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The Future is Connection:

Collaboration, Creativity and Compassion in a Digital Society

Closing the loop by design: A process and system for turning unit reflection into tracked action

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Teaching teams in higher education are asked to reflect on teaching delivery and propose improvements for future periods, yet insights often remain at the level of reflection and rarely lead to tracked follow-up. Proposed actions are recorded but not systematically closed, leaving the quality-improvement loop incomplete. This paper reports the design of a unit action plan process and supporting system intended to close that loop. The process combines a single reflective template, status-tracked action items, and discipline-based review meetings that function as communities of practice. Educational designers participate to support pedagogical decisions while the system makes collaboration and follow-up visible. Synthesis of themes across action plans provides a faculty-wide view of teaching quality, with analytics supporting decision-making. We describe the workflow from reflection to tracked action and report early outcomes from faculty-wide use. We argue that closing the loop is a design problem of workflow, ownership, and educational technology, and we offer principles other institutions can adapt.

Keywords: continuous quality improvement, closing the loop, unit action plan

Introduction

Universities invest in evaluating how their units are taught. Student feedback surveys and peer review of teaching already provide some insight into teaching practice, and teaching teams are routinely asked to reflect on that evidence at the end of each teaching period. However, less effort goes into what happens next. Recommendations are often written into a report but then not followed up, so the improvement cycle that is supposed to lead to change may stay open at exactly the point where it should close (Boud & Molloy, 2013). The problem is well recognised. Biggs (2001) argued that genuinely reflective practice involves acting on what reflection reveals in order to enable change.

This concise paper reports on the design of a unit action-plan system developed in a large faculty at an Australian university to address that gap directly. Rather than adding another reporting obligation, this first design-based research cycle was guided by the question: What would it take for reflection to reliably become action, and for that action to be followed up and closed? We treat closing the loop as a problem of human-centred design, of workflow, ownership and visibility. In doing so, the work speaks most directly to human-centred learning design and to reflective practice and career communities, while treating the design and adoption of analytics and AI as something to be guided by educational purpose rather than driven by the technology, a rebalancing of the algorithm. Its underlying contribution is connection: it links the reflection, evidence and ownership that were previously dispersed across people, systems and teaching periods. The contribution of this paper is the design of an integrated socio-technical workflow that embeds educational designers and human-verified analytics into a closed quality loop.

This question and the design that follows, are framed by socio-technical and human-centred accounts of quality and analytics. We can only close a loop when roles, ownership, and professional judgement are designed in (Buckingham Shum et al., 2024; Legemaate et al., 2022).

Approach

We report the first cycle of a design-based research study, in which a solution to a practical problem is designed and deployed in a real setting to generate transferable design principles (McKenney & Reeves, 2021). The setting is one faculty at an Australian university, across two teaching periods. We draw on three data sources: system usage data (the counts of units, clusters, and tracked actions reported below), the shared

records produced in cluster review meetings, and the status updates educational designers recorded as they followed up each action. Usage data were summarised descriptively. and the qualitative records were read thematically to trace how plans moved from reflection to tracked action, with the three sources triangulated to corroborate what we observed. The evidence is formative, which characterises how the process is used and measuring closure and learning outcomes is the goal of the next cycle.

Designing to close the loop

The Unit Action Plan system is designed to address these challenges directly. It brings a unit's history together in one central location, so that a teaching team can see its grade distribution, student feedback, unit amendment history and previously proposed actions in one place, rather than scattered across separate systems. Each proposed action is then assigned to an educational designer, who follows it up and reports back in the system to record its status. Because that status is now visible to everyone, progress remains visible when the teaching team changes, creating a traceable pathway to close the loop. The mechanisms below describe how each step, from a team's reflection to an owned action and a shared record of its progress, is drawn from a single source of truth.

Designed for reflection and improvement

The entry point is a structured action plan that each unit completes at the end of each teaching period. The questions are deliberately designed to be reflective: rather than ticking boxes, the teaching team is asked to interpret their evidence and name what they would change. Responses are autosaved as the team writes, with version history and threaded comments so colleagues can tag one another for input. The aim is for the template to meet teaching teams in the language of their own practice, not as another spreadsheet of metrics (Figure 1).

From reflection to tracked actions

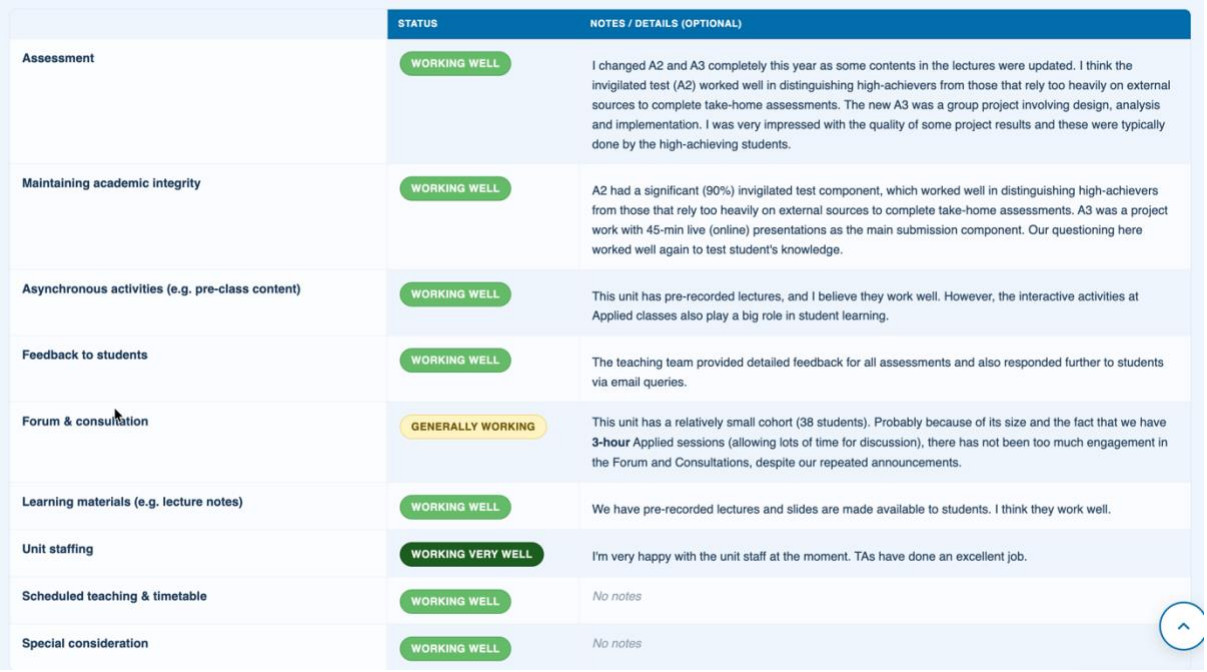
The key design move is that a proposed change does not stay just inside the plan. Each one becomes an action item with an owner, an area of focus and a status, while a tracker brings these items together across every unit. This is the mechanism designed to support closure of the loop. The change now has someone responsible for it and a status that moves from open to done, which is visible to the people accountable for it.

Communities of practice for continuous improvement

As part of the education quality process, units are not reviewed in isolation. They are grouped into education discipline-based clusters that meet to share practices and discuss common challenges. Each meeting works through a common set of questions such as:

- how assessment is responding to generative AI, including how confident the teaching team is in its results, why, and what may need to change for future offerings;
- how well-prepared students are for the unit, and how well the unit prepares them for the units that follow; and
- how classes ran, including attendance and engagement, and what practices could be shared or adapted to improve them.

Each meeting leaves a shared record of these themes and a standing list of units requiring follow-up. This turns quality from an individual unit into a community of practice, where colleagues in the same discipline discuss what to change and learn from one another. The educational designers supporting these units remain aware of the broader unit context.



	STATUS	NOTES / DETAILS (OPTIONAL)
Assessment	WORKING WELL	I changed A2 and A3 completely this year as some contents in the lectures were updated. I think the invigilated test (A2) worked well in distinguishing high-achievers from those that rely too heavily on external sources to complete take-home assessments. The new A3 was a group project involving design, analysis and implementation. I was very impressed with the quality of some project results and these were typically done by the high-achieving students.
Maintaining academic integrity	WORKING WELL	A2 had a significant (90%) invigilated test component, which worked well in distinguishing high-achievers from those that rely too heavily on external sources to complete take-home assessments. A3 was a project work with 45-min live (online) presentations as the main submission component. Our questioning here worked well again to test student's knowledge.
Asynchronous activities (e.g. pre-class content)	WORKING WELL	This unit has pre-recorded lectures, and I believe they work well. However, the interactive activities at Applied classes also play a big role in student learning.
Feedback to students	WORKING WELL	The teaching team provided detailed feedback for all assessments and also responded further to students via email queries.
Forum & consultation	GENERALLY WORKING	This unit has a relatively small cohort (38 students). Probably because of its size and the fact that we have **3-hour** Applied sessions (allowing lots of time for discussion), there has not been too much engagement in the Forum and Consultations, despite our repeated announcements.
Learning materials (e.g. lecture notes)	WORKING WELL	We have pre-recorded lectures and slides are made available to students. I think they work well.
Unit staffing	WORKING VERY WELL	I'm very happy with the unit staff at the moment. TAs have done an excellent job.
Scheduled teaching & timetable	WORKING WELL	*No notes*
Special consideration	WORKING WELL	*No notes*

Figure 1.
A unit action plan: reflective prompts and a status for each area of focus

Supportive follow-up

Follow-up is where loops most often break without the support of a process and system. We designed the follow-up process to enable change rather than merely demonstrate compliance. The system sends a message to remind the education designer assigned to a plan to follow up with the unit teaching team. The intent is to reduce the administrative burden that surrounds quality processes.

Rebalancing the algorithm

The system includes an automated synthesis of themes across all plans, revealing patterns that no single unit could see across hundreds of reflections. How that synthesis is built reflects a deliberate position on the design and adoption of digital technology in quality work. Every theme it surfaces is checked by a person before it informs any action. We let the educational purpose lead, not the technology. Keeping the human in the loop is the key design decision.

Visibility calibrated to role

Finally, what each person can see and do is based on their responsibility. Teaching staff, course directors, education leaders and educational designers each receive a view matched to their role. We also have a faculty-level summary for the board of examiners, and for specific obligations such as penalty exemptions. There is one source of truth and many lenses onto it, so that oversight never becomes duplicate work.

Early observations

As a report on innovative practice, our observations at this stage are formative rather than summative. The system is in faculty-wide use. So far it spans 107 units across 14 disciplinary clusters in two teaching periods, with 258 proposed actions, each now having a recorded status. These figures tell us the process is being used across the faculty, not that educational quality has improved as a result; measuring closure rates and learning outcomes is the focus of the next design cycle. We have seen proposed changes carry named owners and a visible status, rather than dissolving once the reflection is written. The cluster meetings now leave a shared record that carries forward to the next semester. The tracked action item has become the practical unit of

follow-up. We cannot yet report closure rates or effect sizes until the end of this year. Table 1 summarises the design mechanisms and the loop-closing function each performs.

These observations matter because they change where accountability sits. When an action has a named owner and a visible status, follow-up becomes a shared expectation rather than an individual's goodwill, and a colleague who inherits the unit can see what was proposed and why. The cluster meetings work in a similar way. They turn isolated, one-off reviews into shared knowledge that accumulates across teaching periods, so a lesson learned in one unit can inform another. Together, these shift the faculty from recording reflection to acting on it – the step where quality assurance most often stalls.

Table 1
Design mechanisms and the open-loop failure each addresses

Design mechanism	***Open-loop failure addressed***	***Design principle***
Structured action-plan template	Turns end-of-semester reflection into structured, reusable actions, not free-text notes	Reflection that enables change
Owned, status-tracked action items	Gives each proposed change an owner and a status that moves from open to done	Ownership that drives action to completion
Shared cluster review record	Carries themes and follow-up items forward between semesters and new unit teaching teams	A shared record that carries actions forward
Supportive follow-up by educational designer	Reminds the assigned educational designer to document progress	Follow-up that keeps actions moving
Theme synthesis	Surfaces faculty-wide patterns for people to act on	Analytics that prompt action, not replace academic judgement

In addition to the unit-level insights, the system also gives the board of examiners a faculty-level view that no single plan could. Looking across clusters surfaced patterns that single units could not show, such as generative AI and its effect on academic integrity and grades, declining attendance, and the volume of special consideration requests. Table 2 lists the recurring themes. These patterns came from what teaching teams wrote in the unit action plan.

Table 2
Recurring quality themes surfaced across education discipline-based clusters

Recurring theme across clusters	***What teaching teams reported or were doing***
Generative AI and academic integrity	This is near-universal. Take-home and written tasks are hard to police. Approaches converging on permit-but-verify.
Concentration of top grades	Distinction and high-distinction bands are often well above expected levels, linked to AI-assisted submissions.
Oral, interview and invigilated verification	Interviews, live demonstrations and supervised in-class tasks used to verify understanding, which are effective but resource-intensive.
Declining attendance	Lecture and seminar attendance falling after mid-semester while hands-on and assessed sessions far better attended.
Cross-location consistency	Grade and cohort differences between teaching locations. There are repeated calls for shared cross-marking.
Special-consideration volume and timing	High volume and late applications delay marking and alternative assessment.
Staffing and marking load	Interview and demonstration-based assessment plus large cohorts increase marking load.

Student preparedness	Students arriving under-prepared in prerequisite skills such as programming and mathematics.

Discussion

Our main argument is that closing the loop is a design problem. Each part of the system is simple on its own: a template to reflect in, a tracker to hold the actions, and a reminder to follow up. What matters here is how they are designed to work together as one process. A proposed change from the reflection becomes an owned action, the assigned educational designer follows it up and records its status, and that status is visible to everyone, all from one central location that also holds the unit's grade distribution, student feedback and amendment history. The design is what turns a set of familiar tools into a process that creates a traceable pathway from insight to action.

Three design principles are transferable to other settings. Firstly, give ownership and status a clear place in the system, because a proposed change with no owner and no status is not yet an action. Secondly, design the follow-up process to support and enable people to make changes rather than monitor them, so the process supports empowerment instead of adding pressure. Thirdly, keep analytics in a supporting role that supports rather than replaces academic judgement. This is a single-site design case within one faculty. Implementation elsewhere will depend on institutional culture, governance, technical infrastructure, and access to educational-design expertise. We therefore offer the design principles, rather than the system itself, as the transferable contribution.

Conclusion

Improvement only continues when the loop actually closes. We have argued that this can be achieved by design, and we have built a system in which a reflective plan is carried through to owned actions, reviewed in disciplinary communities of practice, and rolled up for oversight, creating a traceable pathway from insight to action. We offer both the system and the principles behind it as a pattern that other institutions can reuse to connect their quality processes.

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