

Turning active learning into Active Feedback: An inner feedback perspective

David Nicol, Research Professor
Adam Smith Business School

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When we think about “Feedback”

Comments” “Information” “Corrections”

“It’s on the assessment”

“Delivered by tutors, or peers”

“Received by the student”

“Comes after submission of assessment task”

“Students will use the feedback”

“Feedback will feedforward to next assignment”

“Students will remember the feedback”

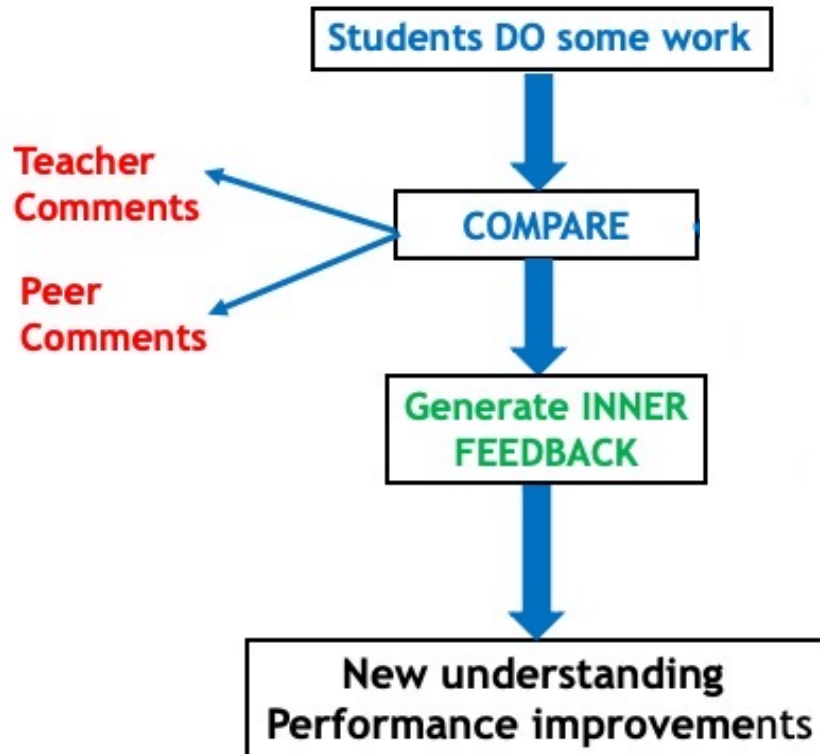
“Students will link feedback to previous feedback”

Definition of Inner Feedback

Inner feedback is the new knowledge that students generate when they **compare** their **current knowledge** against some **reference information** guided by their goals [Nicol, 2021]

Feedback as a comparative process

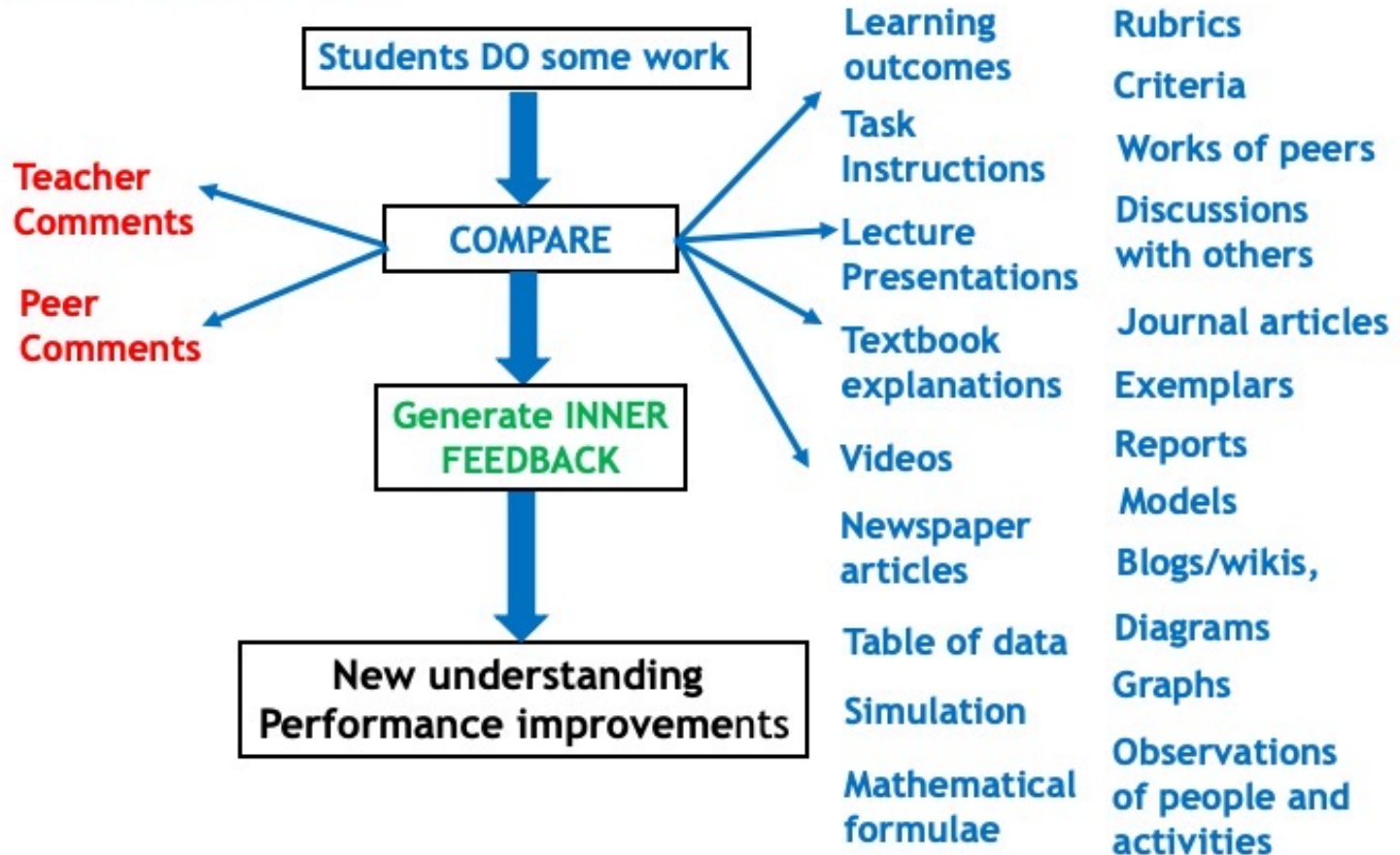
[planned comparisons]



Feedback as a comparative process

[planned comparisons]

[natural comparisons]



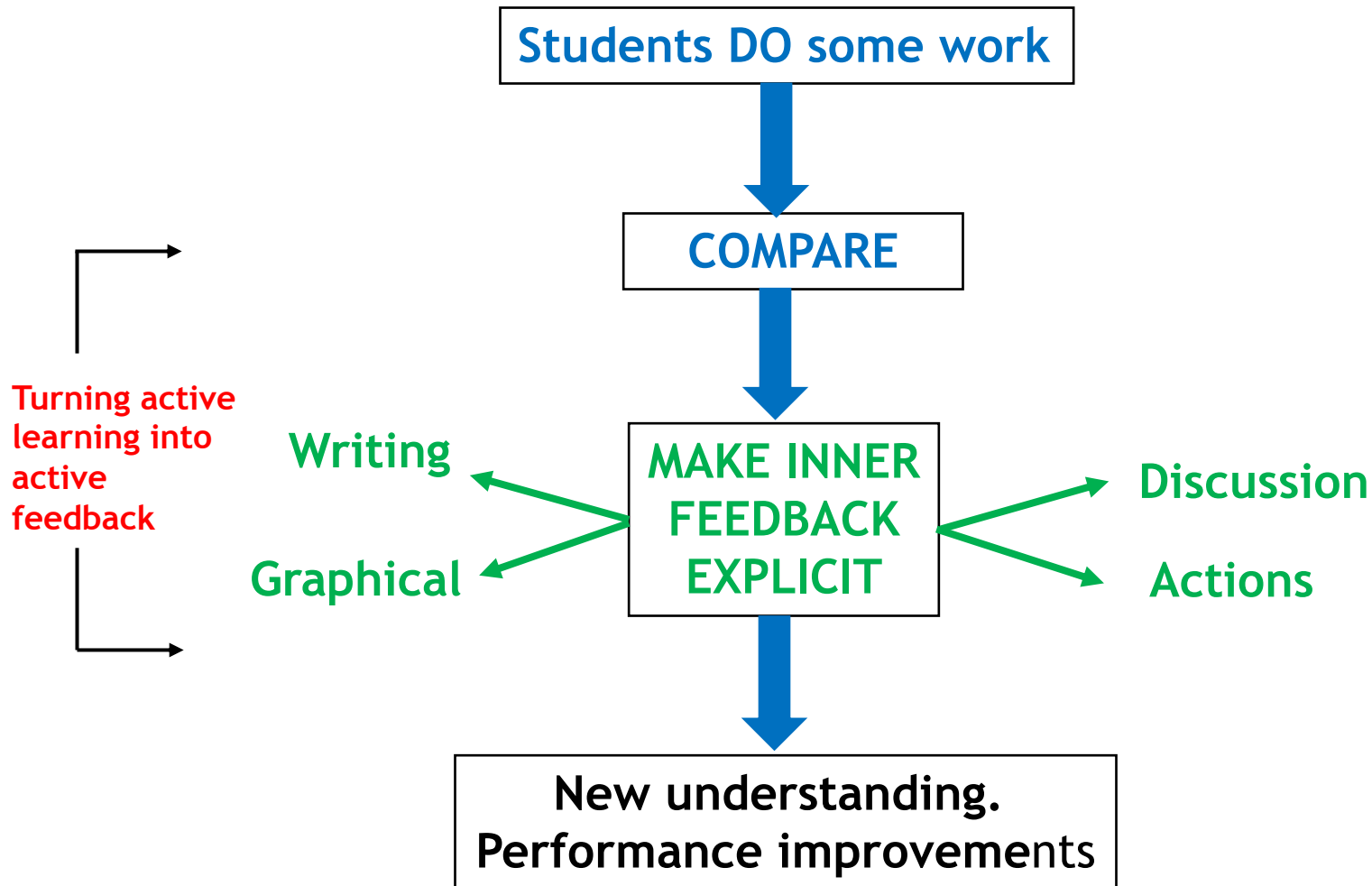
Programme of Research

- ❑ I and colleagues have been researching what happens if **students deliberately compare their developing work against information from sources other than comments (online or offline)**.

Findings

- ❑ Feedback that students generate from other information sources is more **varied** than, **complements** and under the right circumstances can **surpass** the feedback that students generate from comments.
- ❑ Expand the purposes of feedback to help students develop their critical and creative thinking, team working and graduate attributes

Unlocking the Power of Inner feedback

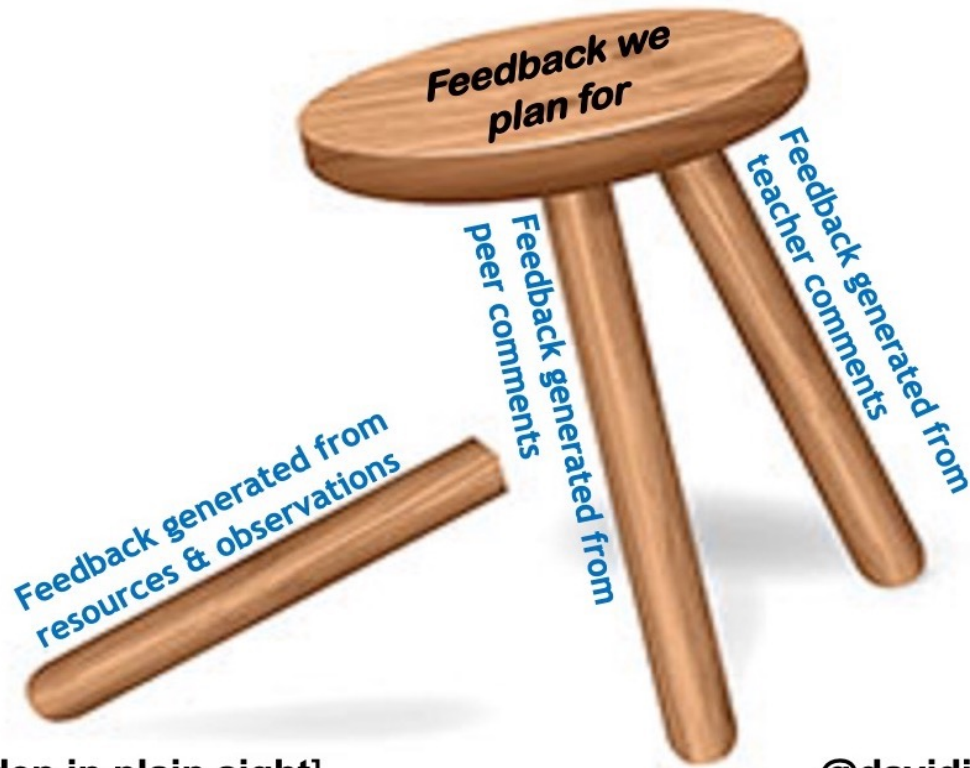


Why is **EXPLICITNESS** important?

- ❑ Increases the power of inner feedback
- ❑ **Self-regulation** – students see own feedback capability – makes own agency visible - raises metacognitive awareness — promotes transfer of learning to new contexts
- ❑ **Teacher workload management** – teachers have better diagnostic information about students' learning, about what comments they need or what comparisons to stage next.

Turning active learning into active feedback

What would it take to significantly improve learner agency in feedback without increasing teaching workload?



[hidden in plain sight]

@davidjnicol

Merits and issues associated with different types of feedback comparisons

Resource-based feedback

Dialogic-feedback

Resource-feedback

Peer feedback

Teacher feedback

Merits

Puts feedback agency squarely in students' hands.

Students make feedback judgements rather than receive judgements of others

Different comparators result in different kinds of feedback

No limit to feedback students can generate on own

Builds students' feedback agency

Students make judgements and receive judgements

More feedback than teacher alone can provide.

Develops collaborative skills and learning communities

Teacher is subject expert

Uses feedback to scaffold and support student learning

Anchors feedback provision in standards.

Uses feedback to motivate and reassure students

Teacher-student relationship critical to learning

Issues

Resources don't respond to student productions [no reader response]

Students might not generate all the feedback they need due to blind spots in thinking

Students need induction into this view of feedback

No framework for teachers wishing to implement this type of feedback

Some students consider peer comments untrustworthy.

No benchmark for standards

Blind leading the blind or 'group think'

Students need training in making judgements & commenting

Teacher feedback seen as a judgement by students

Emotional backwash

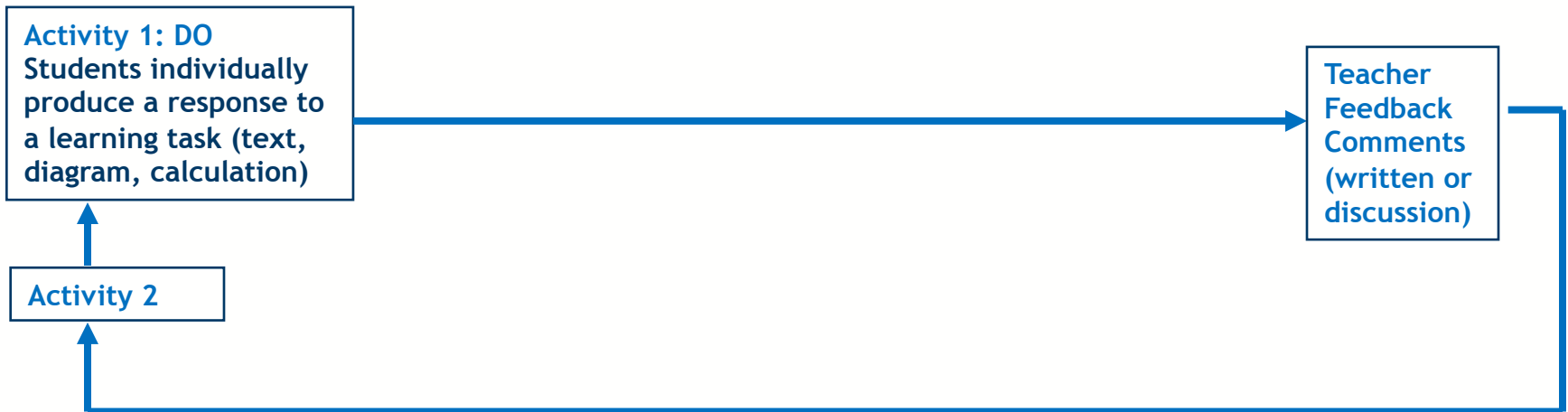
Tension between feedback as telling and student self-regulation development

Workload issues

Students don't understand comments & received too late to use

Traditional feedback method

Dialogical Feedback



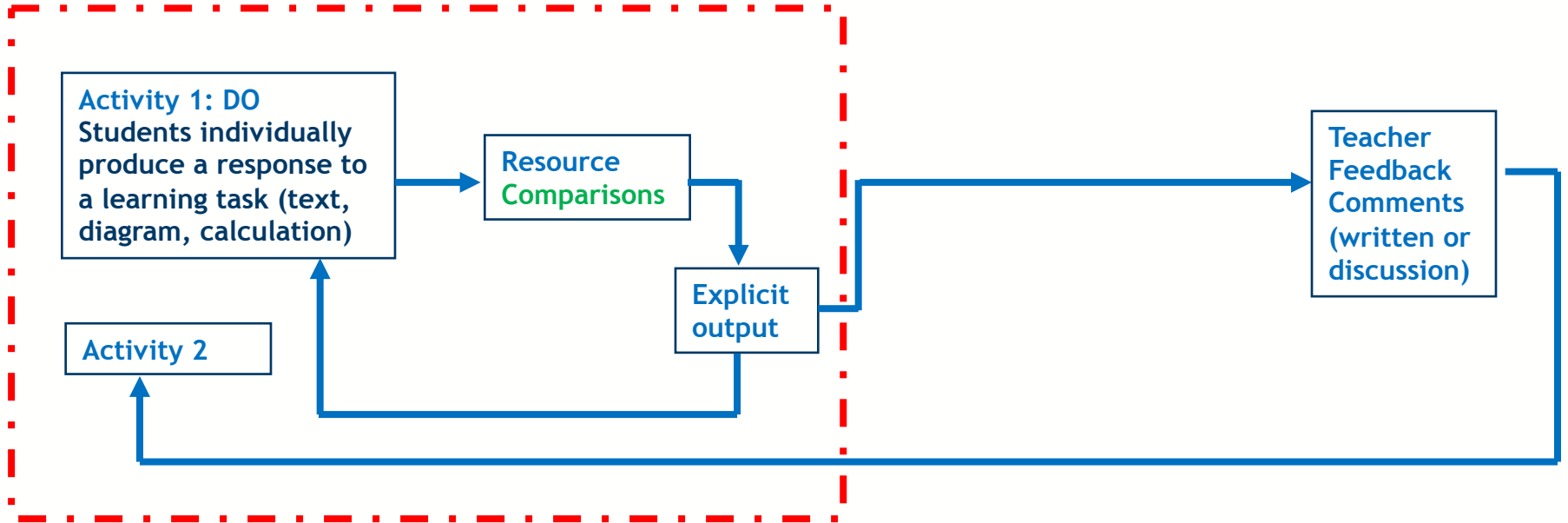
LOW student feedback agency

HIGH teacher workload

Cycles of resource-based feedback

Resource-based feedback

Dialogical Feedback



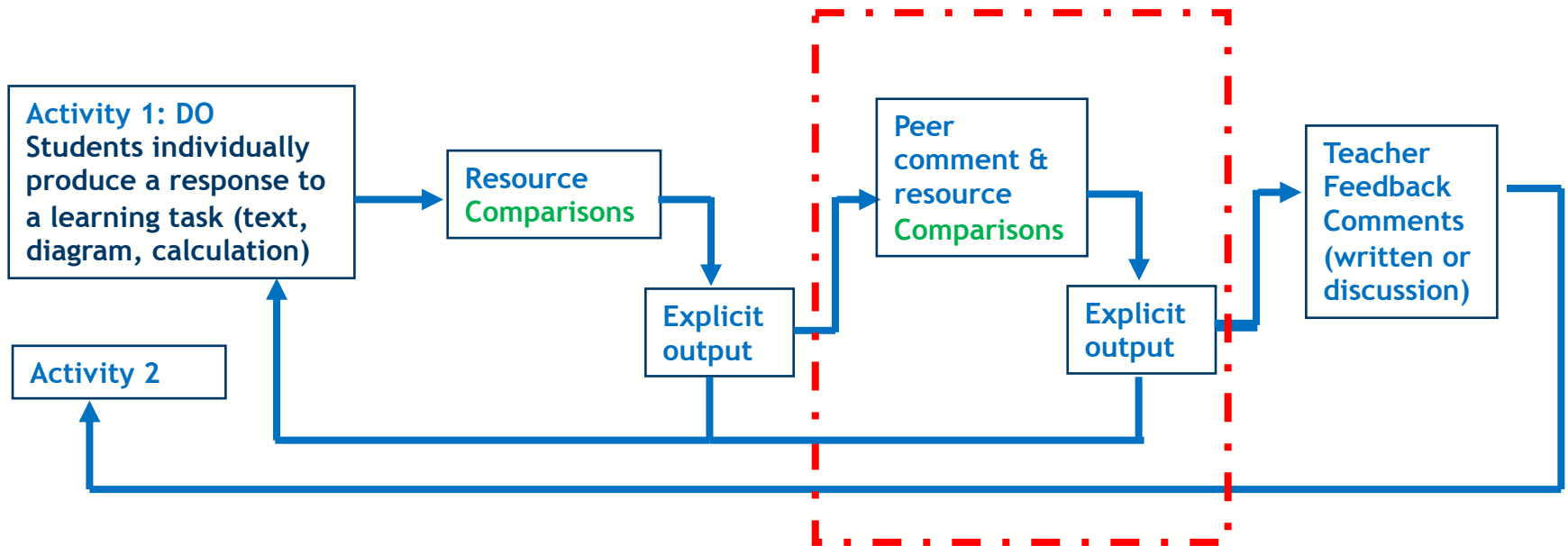
HIGH student feedback agency ←————→ LOW student feedback agency

Low teacher workload ←————→ High teacher workload

Integrating/amplifying resource-based feedback

Resource-based feedback

Dialogical Feedback



HIGH student feedback agency



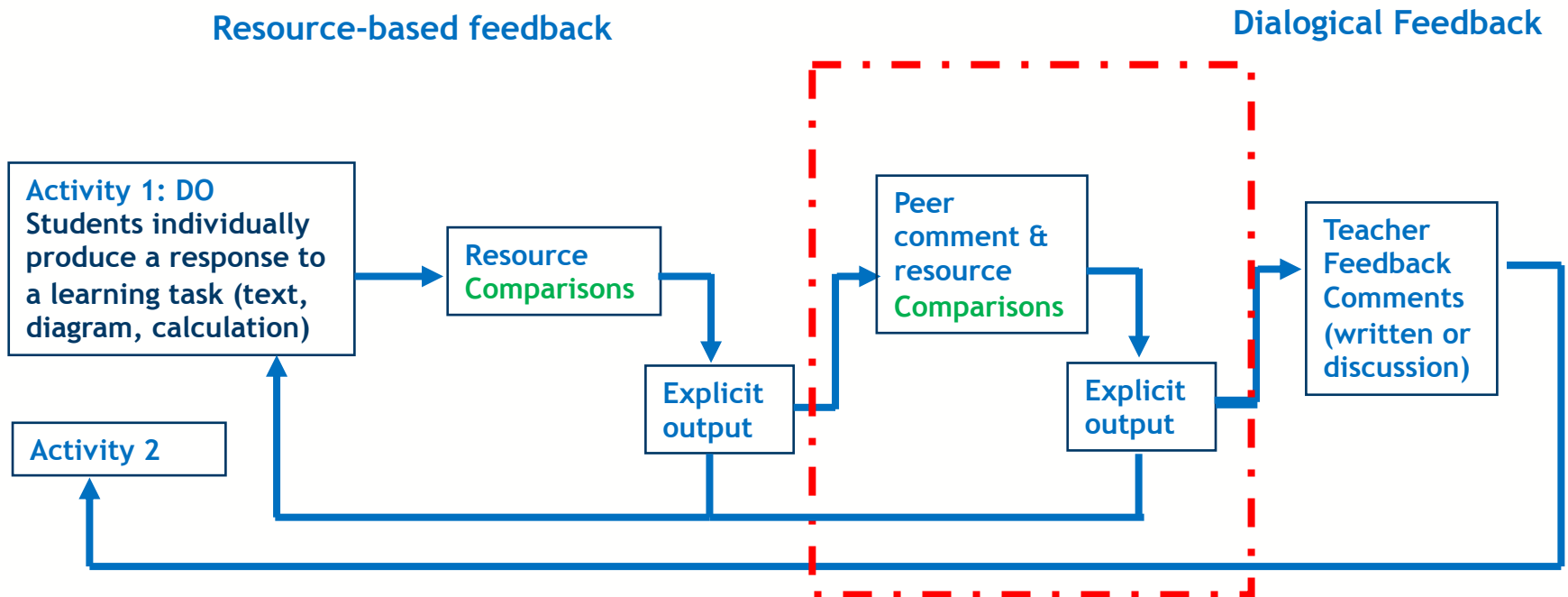
LOW student feedback agency

Low teacher workload



High teacher workload

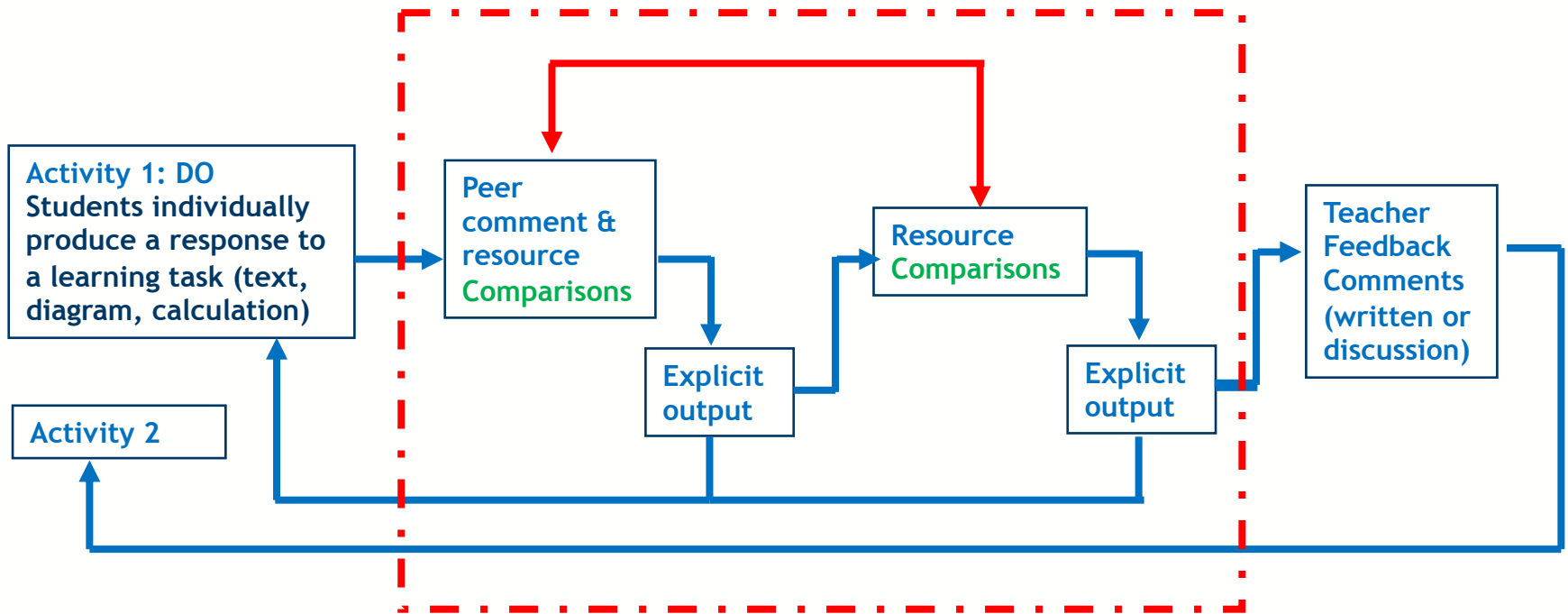
Cycles of peer comparisons



HIGH student feedback agency ←————→ LOW student feedback agency

Low teacher workload ←————→ High teacher workload

Not a fixed sequence: main point is to end-load teacher comments



HIGH student feedback agency



LOW student feedback agency

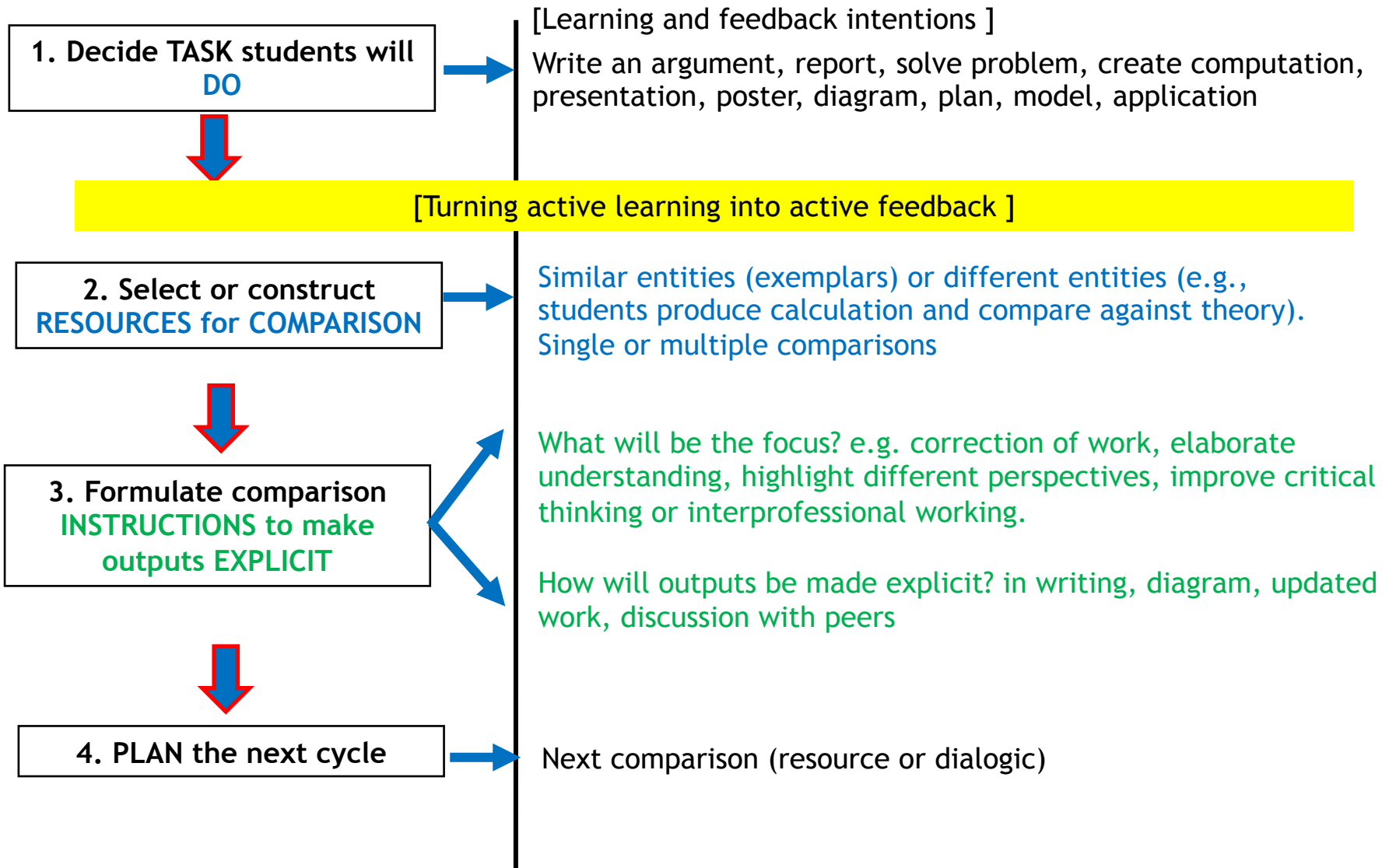
Low teacher workload



High teacher workload

Lecturer decisions

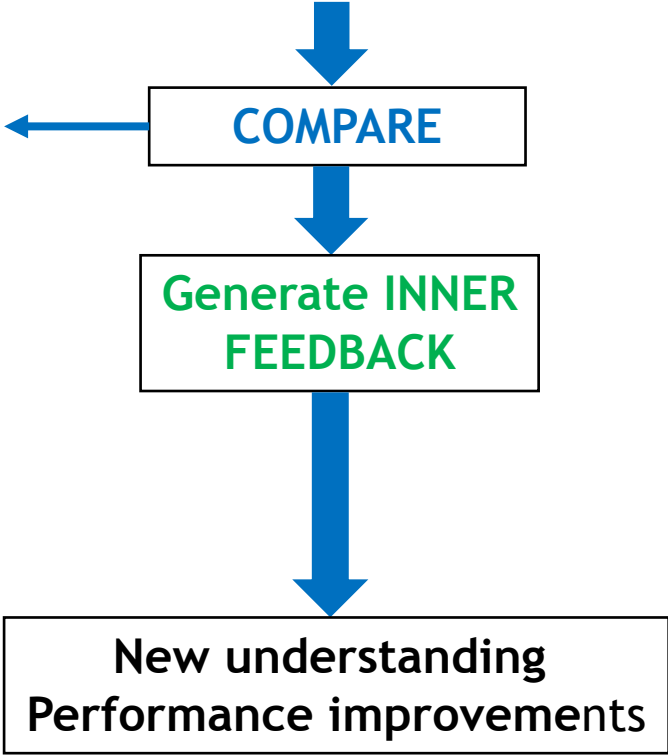
Choices



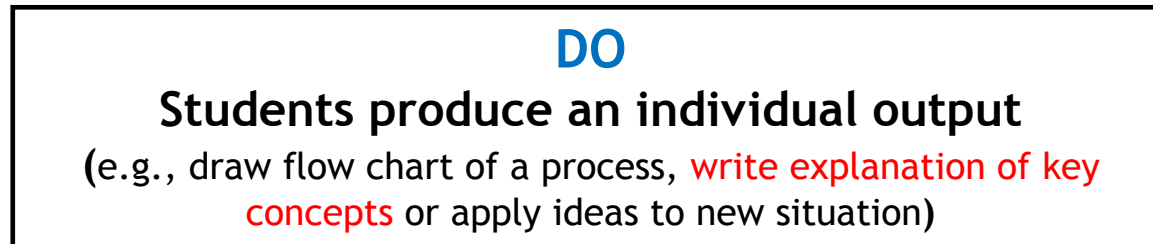
Lecture Comparison [Natural]

DO
Students produce an individual output
(e.g., draw flow chart of a process, **write explanation of key concepts** or apply ideas to new situation)

Lecture input given after activity
When students listen to lecture input, they will naturally compare it to what they produced beforehand.



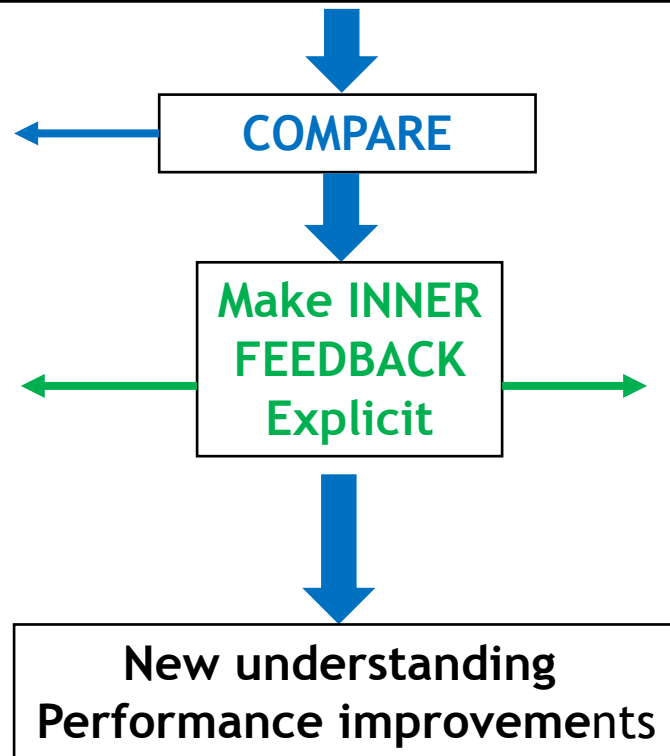
Lecture Comparison [Explicit]



Students told to listen to lecture input and to explicitly compare it [consider it] in relation to what they produced and to create an output

Resource comparison

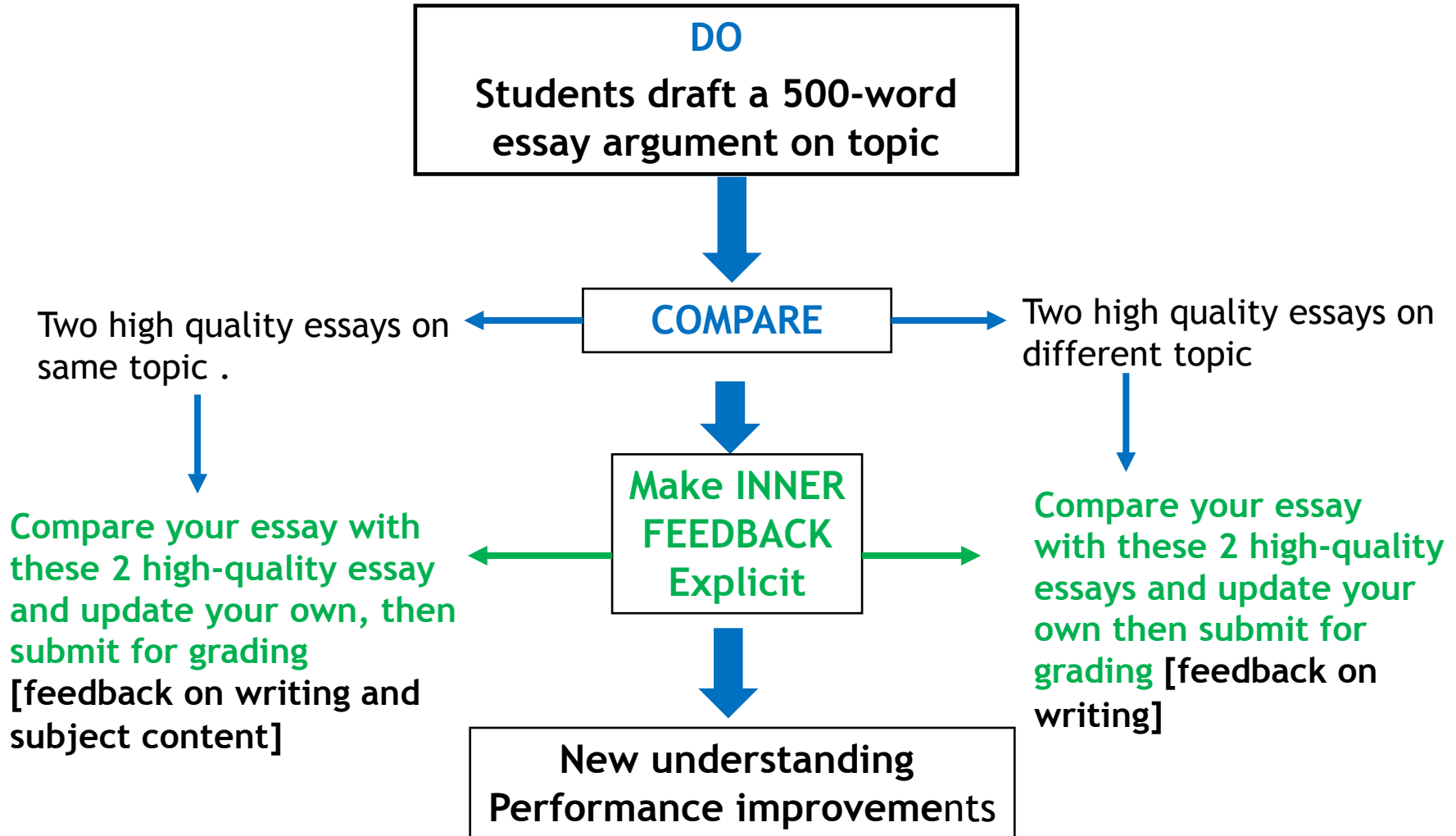
1. Write an account of what you learned about your own output from listening to this lecture segment.
2. Update what you produced during activity
3. Formulate a 'question worth asking' for discussion with peers



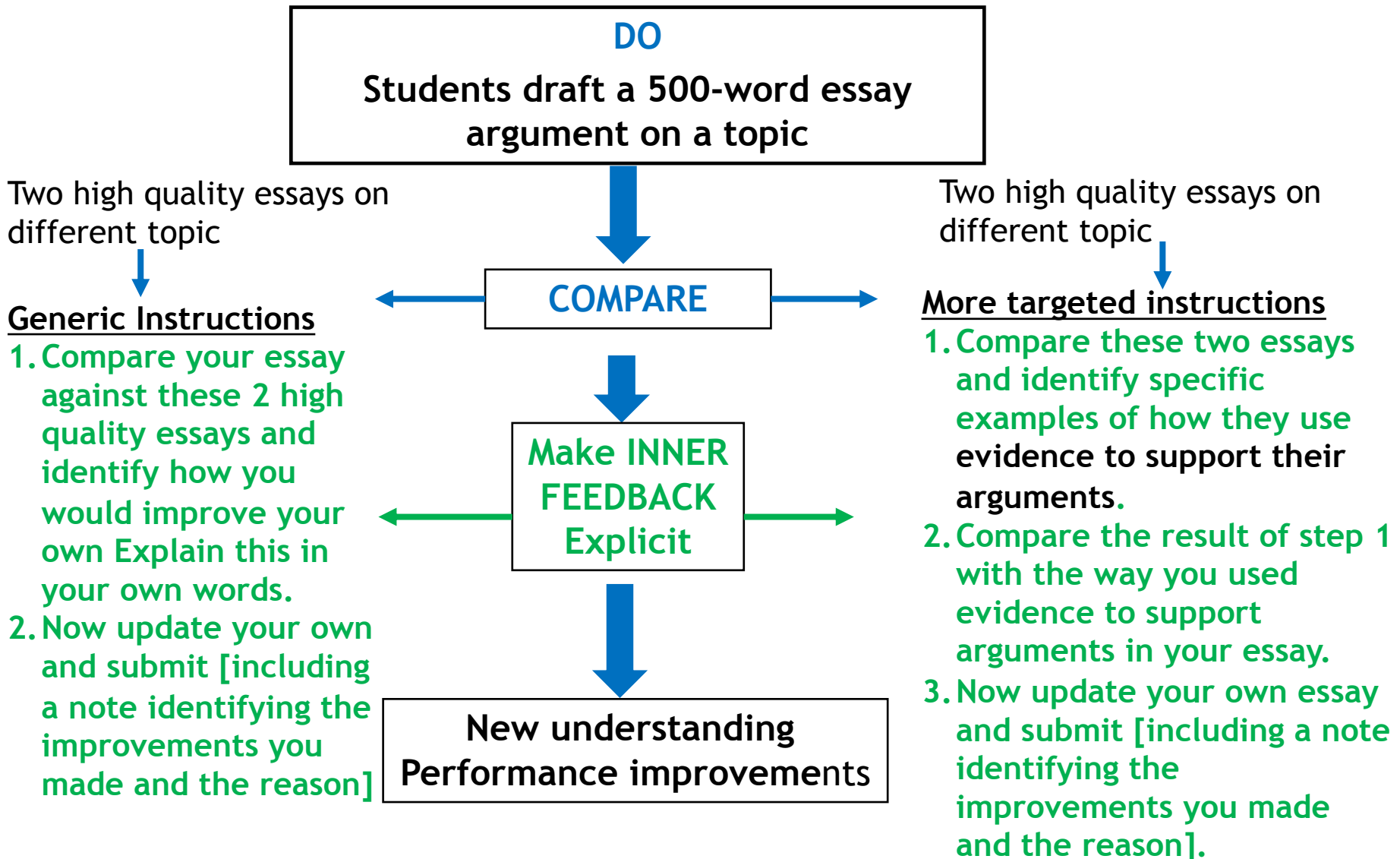
AMPLIFY comparison

4. Discuss your work and comparison outputs with peers and create an agreed output.
5. Identify and formulate any unanswered questions for teacher.

Essay argument comparisons



Essay argument comparison



Mathematics

Students solve set of mathematics problems

COMPARE

Make INNER
FEEDBACK
EXPLICIT

New understanding
Performance
improvements

1. Similar entities
Compare against
correct solutions to
the problems

Feedback on
whether
students got
the right
answer

2. Different entity
Against the
conceptual model
that sits behind the
solution strategies

Feedback on deep
structure of
solution, the
concepts-practice
relationship

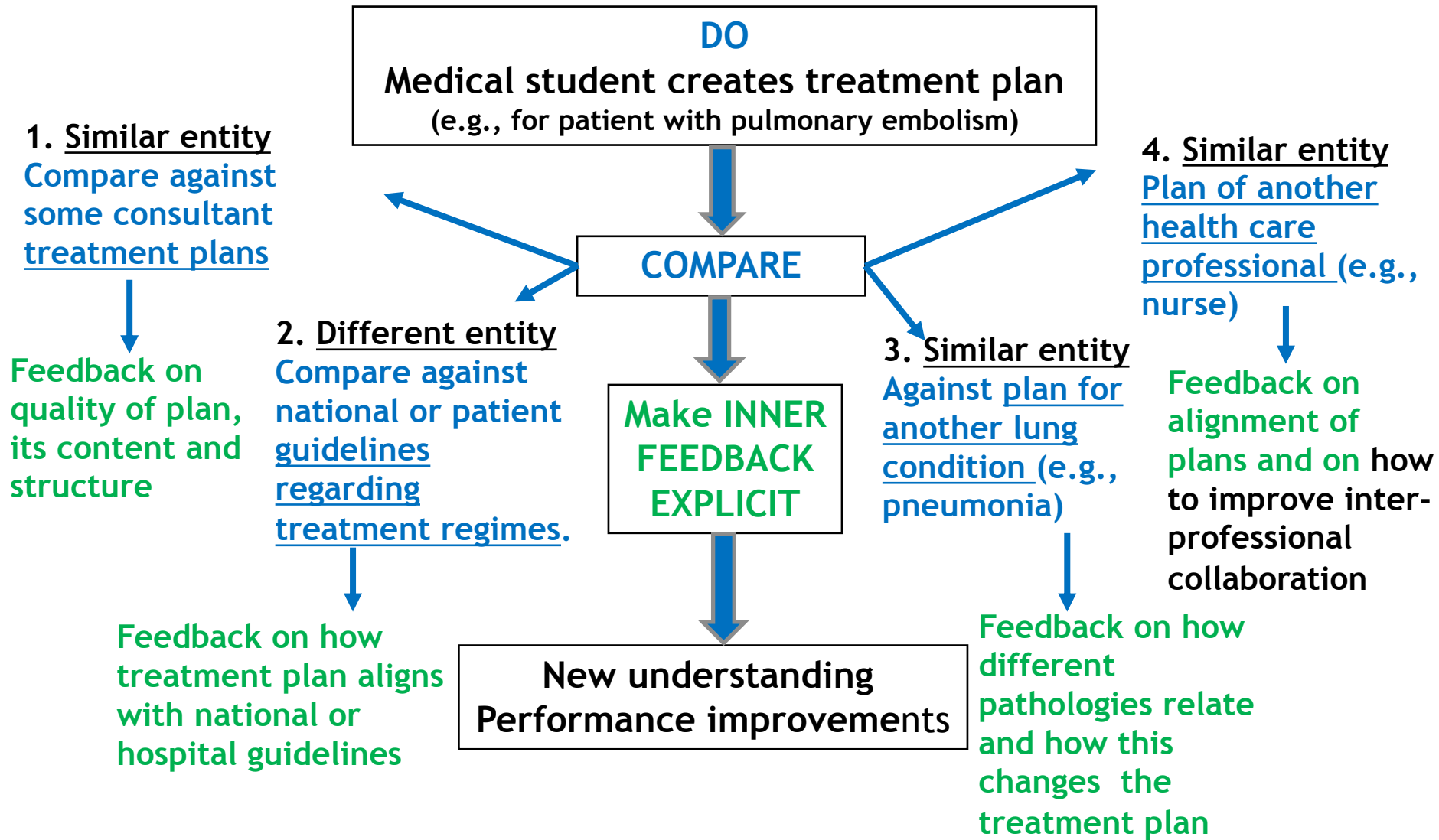
3. Different entity
a video of expert
talking through
some problem
solutions

Feedback on
their thinking
versus expert
thinking when
solving
problems

4. Similar entity
Different
solution method
to some of these
problems

Feedback on
when one
solution
method might
be preferable
to another
(procedural
flexibility,
elegance)

Medicine



Different comparators result in different kinds of inner feedback What an item is compared against, changes what is learned

Areas of current research

[ranges from critical & creative thinking to graduate attributes]

- ❑ Theory-practice comparisons
- ❑ Analysis through different lenses (using different comparators)
- ❑ Creative thinking – comparators quite different from what students have produced
- ❑ Problem-solving processes (i.e. thinking process): comparisons against expert think-aloud video, flow chart etc.
- ❑ Knowledge elaboration/perspectives – different genre comparisons (e.g. poem against essay, diagram versus text)
- ❑ Metacognition – comparing earlier work with a later work, earlier goals with later goals
- ❑ Many possibilities in areas of skills or emotional development using narratives as comparison resource
- ❑ And in developing graduate attributes

NEW ROLE FOR TEACHER: [balancing resource with dialogic feedback]

Designer of comparison opportunities – best placed to select comparators and stage them across course. Over time shift responsibility and ask students to source productive comparators for each other.

Teachers still give comments but sparingly:

Top Tips:

- Don't feel you have to comment on every comparison – you don't do this when you give comments which also require comparisons!!
- Provide your feedback after other comparisons – reduces unnecessary feedback (workload), helps you target your comments to students' needs and reduces students' dependency on you.

Value of this feedback LENS

1. Acknowledges that **students are the architects of own feedback productions** – pushes boundaries of student-centred
2. Provides a **conceptual model to leverage what is naturally happening all the time anyway** – the making of feedback comparisons
3. Brings into play **multiple information sources** beyond comments: **different comparators = different feedback**
4. Feedback can serve many purposes – e.g. **develop critical thinking**
5. **Tractable way of addressing issue of academic feedback workload** [helps 'disentangle' assessment and feedback]
6. And the inherent **tension between feedback as telling and idea of developing self-regulated learners.**
7. **Brings together formal and informal learning** in mutually productive ways.

Key is **that students must make mindful comparisons with explicit outputs.** [online environment supports explicitness]

Resources and references

Nicol, D. 2022. "Turning Active Learning into Active Feedback", Introductory Guide from Active Feedback Toolkit, Adam Smith Business School. National Teaching Repository Resource. <https://doi.org/10.25416/NTR.19929290> [10-minute read]

Nicol, D. 2021 "The power of internal feedback: Exploiting natural comparison processes" *Assessment and Evaluation in Higher Education*. [main reference article] <https://www.tandfonline.com/doi/full/10.1080/02602938.2020.1823314>

Nicol, D., and S. McCallum. 2021. "Making Internal Feedback Explicit: Exploiting the multiple comparisons that occur during peer review". *Assessment and Evaluation in Higher Education*.
<https://www.tandfonline.com/doi/full/10.1080/02602938.2021.1924620>

Nicol, D. 2020. "Guiding learning by activating students' inner feedback" *Times Higher Education* <https://www.timeshighereducation.com/campus/guiding-learning-activating-students-inner-feedback> [short 900-word summary]




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<https://doi.org/10.25416/edgehill.19535881>

Thank you:

david.nicol@glasgow.ac.uk

For further information visit
www.davidnicol.net

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Questions



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