The UTS “EdTech Ethics” Deliberative Democracy Consultation: Rationale, Process and Outcomes

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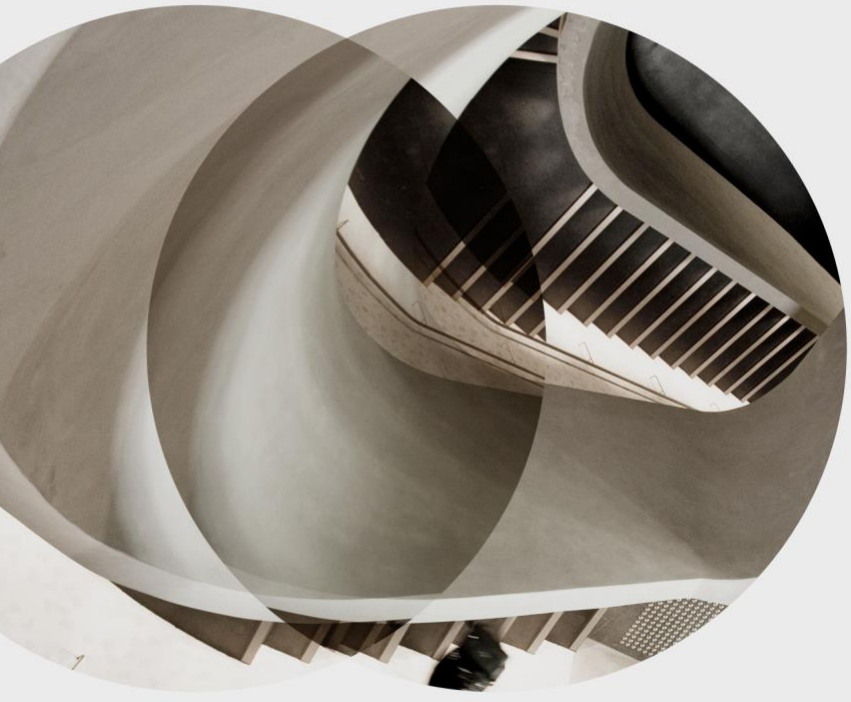

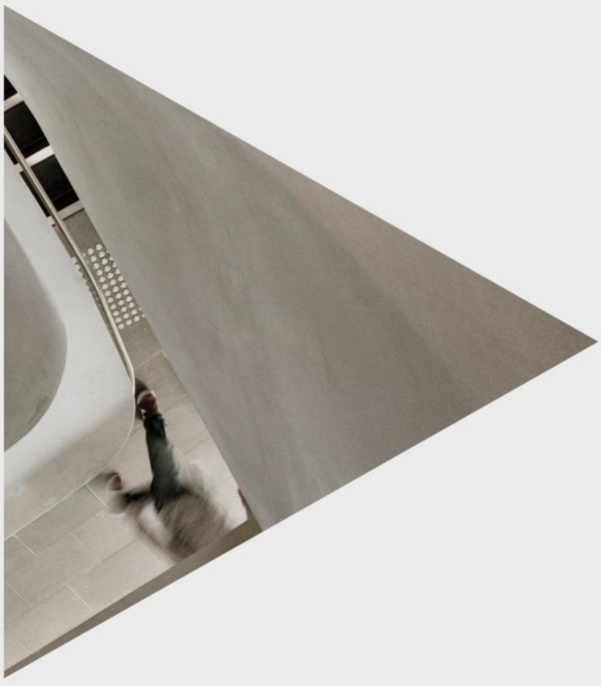

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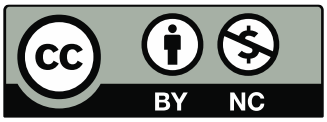


Executive Summary

This report has been written to document a novel community consultation process, using the principles and methods of Deliberative Democracy to consult with the UTS community on the following brief:

> **What principles should govern UTS use of analytics and artificial intelligence to improve teaching and learning for all, while minimising the possibility of harmful outcomes?**

We're sharing this to assist colleagues in UTS and beyond who are seeking more participatory models for community deliberation, with (in this case) specific application to the responsible use of educational technology that is powered by analytics and artificial intelligence. This is not a research paper, seeking to argue conceptual or empirical contributions to academic fields, although research is underway analysing and evaluating this process. We do hope, however, that this represents an interesting and novel 'data point' that others will find useful.

Deliberative Democracy (DD) is a movement in response to the crisis in confidence in how typical democratic systems engage citizens in decision making. DD works by creating a **Deliberative Mini-Public (DMP)**. DMPs can be convened at different scales (organisation; community; region; nation) and can take many forms.

A DMP of 20 was selected through stratified sampling from UTS students, casual tutors and academics, who engaged in a series of five online workshops over seven weeks, due to Covid-19 conditions. With little to no prior knowledge among most members, they learned about the topic, worked well together, and converged on a set of principles that they felt reflected their shared values. The university experts who were involved in the workshops recognised the quality of the progress made in such a short period. UTS now has a plausibly representative expression of the community's values, interests and concerns, in response to the brief. The principles can be viewed in Appendix 1: Draft Ethics Principles.

The raison d'etre for the initiative is to build trust within the university that these technologies are being deployed responsibly. The DMP process delivered on its promise to build engagement and trust across diverse stakeholders. The recording of the DMP's introduction to several senior leaders conveys the passion and commitment that they invested in the process and outcome, reinforced by the preliminary themes emerging from interviews with students, educators and senior leaders.

Deliberative Democracy, even when conducted wholly online, would appear to offer educational institutions an approach to address the urgent need for meaningful student/staff consultation on the ethical implications of introducing Learning Analytics and Artificial Intelligence into teaching and learning. The implementation process is now beginning, which we will be studying with equal interest.

1 University Context

UTS is recognised as leading in researching data science, analytics and artificial intelligence[1], and advancing social justice.[2] UTS also works at the scientific and policy intersection — the challenge of designing and governing ethical, responsible technology.[3] These values must also translate into 'our own back yard' — the core business of teaching and learning. Like most universities, UTS stores an increasing quantity and quality of student and staff activity in the form of activity traces logged in online platforms. This raises important questions about how such 'surveillance' capability is as transparent and beneficial as possible for all stakeholders, in order to preserve the community's trust in a fast-moving area.

The challenge of doing this well is the focus of the academic fields such as *Learning Analytics, Educational Data Mining,* and *AI in Education.* While educational technology (EdTech) covers the entire spectrum of software tools used to assist teaching and learning, we will use the term *Analytics/AI-powered EdTech (AAI-EdTech)* to refer to interactive learning and teaching software using analytics or AI to make sense of student data.

UTS is a leader in developing the field of Learning Analytics, and in deploying AAI-EdTech in its teaching[4] including active work on the ethics of such tools[5] and how diverse stakeholders can be brought meaningfully into the design process.[6] We have demonstrated the benefits of using data in pedagogically meaningful ways, including provoking students to write in more academically rigorous ways, [7] enabling academics to provide timely, personalised feedback at scale,[8] and enabling students and educators to reflect on face-to-face teamwork.[9]

The usual ethics-related policies are in place at UTS (e.g., Privacy, Confidentiality), and the evaluation of **LA/AIED research prototypes** and **participatory design processes** must be approved by the Human Research Ethics Committee (HREC). However, as AAI-EdTech advanced, UTS sought to institute:

- principles and policies that address the **particular** ethical issues that can arise with AAI-EdTech;
- a **consultation process** to engage the diverse community of students, tutors and staff in informed deliberation about their expectations and values with regard to AAI-EdTech.

With the growing use of AAI-EdTech, the Deputy Vice-Chancellor (Education & Students) requested that the Connected Intelligence Centre (CIC) coordinate the development of a set of ethical principles to inform policy around their usage. While several universities have helpfully published statements that set out their principles,[10] CIC identified the potential of "Deliberative Democracy" processes as a participatory methodology to enable stakeholders to co-develop such a set of principles, as detailed next.

2 Deliberative Democracy

Deliberative Democracy (DD) is a movement that has emerged in response to the crisis in confidence in how typical democratic systems engage citizens in decision making. DD works by creating a **Deliberative Mini-Public (DMP)**. DMPs can be convened at **different scales** (organisation; community; region; nation) and can take **many forms**[11] (e.g. Citizens' Juries; Citizens' Assemblies; Consensus Conferences; Planning Cells; Deliberative Polls).

A DMP has three core features: [12]

- "*Influence:* The process should have the ability to influence policy and decision-making.
- *Inclusion:* The process should be representative of the population and inclusive of diverse viewpoints and values, providing equal opportunity for all to participate.
- *Deliberation:* The process should provide open dialogue, access to information, respect, space to understand and reframe issues, and movement to toward consensus."

Moreover, "**random selection**, more than any other feature, is what delivers the 'mini-public' aspect of a DMP." DMP participants are recruited by pure random sampling from the whole population, or stratified sampling from important sub-populations to ensure a representative balance. This "produces a certain mindset in the room, which is very different to that resulting from a selection process governed by election, by the selection of interest group representatives or by merely allowing those most interested to turn up."

Other key features are: [13]

- **Who sets the DMP's purpose/agenda** may be contentious. If there are concerns that the government/management are unreasonably biasing the outcome by the very framing of the problem, then the DMP should be conducted at arms length.
- DMPs are **facilitated** by a neutral person or even better, a pair/team, who have no stake in the outcome.
- Participants commit to engaging in **deliberation** which requires more than the usual modes of discussion: the 'rules of engagement' typically include giving reasons for views, fairness, equality of voice, and openness to difference.
- **'Expert witnesses'** contribute to make the deliberation as well informed as possible, but are not directly part of the DMP decision-making process. Experts should be balanced so as not to bias deliberation unreasonably. The DMP may have the power to call their own experts.
- **The DMP's recommendations/decisions** are decided deliberatively, providing reasons for recommendations.
- The DMP should be sanctioned by government/senior leadership, with **a commitment that the DMP's recommendations/decisions matter.** Depending on the context, the DMP's outputs may be one of many inputs to a policy consultation, or the primary input. What is critical is that the DMP is not seen as a tokenistic exercise.

DD is an active field of political theory and practice,[14] with many companies now offering services to design and facilitate such consultations. The New Democracy Foundation[15] is a primary source

of information within Australia, and UTS offers short courses, which catalysed the conception and co-design of the present initiative.[16]

The most encouraging research literature documenting DD initiatives raises expectations that the citizens recruited to the DMP will grow in their sense of ownership of the process, as they get to know each other and become immersed in the complexities of the problem. This leads to a strong sense of ownership of the outcome, and commitment to seeing it make a difference.

2.1 Suitability of the DD model for this consultation

DD appeared to provide a strategy for developing a trustworthy set of ethical principles to govern AAI-EdTech:

- **Trust:** It is important that the UTS community has a high degree of trust in the principles that emerged from the deliberative process. To gain this trust it is important the UTS community are aware of DD's principles for designing mini-publics, conducting quality deliberation and how DD processes are more robust than the usual approaches that invite people to self-nominate, or where the commissioning organisation selects representatives from specific groups.
- **Representation:** A representative DMP could be designed through access to relevant demographic information on students and staff, for stratified sampling.
- **Experts:** The subject matter is technically, educationally and ethically complex, requiring access to experts who can help inform dialogue and decisions. Experts are available at UTS, and external experts could also be brought in.
- **Facilitation:** DD requires skilled, neutral facilitation. The necessity to run the entire process online due to the pandemic added further complexity. While UTS might potentially have provided facilitation through existing experts, due to the desired timescale and need for independence in leading deliberations, an external facilitator was appointed with specialist DD knowledge, supported by a colleague who managed the orchestration of online tools pre/during/post-online workshops.
- **DMP engagement:** The DMP members need to be able to work with complex material, and commit to engaging with the whole process. Compared to some of the communities with whom DD has been used, it was judged that UTS staff and students as a population should have the personal resources to sustain this engagement.
- **Output:** A draft set of ethical principles is the envisaged output from the DMP, for consideration by UTS leadership.
- **Senior leadership sanctioning:** The initiative had DVC (ES) support, with the assurance that the proposed principles will be seriously considered in formulating UTS policy.

While UTS already has deep expertise in facilitating design thinking workshops, the DD principles for recruiting participants, providing access to learn from and question expert witnesses, and commit to respectful, extended dialogue, are distinctive.

The DD process is clearly also different from "crowdsourcing" ideas through ideation platforms, an approach which has also been used at UTS.[17] This generates hundreds of ideas online from the community, and provides mechanisms to upvote and discuss ideas online, but provides no scaffolding of the critical deliberative, sensemaking processes that help a diverse group converge

on a collectively owned outcome: considering ideas against others, exploring trade-offs, combining/amending ideas, and prioritising options.

2.2 The brief

A critical element to design well in a DD consultation is the brief: *what is the DMP being asked to do?* The planning team set this as the brief:

> **What principles should govern UTS use of analytics and artificial intelligence to improve teaching and learning for all, while minimising the possibility of harmful outcomes?**

2.3 Recruitment of the DMP

The DMP was selected through stratified sampling from UTS sub-populations, as far as possible intersecting a range of demographic attributes.

- The initiative was advertised within UTS via a public website (https://cic.uts.edu.au/projects/edtech-ethics), email lists and social media channels targeting Academics, Tutors and Students. 131 expressions of interest were received.
- 2 applicants who were not available for all five sessions were excluded. Names and emails were removed, leaving only a unique identifier, for anonymous selection.
- Each of the 4 categories of participant was balanced for gender (2F, 2M) as far as possible, although only 1 male academic volunteered.
- For staff each category was also balanced for Faculty, such that there was only one staff representative of each discipline per category, spanning 8 disciplines.
- Similarly, each student category (Undergrad/Postgrad) was balanced for discipline, ensuring to include any disciplines not represented in the staff.
- Students were also balanced for junior (Year 1-2) and senior (Year 3-4).
- Attention was paid to balancing English as a Second Language (ESL) as far as possible within the above constraints
- A particular effort made to recruit students declaring Indigenous status, given their under-represented status in higher education and ed-tech development (1 undergrad, 2 postgrads).
- Students and casual tutors were reimbursed at the university rate (17 hours covering five workshops and intervening activities).

The resulting DMP profile is summarised below:

Gender	Indigenous	ESL	UG Yr	Staff	Faculty
Academics					
M	No	No		Lecturer	Business
F	No	No		Lecturer	Design
F	No	No		Senior Lecturer	Science
F	No	No		Senior Lecturer	Transdiscip
F	No	Yes		Senior Lecturer	Transdiscip
Casual Tutors					
M	No	Yes			Arts/SocSci
M	No	No			Eng/IT
F	No	Yes			Health
F	No	No			Law
Undergrads					
F	No	No	1st Year		Eng/IT
F	No	No	3rd/4th Year		Transdiscip
M	No	Yes	3rd/4th Year		Science
M	Yes	No	1st Year		Communication
M	No	Yes	2nd Year		Eng/IT
F	No	Yes	2nd Year		Design
Postgrads					
F	Yes	No			Health
M	No	Yes			Arts/SocSci
F	Yes	No			Transdiscip
M	No	No			Transdiscip
F	No	Yes			Business

2.4 Selection of expert witnesses

Experts were selected who could describe how AAI-EdTech was already, or could in the future be, used at UTS, and the ethical aspects associated with each approach:

- Simon Buckingham Shum (senior academic) in Learning Analytics, who was also the initiative's coordinator
- Simon Knight (mid-career academic) in Learning Analytics
- Lisa Lim (early career academic) in Learning Analytics
- Veronika Roth (senior administrator) spoke about the emergency introduction of the ProctorU online proctoring service at UTS for off-campus examinations
- Amara Atif (early career academic) spoke about her experience of using a learning analytics tool in her teaching

Two external experts were selected to bring complementary expertise in technology ethics:

- Kalervo Gulson and Teresa Swist (University of Sydney) conducted a briefing on the ethical aspects of online proctoring systems using AI

- As part of an HREC-approved research project, they also sat in on some of the workshop planning primarily as observers, and led the design and running of post-workshop interviews.

Automation can raise legitimate concerns among staff and students alike. The National Tertiary Educators Union and UTS Students Association were informed of the consultation, and invited to advertise it to members during the recruitment process, with the opportunity to propose expert witnesses to represent their perspectives. However, they were unable to engage due to the demands of other campaigns at a very turbulent time in higher education. They will be kept informed as the consultation's results are disseminated, and the conversation opened up to the broader community.

2.5 Design of the DD process

A facilitation team specialising in DD was appointed to design and run the process (see Acknowledgements), in close consultation with the UTS lead (SBS). Five workshops were run over a period of seven weeks, with 30mins 'homework' time also allocated before each workshop (total 17 hours):

- Session 1: 21 Oct 1-4pm (Opening welcome from the DVC Education & Students)
- Session 2: 4 Nov 1-4pm
- Session 3: 18 Nov 1-4pm
- Session 4: 25 Nov 12-4pm
- Session 5: 2 Dec 2.30-4pm (Closing presentation to UTS leaders)

The DD process was designed so that the output of Session 3 produced a work-in-progress draft of the principles, shared with a group bringing diverse expertise, who gave their written and spoken feedback in Session 4 in Zoom plenary and breakout groups. One of these was joined by two new senior leaders to give feedback on the final draft in Session 5.

A first draft was shared after Workshop 3 with a diverse group of stakeholders whose teams would be expected to apply the principles, plus experts on learning analytics, ethics and social justice:

- Ed Santow (Industry Professor in Responsible Technology, & AUS Human Rights Commissioner 2016-21)
- David Lindsay (Professor of Law & Technology)
- Susan Gibson (Head, Data & Analytics)
- Jan McLean (Director, Institute of Interactive Media in Learning)
- Verity Firth (Director of the Centre for Social Justice & Inclusion)
- Heather Ford (Assoc. Professor, Digital and Social Media)
- Antonette Shibani (Lecturer in Data Science & LA/AIED Researcher)
- Nicole Vincent (Senior Lecturer, AI Ethics)

In the closing workshop, four members of the DMP, who were elected by their peers, introduced the revised, extended principles to three senior leaders in UTS with different briefs for the responsible implementation of data, analytics, and AI:

- Craig Napier (Chief Data Officer)
- Deborah Naray (Head, Corporate Information)
- Verity Firth (Director of the Centre for Social Justice & Inclusion)

The recording of the DMP's introduction conveys the passion and commitment that they invested in the whole process and the outcome.

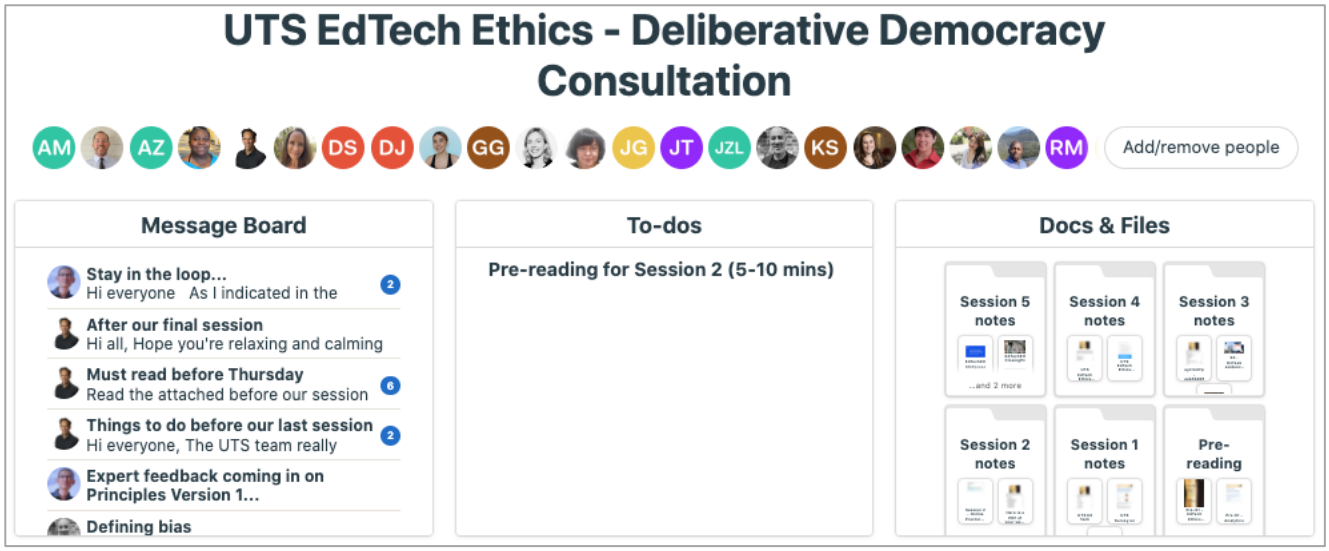
The principles can be viewed in Appendix 1: Draft Ethics Principles.

3 The online DD experience

DD is normally conducted face-to-face, in facilitated workshops. The Covid19 pandemic forced us to move entirely online, using Basecamp as the project 'home', meeting in Zoom and capturing work in Google Docs in the 5 workshops, with preparatory or follow-on work usually in Google Docs.

3.1 Basecamp

This screenshot of the homepage in Basecamp illustrates the organisation of resources, which proved to be a user friendly place to coordinate with the DMP.



3.2 Zoom

Operating under Covid-19 lockdown conditions, a key challenge was to replicate as far as possible the energy and productivity of face-to-face workshops. Poor online experiences would lead many to dread 3-4 hour workshops in Zoom, but designed well, these can be engaging and energizing. The DMP without doubt worked hard in the workshops, and were assisted by expertly designed agendas and facilitation.

3.3 Google Docs

Each workshop added to a cumulative Google Doc, providing a complete history in one place of all the ideas. The facilitators could also use the Google Doc to unobtrusively monitor the progress of teams as they worked in Zoom breakout rooms, dropping into a breakout room if it seemed to be struggling to record ideas in time.

4 What have we learnt?

This is not a research paper, seeking to argue conceptual or empirical contributions to academic fields, although research is underway analysing and evaluating this process. We do hope, however, that this represents an interesting and novel 'data point' that others will find useful.

What can we conclude at this point?

4.1 An effective DMP was formed

A DMP of 20 was recruited from 131 applicants, using stratified random sampling to ensure as balanced diversity as possible. With little to no prior knowledge among most members, they learned about the topic, worked well together, and converged on a set of principles that they felt reflected their shared values. Many principles had unanimous agreement, with all principles having a minimum 80% agreement from all participants. The university experts who were involved in the workshops recognised the quality of the progress made in such a short period.

Given more time, there would doubtless have been additional expert input, deeper learning, more deliberation and possibly a differently articulated set of principles. However, given constraints, we judge this phase to have been a success: the university now has a plausibly representative expression of the community's values, interests and concerns, in response to the brief:

> **What principles should govern UTS use of analytics and artificial intelligence to improve teaching and learning for all, while minimising the possibility of harmful outcomes?**

How 'complete' is the current draft? Are these principles qualitatively different from other principles? These are fascinating questions for future research. Such questions are critically important for the next reason.

While we must be cautious about the above questions, we can say more confidently that the DMP developed a strong sense of ownership of the process and product. Since a key driver for the initiative is the desire to maintain trust within the university that these technologies are being deployed responsibly, this was important. The DMP process delivered on its promise to build engagement and trust across diverse stakeholders, and it seems reasonable to conclude that this is a greater degree of 'buy-in' than would be accomplished by the more usual methods, for instance, whereby an expert team drafts the principles and circulates them for feedback, or convenes a workshop which engages participants, but too briefly for deeper learning and deliberation.

4.2 Feedback from participants

After each workshop we checked in on the DMP participants' experiences with quick online surveys: 3-4 hours online in a badly designed Zoom workshop would quickly lose good will,

undermine trust, and give poor outcomes. These confirmed that they were not disengaging from the process, and enjoying the sessions despite being worked hard by the rapid pace of activities.

As part of the HREC-approved research to evaluate this initiative, participants were offered the opportunity to give detailed feedback through an interview following the final workshop. A detailed research analysis is in preparation, but preliminary insights from interviews conducted to date with students, educators, and experts span the following key areas:

i) Perceptions of DD

- **Students**: perceived DD as an egalitarian process that gave participants responsibility and ownership for the outcome, which relied on the coordination of participation to ensure a wide range of perspectives were represented.
- **Educators**: in contrast to collaborative projects which had the potential to be disingenuous, DD helped guide a process which prioritised authentic knowledge-sharing.
- **Experts**: perceived DD as a way of foregrounding expertise and guidance so as to level the conversation 'playing field'; a fundamentally unique form of consultation which prioritises the knowledge produced by participants; and that it creates a space for equal information exchange and involvement.

ii) Experiences of the DD process

- **Students**: largely felt comfortable engaging in the process and, in particular, that the smaller break-out rooms made speaking up easier. They learnt about a range of technologies and issues, such as the ed-tech tools designed in-house by UTS (e.g. AcaWriter), as well as the ethics and process of how UTS implemented the online invigilation (Proctor) during COVID-19.
- **Educators**: offering the opportunity to listen to, and empower, students; having to strike a tricky balance between inviting diverse perspectives and time-keeping pressures; and, that the style of agenda (focused on education) and scope of participants (students, educators, and experts) was vitally important.
- **Experts**: the DD process offered a way to discuss complex topics, such as online invigilation, in a supportive and non-stressful way with participants who didn't know each other very well; it was an educative experience to learn about issues, such as procurement, which often doesn't address the interests and needs of people actually using the technologies; and, the sessions emphasised two-way information exchange (not one-way input) which became a collaborative way of sharing decision-makers power.

iii) Views and visions of the principles

- **Students**: felt proud, invigorated, excited and empowered about being part of the student-staff team which generated these principles for UTS over the course of just five sessions. They also found it rewarding to have reached a consensus together as a way of sharing and shaping different views. There was also a sense of feeling privileged to be part of a process which aimed to be useful for the whole UTS community - plus a hope that it would be an 'ongoing conversation'.
- **Educators**: felt that this process and the generated principles helped bridge the knowledge-gap between students and staff; also a sense of satisfaction from having your voice heard,

cross-pollinating ideas, meeting new people; plus the sense of pride, value and importance of creating a set of guiding principles for not only action, but also judgement - which could only be achieved through working together towards a consensus.

- **Experts**: felt that this DD activity of generating a set of principles was something distinct to UTS; seen as something unique and exciting which involved the perspectives of different stakeholders; and pleased that such a conversation has started at an organisational level which reflects the need for on-the-ground approaches which could inform accountability.

iv) Recommendations for future deliberative experiments and shaping the future of ethical AAI-EdTech

- **Students**: more guided homework and tasks in-between sessions to prepare for activities; more varied activities (rather than writing); ensuring that everyone can contribute in the allocated time; and, hopefully being able to have face-to-face sessions in the future.
- **Educators**: identify alternative online platforms to Basecamp (to minimise logins); continue with the really good information packs and consider a gender balance for the main facilitator roles; obtain testimonials from participants about this DD process of prioritising teaching and learning (so that data and analytics always support and complement this educative agenda).
- **Experts**: a willingness to be open to uncertainty and future possibilities - and to ponder that from various perspectives before we make decisions; to figure out what is the most appropriate procedure, as well as ongoing evaluation about its effect on stakeholders; plus the need to change mind-sets through a community of practice for sharing knowledge, experiences, and ideas.

Overall, the majority of participants highlighted that this experiment has sparked a deliberative process which should be an ongoing and reflexive conversation, as well as responsive to the varying concerns of the UTS community in light of rapidly emerging technologies. Participants view the DD process as something they would like to continue to be involved in for this particular project - and potentially other issues (if it sparked their interest).

4.3 DD for other UTS consultations?

To our knowledge this is the first time that a Deliberative Democracy methodology has been used for a UTS consultation. The experts and leaders who gave feedback on the principles (Workshops 4 and 5) were impressed with what had been accomplished through this intense process. This suggests that there is scope for applying DD processes to other university-wide challenges.

We are also interested to learn if this proves useful to other institutions, in potentially very different organisational or cultural contexts. The evidence from the Deliberative Democracy movement and research literature would indicate that in principle, with suitable adjustments, the model can translate across such contextual boundaries.

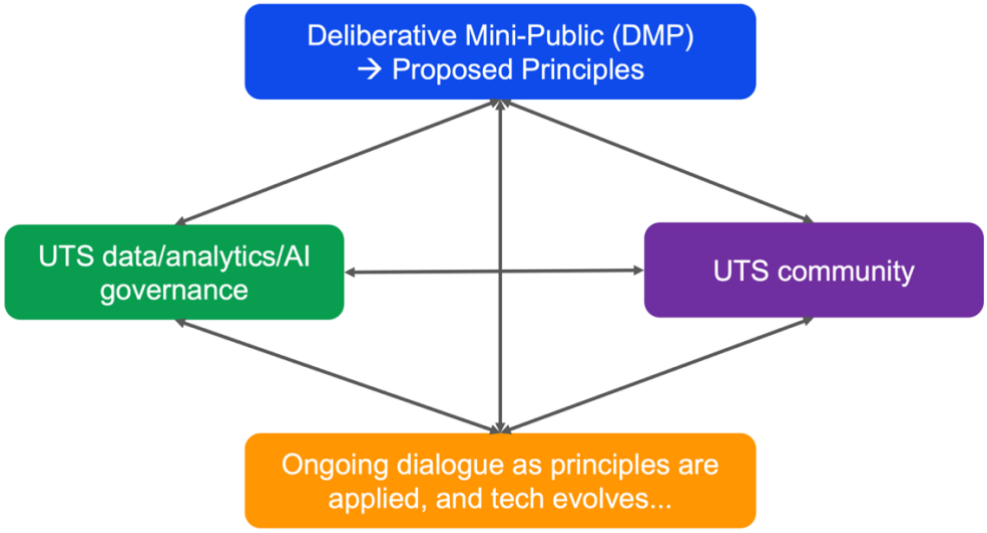
4.4 Next steps

The principles (Appendix 1: Draft Ethics Principles) raise many interesting and important questions for UTS to engage with.

In terms of the process of reviewing and implementing them, several important questions now arise, including:

- How does the wider community learn about, and become part of the conversation?
- How do these principles align with existing UTS policies?
- How will the principles and the policies they inform be applied, and by whom?
- How will we know if they're making a difference?
- How will UTS be accountable to its community?

The conversation that began in the DMP could continue in different kinds of face-to-face and online settings, as sketched below, and discussed next.



4.5 Engaging UTS governance

The UTS Analytics & Data Governance Steering Committee (ADGSC) is the university's senior body, chaired by the Chief Data Officer, with oversight of the implementation of the Data Strategy, which includes legal requirements and ethical practices. Following a briefing after the final DMP workshop, ADGSC gave it a very positive reception, recognising the importance of consulting widely and deeply on such complex issues, the novelty of the methodology, and the timeliness, given the university's intention to develop broader policy around the ethical use of AI.

It was agreed that a working group would be created to coordinate the alignment of the draft principles with other UTS policies, and address questions around implementation. Membership would include representation from the DMP, and engage a wider network of AI and ethics experts within UTS.

4.6 Extending the conversation to the university, and beyond

We are now planning how best to disseminate the work to date, and facilitate the ongoing conversation in a fast-moving field, with UTS for a of different sorts.

As will be obvious from the draft principles, the issues raised transcend the UTS context, so we hope this process, and the particular outcomes, will be of wider interest to different communities.

5 Conclusions

Consultations are always an exercise in making progress within the available constraints. There is no doubt this process and product could be improved (a focus of our evaluation research), but on the evidence of this experience, it seems fair to judge the current draft principles as 'good enough', because the process had the necessary integrity for participants to trust it, and they converged on a set of principles that they felt represented fairly the diversity of perspectives. This has served to move the conversation forward with the university's leadership, providing a good foundation for the implementation stage, and ongoing dialogue.

Deliberative Democracy, even when conducted wholly online, would appear to offer educational institutions an approach to address the urgent need for meaningful student/staff consultation on the ethical implications of introducing Learning Analytics and Artificial Intelligence into teaching and learning. The implementation process is now beginning, which we will be studying with equal interest.

6 Appendix 1: Draft Ethics Principles

The DMP's deliverable was to present a set of principles in Workshop 5, each organized using this template:

Principle: [a short summary]
Rationale: [more detailed explanation of why this matters]
Examples [as they impact 3 stakeholder groups] Students 1. ... 2. ... Educators 3. ... 4. ... University 5. ... 6. ...

6.1 Preamble

Definition: For convenience, we use the term **Analytics/AI-powered Educational Technology (AAI-EdTech)** to refer to interactive tools using analytics or AI to make sense of student data.

UTS acknowledges that AAI-EdTech systems will have a huge impact on the UTS community and on global society. Teaching and learning is a fundamentally human activity and this should drive the implementation and use of AAI-EdTech at UTS. UTS should explore the potential of AAI-EdTech but not at the cost of human to human interaction. AAI-EdTech should not replace the human dimension, it should complement it. In leveraging the potential of AAI-EdTech, UTS commits to:

- AAI-EdTech systems that are responsible, fair and consistent with UTS' role as a public institution that is committed to social justice principles and societal wellbeing;
- AAI-EdTech systems that foster a stewardship of public trust in our graduates protecting human dignity and natural ecologies;
- designing AAI-EdTech systems in such a way that enables humanity to flourish and avoids causing undeserved harm or unnecessary suffering;
- procuring and developing AAI-EdTech systems that are designed, deployed and operated in an ethical manner;
- preferencing the human, social and ecological dimensions beyond the efficiency and productivity drivers of these AAI-EdTech systems;
- ensuring that these AAI-EdTech systems take into account the consequences of their implementation for the whole university community: academic, professional staff, and students;
- addressing the asymmetry of power, access and knowledge that can arise from the implementation of AAI-EdTech driven systems;
- continuous and consistent accountability and transparency of the AAI-EdTech systems;
- applying the guiding principles below at every stage of the AAI-EdTech cycle; from design, implementation, use and review of these systems.

6.2 Accountability/Transparency

Principle: UTS is accountable to the university community and its stakeholders in the open, transparent, fair and equitable use of AAI-EdTech.

Rationale: UTS is accountable to the university community and all of its stakeholders regarding the implementation of AAI-EdTech systems and how this impacts specific stakeholder groups. In this case, accountability refers to the university making ethical decisions and taking responsibility for all of its policies in the use of AAI-EdTech along with their implications.

Furthermore, UTS is responsible for communicating their AAI-EdTech policies in a way that is readily available and accessible to all groups. UTS must ensure that contextually appropriate transparency is given in regards to its use of AAI-EdTech.

Accountability and transparency should be both continuous and consistent.

Continuous, in regards to accountability: that AAI-EdTech is continuously evaluated and re-evaluated when new technology is introduced or updated. In regards to transparency: each time AAI-EdTech is being used, all parties should be made aware of it from beginning to end (clearly and openly).

Consistent, in regards to accountability: that it applies to all AAI-EdTech used by the UTS. In regards to transparency: that there is a standardised protocol for informing the university community and stakeholders of the use of AAI-EdTech, and that it applies equally to all stakeholders and across different situations.

Examples

Students

1. Students are made aware of the AAI-EdTech systems in place along with all ways data is being collected about them (how, when, where, why, for how long). This information is easy to obtain and access. ‘At risk’ students are communicated to more consistently, ensuring they are fully informed.
2. Students are made aware of what repercussions / consequences there are for opting out of AAI-EdTech - and what alternative options are available to them.
3. In particular, new students should be given a module during orientation that outlines all of the AAI-EdTech systems they might have to use in their studies at UTS, and the process for raising concerns or complaints, so that they are as informed as possible upfront [links to consent principle].
4. Students are made aware of all ways data is being collected about them (how, when, where, why, for how long). This information should be easy to obtain and access
5. Furthermore, there should be a standardised process for informing all students when a new AAI-EdTech system is introduced, similar to the above
6. Students are able to raise concerns or complaints about the use of specific AAI-EdTech systems/programs through a standardised process - and these concerns/complaints are then used when the university/educators are reviewing and re-evaluating the use of those specific systems/programs.

7. ‘At risk’ students identified by the AAI-EdTech systems are communicated to more consistently, ensuring they are fully informed.

Educators

7. Universities should take great caution in communicating and justifying educators’ involvement with AAI-EdTech (e.g. increased workloads, being monitored, how this might contribute to their job prospects/performance review, etc)
8. Educators being made aware of if / how the students’ data collected from their classes will reflect on them as educators
9. Educators are made aware if the AAI-EdTech systems are ever used to measure or evaluate their performance as educators - and are able to raise concerns or complaints about these systems that will be used when the university is reviewing the use of those systems.
10. Educators are made aware of the AAI-EdTech systems in use at the university and of their obligations / staff policies regarding how these systems can / should be used as educational tools [links to justification/evidence principle].
11. Similar to the students, new staff should be given a module that outlines all of the AAI-EdTech systems available for them to use, and the process for raising concerns or complaints about these systems, so that they are as informed (if not more so) than the students.
12. (same as for students) there should be a standardised process for informing all educators when a new AAI-EdTech system is introduced

University

13. UTS will regularly review the use of all of its AAI-EdTech systems and evaluate its efficacy as an educational tool. During these reviews, all concerns, complaints or other issues raised by students and educators will be addressed and changes will be made to the systems or in the use of these systems as appropriate.
14. If a particular AAI-EdTech system is consistently receiving significant numbers of complaints and/or causing negative impacts for either students or educators, UTS will remove that system altogether - i.e. no AAI-EdTech system should become so entrenched in the university that it can’t be removed because it’s “too much of a hassle”.
15. Members of the university community - particularly students and educators - should be involved in the regular review / evaluation of the existing AAI-EdTech systems implemented at UTS, so that their lived experiences with the technology are taken into account.
16. Educators are included in the process of deciding on which new AAI-EdTech systems to introduce to the university, so that UTS can benefit from their perspective and experiences (after all, these tools are meant to assist them primarily!)
17. Further, both educators and students must be included on the procurement panel for a new AAI-EdTech system, with the majority vote on whether that system is purchased or not. Not procuring an AAI-EdTech system should always be a valid option.
18. UTS must ensure that, as much as possible, information about AAI-EdTech systems is open and freely accessible for the university community - as long as this transparency is contextually appropriate.

19. UTS must disclose not only the use of these AAI-EdTech systems / technologies but also which companies they are working with in their procurement.
20. UTS should implement a standardised process / protocol both for informing the university community about the use of each AAI-EdTech system, but also for the community to raise any concerns / complaints about that system (for example, a pop-up message on Canvas when students first navigate to a new subject, informing them that their activity on Canvas will be logged (and why) and providing a link to a page with more information about this + a clear link to the place where they can raising concerns / complaints)

Other examples

21. Communicating what AAI-EdTech can and cannot do to all stakeholders

6.3 Bias/Fairness

Principle: UTS should aim to reduce bias involved in AAI-EdTech programs, and maintain the fairness in their development, use, and application of these tools.

Rationale: Bias: The application of AAI-EdTech programs may incur a level of bias as it is modelled against the majority of the population. It needs to be developed, maintained and reviewed to ensure nuances and inferences are not biased against minority groups.

Fairness: The use of AAI-EdTech programs need to consider fairness, avoid and evaluate inevitable biases in tech to Aboriginal, CALD, minority groups as well as monitoring against groups/individuals

Examples

Students

1. AAI-EdTech that discriminates against minority groups in terms of access, language and environment.
2. An example of where there might be internet connection issues, for example with exam proctoring, which could be a socio-economic issue [we need to think of bias and equity as separate yet interconnected issues].

Educators

3. Overseas students, with English as a second language and different practices of usage of platforms. Their engagement may be less, in comparison with someone who might be very tech savvy. Or, cultural dimensions, such as loss of face, so if a platform is flagging issues: how does an educator implement to support people's learning from different cultural backgrounds?
4. Educators are provided with training programs to ensure they are not perpetuating biases that may be present in these AAI-EdTech systems (or that they are not using biased assumptions in their use of the analysts and data provided by these AAI-EdTech systems)

University

5. UTS reviews the biases and fairness of existing AAI-EdTech systems with a diverse panel made up of minority groups (including First Nations people, CALD, etc) from throughout the university community, and either corrects any gaps in fairness / addresses any biases in that system, or if that's not possible, removes the AAI-EdTech system

6.4 Equity and Access

Principle: UTS should aim to ensure that AI-Edutech programs promote social justice and are equitable and accessible. This includes ensuring equitable access to information and technology that is delivered in language and formats that reflect the diverse needs of the UTS community and equitable access and input to the review of AI-Edutech systems.

Rationale: Technology should promote social justice, affirmative action and positive discrimination (rather than merely preventing inequities). Access encompasses both access to information and access to technology in the fields of learning and teaching. Access to technology is not solely limited to just the hardware/software but also access to training processes around using them. It needs to reflect the diverse needs of the UTS community: people with disability, disadvantages, Indigenous Australians and cultural and linguistic diversities. AI-EduTech programs need to be constantly reviewed by the UTS community to ensure social justice (that they are equitable and accessible). Equity and accessibility need to be ensured and championed across the full life-cycle, from design to procurement, to implementation and throughout the full period of usage. Continual review of systems is necessary to identify when programs are no longer serving users as intended, or if misuse occurs and these services need to be taken out of circulation

Examples

Students

1. Ensuring that anything one **consents** to is in language and formats that people can understand and engage with easily [links to consent principle].
2. Students are provided with training programs to bridge any assumed knowledge gaps in the use of hardware and/or software that underpin the AAI-EdTech systems they are required to use in their studies

Educators

3. Overseas students, with English as a second language and different practices of usage of platforms. Their engagement may be less, in comparison with someone who might be very tech savvy. Or, cultural dimensions, such as loss of face, so if a platform is flagging issues, how does an educator implement it to support people's learning from different cultural backgrounds, disabilities and disadvantages.
4. Equity and access applies just as much to educators as to the students. Educators must be provided with training programs to ensure they fully understand these AAI-EdTech systems and the best practices for how to incorporate them into their teaching practices in a way that most benefits their students

University

5. An accessibility panel, including students, faculty representatives and support staff, that accesses the technology prior to procurement (ensures that accessibility is included in design of technology).
6. UTS reviews the accessibility of existing AAI-EdTech systems with the aforementioned accessibility panel, and either corrects any gaps in accessibility, or if that's not possible, removes the AAI-EdTech system.

7. UTS incorporates an accessibility panel throughout the entire design process for all AAI-EdTech systems designed by the university.
8. UTS aims to choose AAI-EdTech systems that promote human connection and are easy to use - i.e. focus on functionality and inclusivity

6.5 Safety and Security

Principle: The data lifecycle is managed safely and with the intent of assuring security for all.

Rationale: This principle focuses on protecting the security and safety of user data at all stages of the data lifecycle (creating, preparing, using, storing, archiving and deleting data). It is critical to understand that the data lifecycle has many entry and exit points as well as actions which manipulate, store and remove value. It is important that we address how individuals and groups are protected whilst maintaining the quality and integrity of the data. Actions in this space should be informed by the need to mitigate risk

Examples

Students

1. Being informed of what and how their data is created and stored, and what they can do to keep their data safe.
2. Control third party clients in terms of what information they retain and have access to.
3. Permission to delete after graduation.
4. De-identification processes.

Educators

5. Being informed of what and how their data is created and stored, and what they can do to keep their data safe.
6. Be aware of the safety and security of AAI-EdTech usage
7. Ensure that we are trained sufficiently to use and understand the tools

University

8. Choosing AAI-EdTech services/apps that follow this principle (e.g. services with transparent policies, or secure servers located in Australia)
9. Seeking permissions to use/share any and all data

6.6 Human Authority

Principle: UTS commits to preserving human autonomy, agency and decision-making while harnessing the opportunities presented by AAI-EdTech

Rationale: AAI-EdTech presents many opportunities and affordances in the educational context. These are likely to grow in both number and complexity in the future. AAI-EdTech has potential to free educators from repetitive tasks so they can have more meaningful interactions with students and each other. For students, it has potential to personalise the learning experience and enhance formative and self-regulated learning opportunities. However, human educators bring an important personal dimension to the education process that cannot be fully replicated by AI or captured solely by an algorithm. AAI-EdTech should therefore be a tool or an assistant to students and educators, but should not replace human decision-making. AAI-EdTech systems should be designed with safeguards that allow human input, interventions and challenges to outcomes at appropriate points.

Examples

Students

1. AAI-EdTech systems that allow self-pacing / self-regulated preparation for live classes (examples?)
2. AAI-EdTech tools (eg, AcaWriter, dashboards) that help students improve their own work
3. Formative not summative use of these tools
4. Student right to opt-out (Q: technical feasibility?)
5. Ensuring that the students maintain the majority of responsibility over their own learning (instead of leaving it all up to AAI-EdTech)
6. Students may have a learning disability that a human educator can customise learning for.
7. A student can be rest assured that the information collected by an AAI-EdTech tool will have a human that understands the unique challenges the student faces. For example, students may have a learning disability that a human educator can customise learning for.
8. Maintaining the choice to be able to opt for a face-to-face or direct to tutor option over choosing AAI-EdTech feedback or assistance.
9. Students not boxed in by a one-size fits all AAI-EdTech system that doesn't take into account the diverse needs of individual students

Educators

10. Educators are the drivers of procurement (or design) of new AAI-EdTech systems so that these systems enhance their existing teaching practices and serve as valuable tools
11. AAI-EdTech can help to assure consistency in decision-making
12. AAI-EdTech frees humans from repetitive aspects of work so that they can have more meaningful interactions with each other
13. Academic affordances such as OnTask
14. Maintaining the right to employ and engage educators over transitioning to fully automated systems.

15. Frees up educators to provide more human interaction with students by using AAI-EdTech to facilitate or automate existing processes.
16. Educators bring a personal dimension to the education process that cannot be fully replicated by AAI-EdTech or captured solely by an algorithm. In the educational context, this means AAI-EdTech should be a tool or an assistant to enhance learning, teaching and associated processes. It should not be a replacement for guidance and evaluation by a human educator.
17. New AAI-EdTech systems should only be procured if they are going to improve current operations - i.e. if a new system is just going to ineffectively replicate what staff are already doing, more time and resources will just be wasted on these tools

University

18. The guarantee that AAI-EdTech outputs will be continually monitored and verified by humans and will be immediately flagged and investigated if any outcomes are problematic [links to accountability/transparency principle].

Other examples

19. (GENERAL FOR ALL CATEGORIES) Safeguard important decision making as a human role, not an AI one

6.7 Justifications/Evidence

Principle: AAI-EdTech should aim to use evidence-based practices that contribute to meeting the primary goal of improving learning.

Rationale: The use of AAI-EdTech should be evidence-based and linked to quality learning experiences for all participants. A high level of (ongoing?) scrutiny should be applied to justifications for using these technologies. This includes relying on expert opinions, academic literature, and studies that evidence the efficacy and best-practice use of these technologies. Justifications should be explicit about *how* the AAI-EdTech supports student learning. Justifications should also address potential limitations surfaced by the evidence and consider whether the evidence applies in the same way when the technology is used in different populations. Experimental uses of AAI-EdTech should be conducted in a manner that helps to build up the body of evidence around the relevant tools and technologies. All stakeholders must also be informed where a use is experimental or where evidence is being collected. Although AAI-EdTech techniques may be used to detect and reduce cheating or other misconduct, its use must primarily be justified for its value added to learning, teaching, and their associated processes

Examples

Students

1. Students can understand and feel comfortable in having AAI-EdTech used, and they can feel that they are receiving greater value from the university for their education.
2. Students can see a summary of how an AAI-EdTech tool has helped students in the past to improve x, y, z outcomes (academics or career)

Educators

3. Educators can be confident that the AAI-EdTech system they are using has merit that is based on evidence and research
4. Educators can see which AAI-EdTech system is most suitable for the type of subject and their preferred teaching style
5. Educators can see how other educators used a particular AAI-EdTech system and learn from their success (or failure)

University

6. Can show/conduct studies (either done at the university or externally) of effective uses of AAI-EdTech systems/tools to justify their use at the university.
7. UTS committing to conduct studies and gather evidence of the efficacy of each AAI-EdTech system that hasn't been adequately researched *before* implementing that system across the entire university
8. Training tools can be modified to show the effectiveness of a specific AAI-EdTech tool in various domains and how they can be fit into a curriculum
9. Can assess the level of success of the tools being used at UTS to decide if they should be continued. (i.e. not using a tool 'just because we have it', instead only using tools which are proven to be beneficial to the learning/teaching experience)

6.8 Consent

Principle: All consent should be based on transparency and each individual should be able to make an informed and voluntary decision about the level of consent they decide with each system, and in an ongoing way.

Rationale:

- While acknowledging that informed consent is often riven with difficulties in practice, informed consent should be the goal with the possibility to opt out and withdraw consent in an ongoing way [links with the equity principle]
- The consequences of not providing consent must be clear [links with transparency principle]
- Consent intersects strongly with the other principles, and where there
- While the phrase “Consent or non-consent should not disadvantage students” is admirable, in practice it is unlikely to be possible. Rather, students should be fully aware of how non-consent might disadvantage their learning, without being framed in coercive ways. This relies on all AI-Edutech programs being put forward for people to consent to, being strongly guided by the other principles to ensure equity, justice and other dimensions.
- Consent should be ongoing, so people can opt out or change consent at different points
- By level, this refers to personalisation of consent on each AI system, where people have the ability to choose certain aspects which they want to Opt into rather than having to take on (opt in) the whole package. E.g. like when you go into a website and the tracking for cookies where you can go to preferences accept different levels, such as accepting baseline necessary cookies rather than all cookies. (While there might not currently be many ed-tech tools for which Consent could be anything other than Y/N, in the future, it is certainly possible that you could check ‘preferences’ for the services you want to use).
- Opt in rather than opt out- (default opt-out, so that everyone can opt-in in an informed and voluntary way)

Examples

Students

1. Students get to choose which elements they can Opt in on, in an ongoing way.
2. Students have access to information on the consequences of opting out

Educators

3. Training educators so they know what they are asking others to opt into, to enhance informed consent in multiple ways
4. Prior to the use of a platform, educators provide clear information about what opting-in involves

University

5. The consequences of not giving consent are transparently articulated in multiple ways including how they might impact learning - which also links with the access principle
6. Providing clear outlines about alternatives for students who do not opt-in, and how this might affect their learning

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