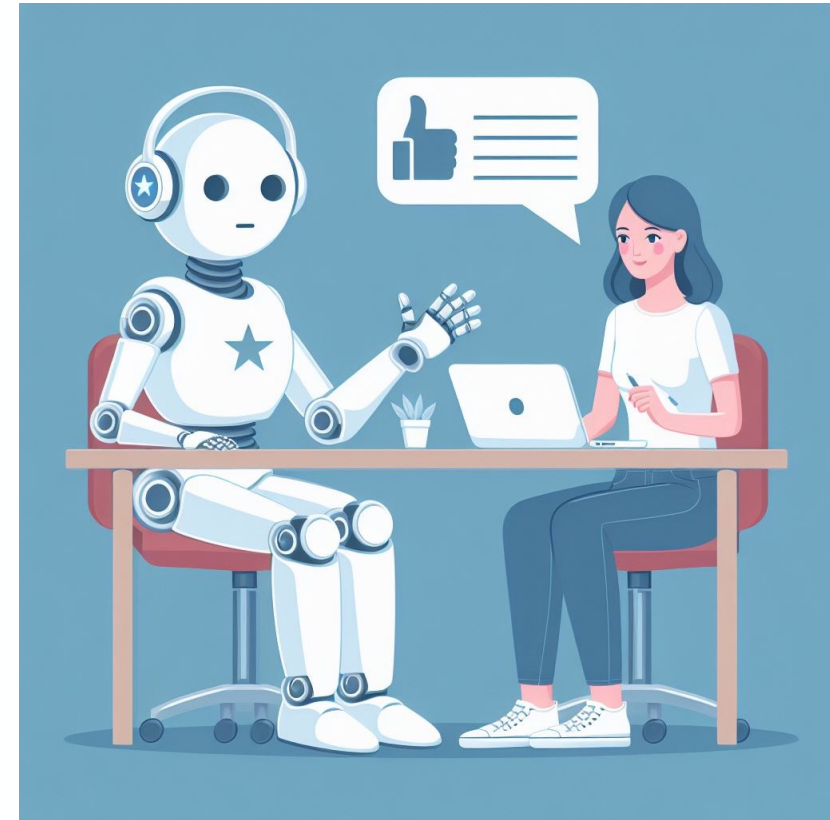
According to the document: Your use of references in the document appears to be well done. You have cited several academic sources in the text, and the citations are formatted correctly. One suggestion to improve your use of references would be to include a reference list at the end of the document, where you can list all the sources you have cited in alphabetical order. This will make it easier for readers to locate the sources you have used and to consult them for further reading.

Copy

AI-generated content may be incorrect

Use generative AI to automate feedback

- AI tools elevate the accessibility of personalized teaching assistance while freeing up human staff to handle higher-level pedagogical concerns (Liu et al., 2024).
- AI tools have the potential to enhance the efficiency of students' workflows and facilitate more effective learning (Tsai et al., 2023).



“AI tools can completely replace the need for teacher feedback”

Feedback tools – ‘unlimited’ possibilities

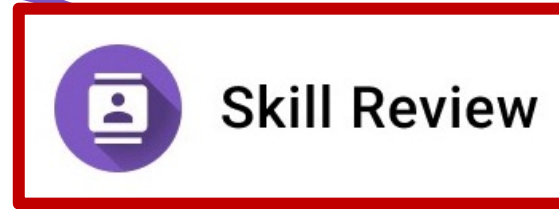
Peer feedback & assessment tools



AFC

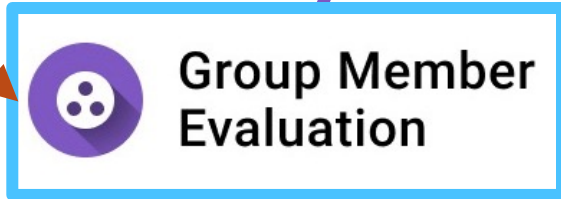


Peer Review



Skill Review

Teacher feedback & assessment tools



Group Member Evaluation

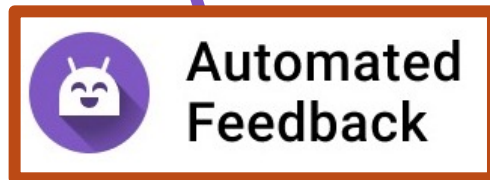


FeedbackFruits

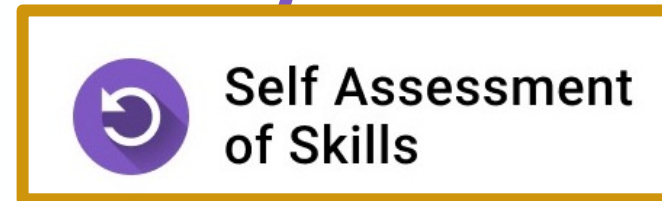


Assignment Review

AI feedback tools

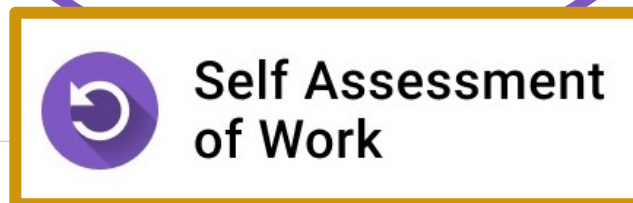


Automated Feedback



Self Assessment of Skills

Self assessment tools



Self Assessment of Work

1 – Automated Feedback Coach 2.0 (beta)



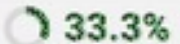
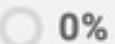








- Provides automated feedback on feedback of peer review tools (English & Dutch)
- Based on generative AI: GPT (via Azure OpenAI platform)
- Privacy: within scope of VU-FbF data processing agreement
- Prompt is proprietary, but focuses on:
 - Feedback tone
 - Addressing the assignment criteria
 - Encouragement and compliments
 - Do not respond to random text
 - Offer areas for improvement





FINISH LATER



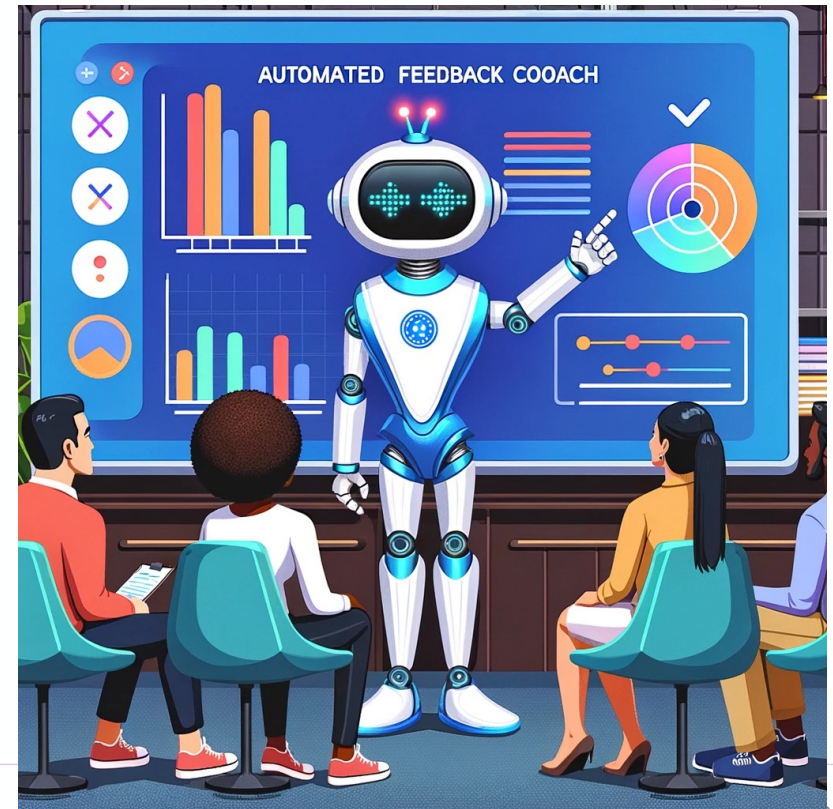
Criteria	 <p>Review recipient Robert Cloud</p>	 <p>Review recipient Kristen Swon</p>
	<p>Review progress  33.3%</p>	<p>Review progress  0%</p>
Group work contribution		
Collaboration	<p>Novice (<... 7 points) Compete... 8 points Proficient... 9 points Expert (>... 10 points</p>  <div data-bbox="861 802 1498 973"> <p>Requirements for Novice (<70%) (7 points) Struggles to work collaboratively with colleague... Read more...</p> </div> <p> WRITE FEEDBACK</p>	<p>Novice (<... 7 points) Compete... 8 points Proficient... 9 points</p>  <p> WRITE FEEDBACK</p>
Provide constructive feedback	<p>Novice (<... 7 points) Compete... 8 points Proficient... 9 points Expert (>... 10 points</p>  <p> WRITE FEEDBACK</p>	<p>Novice (<... 7 points) Compete... 8 points Proficient... 9 points</p>  <p> WRITE FEEDBACK</p>



2 – Automated Feedback Tool

- Provides automated writing feedback using criteria set by teacher (Dutch & English)
 - Formatting & Structure
 - Style & Clarity
 - Grammar & Mechanics
 - Consistency

- Based on AI
- Available as standalone or as part of assignment review or peer review workflow





Because arts education aims to guide students to develop their personal self-images and selfconcepts, theatre and dance are excellent forms of expression from which students can construct their own cultural and self-identity by reflecting on life experiences, emotions and social interactions.

In consequence, teachers and educators must evolve from their conventional role towards becoming a 'learning companion' who provides the tools and encourages students to construct the meaning of their learning by themselves (Gullat, 2008). Nonetheless, there must be a shift also between the school itself and the cultural institutions who support participative arts education. The exposure of students to cultural institutions not only enhances their cultural capital and competences but also can evolve them into "cultural consumers" who are motivated towards continuing acquiring cultural capital (Kisida, 2015), which is the principal goal of MaasTD. Establishing a strong structural relationship between the schools and MaasTD, could lead to a long-lasting bond between students and the cultural institution that goes further than the mandatory course CKV. Thus, in this relationship, all stakeholders (schools, institution and students) must be involved and their opinions and needs must be taken into account inflexible decision-making processes. Every school and group of students needs a tailored art program that suits them since schools differ depending on their students, district and funding. On the contrary, planning uniform education programs will lead to inefficient and unsatisfying experiences, which must be avoided (Gullat, 2008). Consequently, every relationship must be managed and understood as a unique bond, where fostering dialogue and active involvement is key. Particular ideas and individual demands must be met with an effective partnership to achieve a common goal (Dreeszen, Aprill & Deasy, 1999). Without this intentional and meaningful collaboration bond, the roles of the institution and the school would just be 'cultural supplier' and 'cultural consumer' of a 'cultural good'. However, with a foundational stronger relationship, the respect, sense of belonging and long-term commitment for the practice and the institution would be strengthened from the roots.

ARTS EDUCATION RELATIONSHIPS 4

3. Methods

Aiming to respond to the research question (how to create a long-lasting structural relationship between MaasTD and the schools?), a qualitative approach is proposed. Following the Guide to Arts and Education Collaboration by Dreeszen, Aprill & Deasy, (1999) will allow more directed navigation and will help to define more accurately some crucial concepts and sub-questions. Hence, three sub-questions must be contemplated: what do students need to be motivated? How can schools be more involved with the institution? And what can MaasTD offer and receive? Two stakeholders, school and institution, must acknowledge their goals, needs and limitations, to achieve the common objective: obtain the

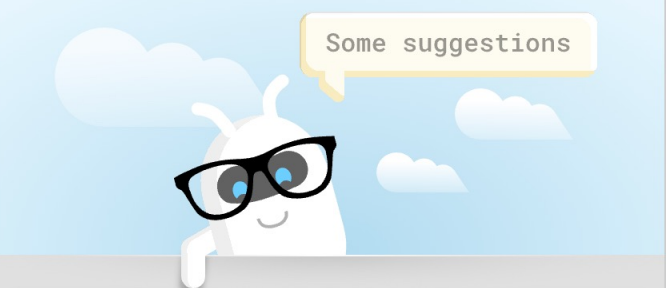


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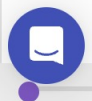
← Comments

Criterion
Active voice



Active voice · Suggestion
Sentence uses passive voice
 @page 1
 It seems you are using passive voice here, which is discouraged. We suggest you rephrase this sentence to avoid using passive voice.
[More info on this criterion](#)
 MARK AS INCORRECT
 Was this useful? ☆☆☆☆☆

Active voice · Suggestion
Sentence uses passive voice
 @page 1
 It seems you are using passive voice here, which is discouraged. We suggest you rephrase this sentence to



What is good feedback?



Now it's your turn!



2 exercises to experience:

- Automated Feedback Coach on Feedback
- Automated Feedback on Writing



Follow these instructions:

<https://tinyurl.com/VU-edtech-2024>



Reflect on the feedback as a 'student':

What do you and don't you like about the feedback (tools)?



Discussion

- Would you as a teacher integrate such a tool in your course?
 - Automated Feedback Coach on peer feedback
 - Automated Feedback on Academic Writing Tool



Discussion

- What do students need to use such an automated feedback tool effectively for learning?
 - Tsai et al. (2023) recommendations:
 - To develop critical thinking skills.
 - Have a foundational understanding of the development of these tools.
 - Take responsibility for the results generated using AI in their projects.



Wrapping up

- AFC is not available yet
- For more information & help
 - <https://help.feedbackfruits.com/en/>
 - onderwijswerkplaats@vu.nl
- Want to contact us?
 - danny.scholten@vu.nl or m.diepeveen@vu.nl



References

- Black, P., & Wiliam, D. (1998). Assessment and classroom learning. *Assessment in Education: principles, policy & practice*, 5(1), 7-74.
- Hattie, J. (1999). Influences on student learning. Inaugural lecture given on August, 2(1999), 21.
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- Nicol, D. J., & Macfarlane-Dick, D. (2006). Formative assessment and self-regulated learning: A model and seven principles of good feedback practice. *Studies in Higher Education*, 31(2), 199–218.
<https://doi.org/10.1080/03075070600572090>
- Tsai, M.-L., Ong, C. W., & Chen, C.-L. (2023). Exploring the use of large language models (LLMs) in chemical engineering education: Building core course problem models with Chat-GPT. *Education for Chemical Engineers*, 44, 71–95. <https://doi.org/10.1016/j.ece.2023.05.001>