ANU College of
Engineering & Computer Science

REIMAGINE

Education Codesign Workshops Report

Internal report for CECS Staff
Prepared by Reimagine Research Team

Australian National University

REIMAGINE

CONTENTS

Background and context

As part of our commitment to CoDesign in the process of Reimagining the ANU College of Engineering and Computer Science (CECS), we conducted two (half-day) workshops in July and August 2019 with 40 CECS academic and professional staff to begin cross-College conversations about our education priorities in the coming years. The workshops brought together diverse views and experiences to explore both what is currently happening, as well as desires of what may happen in future in relation to the design challenge – “What approaches to teaching and learning will we use in the reimagined College of Engineering and Computer Science?”

Workshop objectives

The aim of the Reimagine Education CoDesign workshops was to articulate the values and approaches to education for the future of CECS, to raise awareness of educational priorities within the Reimagine investment, and to begin to identify the structural and functional supports needed to enact these priorities. Specifically, the goal was to develop a set of common design challenges and then identify which are the highest priorities that the College can now work on. Some of these design challenges may already be in process, some may need more data and design work to address them and some may not be being addressed at all yet. These workshops provided an opportunity to uncover, discuss and prioritise these design challenges from the staff perspective.

Participants

The Reimagine Education CoDesign workshops were open to all interested CECS staff and saw the participation of 40 diverse staff over the two workshops (26 men, 21 women; 34 academic, 13 professional).

Workshop activities

The workshops were framed around the overall design challenge: What approaches to teaching and learning will we use in the reimagined College of Engineering and Computer Science?

In small groups, participants worked through the following facilitated activities:

Activity 1 - 20 questions

Participants asked rapid questions around their group related to the overall design challenge to get them thinking about the varied elements of the topic. This produced a list of at least 20 questions per group that appear in this report as “Questions to consider”.

Activity 2 - Empathy mapping (say/think/feel/do)

Participants were first asked to imagine that we are in 2033 and we have Reimagined CECS. They were asked what people will be saying, thinking, feeling, and doing with regards to education at CECS in 2033 and wrote down their collective ideas.

They were next asked what people are currently saying (2019), thinking, feeling, and doing about education in CECS.

This data appears in this report under the “Current situation” and “Desired future” headings.

Activity 3 - Gaps and opportunities

Looking at their future empathy map and current empathy map, groups were asked to identify the gaps/opportunities to change. They were asked to frame these as design challenges in the classic Design Thinking approach of saying “How might we...” These questions are found at the beginning of each theme and represent areas to explore further in future.

Activity 4 - Identifying our passions

Participants were asked to place three dots next to the “How might we...” statements that they felt particularly passionate about. We have expressed these dots as “# votes” next to each “How might we…” question at the beginning of each theme.

Explanation of report findings and terminology

This report is a synthesis of the common themes that were expressed by workshop participants and grouped together under high-level themes expressed as “How will we…”. These high-level themes differ from the “How might we…” questions posed by participants as they are agendas we now know we need to address. Quotes in this report are drawn from notes written down by workshop participants and scribes.

What we heard

Theme 1:

How will we value and reward educators, education supporters and learners?

Design challenge questions from the workshop

- How might we reward and value educators as much as researchers? **(8 votes)**
- How might we reward and value everyone as much as researchers (educators and professional staff and students) **(10 votes)**
- How might we recognise teaching and learning at least as much as research output? **(5 votes)**
- How might we balance and value research and education?
- How might we obtain an appropriate balance between professional and academia to provide education (optimise)?
- How might we clarify the role of the college in education?
- How might we raise profile and status of teaching (function endeavour)? **(5 votes)**
- How might we empower passionate educators (who are already here) to help lead the change? **(7 votes)**

Valuing researchers, educators and professional staff (and their work) equally

Current situation

CECS staff expressed their concern that education is currently not valued equally with research. This includes:

> Valuing educators and professional staff equally with researchers
  - Educators feel undervalued and at times disrespected

> Recognising teaching and learning as much as research output
  - Research is currently more rewarded than education

> Balancing professional and academic staff to provide education

> Providing incentives, rewards and recognising contributions to education
  - Students think some academics care much more about research than teaching

> Resourcing for teaching and learning activities
  - More time and support needed to balance teaching with academic load

"*CECS says education matters but mostly rewards research*"

"Teaching takes more time than anyone formally acknowledges (particularly for the first time)"

"*'Minimally sufficient' approach to teaching – just no time, space, resources for more than that"*

"Students think some academics care much more about research than teaching"

Desired future

CECS staff envision a future where:

- Education is valued equally to research output
- Educators have sufficient time and resources to both teach and research
- The College and University actively support educators
- Students are inspired by the teaching they receive
- Educators are rewarded for their contributions
- All staff are constantly updating their skills to provide innovative education to students

"Embrace education as of value in itself, not just a means to an end"

"Staff: I look forward to teaching. It isn't a drag on my time."

"How might we reward and value everyone as much as researchers (educators and professional staff and students)?"

"Difficulties of high teaching load is understood by those who matter in school"

"I feel like innovative and hands on teaching is adequately supported (resourced, prioritised in terms of space and time, staffed [teaching, tech, engineering])"

Supporting leadership among existing educators

Current situation

Staff question if passionate and engaged educators are truly empowered within CECS and express the sense that there is limited support and resources to provide the learning experiences they would like to.

Desired future

Staff want to see teaching “by people who want to teach”, recognising that great researchers are not always great teachers.

Performance evaluation and recognition

Current situation

CECS staff identified that there are limited career development opportunities, especially for those who have a higher teaching load, as teaching can hamper their promotional prospects. Other issues raised included:

- Promoting people to education roles who “don’t have experience/don’t value progressive education/don’t support education”
- Promotion based more on research than teaching outputs
- Accrediting academic staff for teaching
- Some tutors are committed to long-term employment teaching others which could limit their opportunities for promotion
- The teaching timeframe, for example, “lifelong, or two years with break and then back and forth”

“Insisting that the good teachers teach more courses even though it completely hampers their promotional prospects”

“Teaching is irrelevant to your future in [engineering]”

Desired future

Questions were raised about the profession of the university educator in 2033 and what skills, knowledge and competency would be valued then, including the need to have a PhD.

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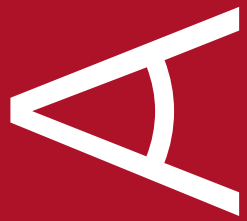


Theme 2:

How will we create and deliver educational experiences that enable lifelong learning?

Design challenge questions from the workshop

- How might we create educational experiences that are rewarding, purposeful, meaningful, fun, and create desire for lifelong learning **(12 votes)**
- How might we design learning experiences to support real life student situations (e.g. work by study)? **(2 votes)**
- How might we design courses so that we support / train students to find meaning throughout their lives? **(1 vote)**
- How might we create a context for students where they know that 'anything is possible' and be supported (means and ability) to do so? **(1 vote)**
- How might we get students to take ownership of their training (be participants rather than recipients)? **(1 vote)**
- How might we improve student learning experiences and grad outcomes using modern approaches to teaching and learning? **(1 vote)**
- How might we transform/design services to actually deliver research and education?
- How might we use student-focused learnings – grade outcomes using modern approaches?
- How might we transition to a human-centred education model rather than focusing on specific, easily measured, localised outcomes?
- How might we keep our information current? Program/courses/projects?
- How might we increase student engagement? **(1 vote)**
- How might we attract and support motivated learners?
- How might we get the students to attend the lectures?
- How might we empower our students to make change?
- How might we appropriately use gamifying mechanics in learning? **(2 votes)**
- How might we support incubation of ideas (education, innovation etc)?
- How might we apply engineering techniques to the design of education?
- How might we decouple education processes from degree/course admin?
- How might we revolutionise and lead how to conduct education?
- How might we create a culture of experimentation and innovation for all?
- What can Reimagine do to prioritise and give space to innovate experimental teaching and learning approaches?
- How might we teach students soft skills and a better understanding of the working world?
- How might we work with industry to identify future expectations of graduates?

Education design and outcomes

Current situation

CECS staff raised questions about how we currently teach, who makes decisions about what is taught and what the values of teaching are that we follow. The question of developing a consistent teaching and learning approach in CECS was also highlighted. Other questions and issues were raised about:

- The overall desired outcomes of education for students (and how that influences what they should be taught)
- How to balance structure and scope in providing guidance to students
- The connection with the national secondary curriculum
- Defining if we talking about pedagogy and/or education delivery modes
- The concept and relevance of degrees in education in the future
- Approaches to innovation in teaching
- How to support students to learn
- Who should do the teaching
- Knowing what skills are important for students now and in future and what they want
- How to give students the kind of personal experience they want (while managing the need to grow numbers)
- The possibility of generating research through the student experience (student-led or collaborative with staff)
- Poor connection between core engineering and disciplines

Other observations about the current situation included:

- Industry feels that students lack soft skills that would be useful for real life jobs
- Shallow/traditional styles of teaching and learning (lectures, exams)
- Engineering students are technical but there is a need for some soft skills
- Internships for students are supported to build professional skills

"*[What is the] balance between creating lifelong learning capacity and teaching content?"*

"*Are we creating employees? Entrepreneurs? Or just people?"*

Desired future

Staff want to see teaching and learning that:

- Is highly desirable
- Is research-led
- Is balanced between traditional and innovative teaching and learning approaches. For example, “Come to campus to work together on projects to get feedback as you go”
- Is done as a team
- Is balanced between practice and theory
- Provides appropriate skills to students to succeed in their careers

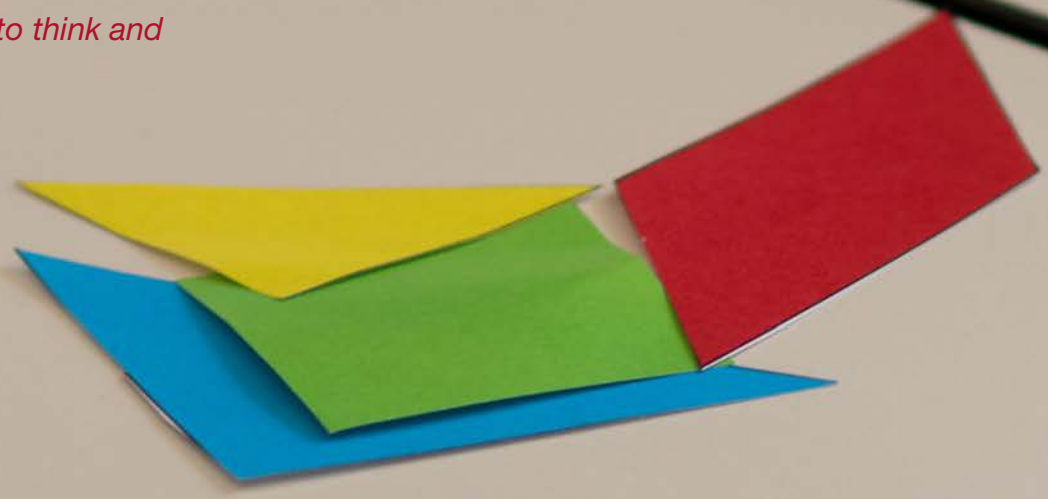
They also want to see:

- A teaching/education culture that prioritises growth and learning
- Low student-staff ratios with big cohorts of students organised into small groups/workshops
- All students doing a foundational first year
- A small common core offering to simplify and provide a single source of authority
- Senior students taking an active role in supporting early year students who are in turn supported by quality educators
- Clear connections between industry and educators, including greater support for internships and industry learning
- Students and staff who have clear knowledge of what the career path of each discipline is
- More focus on teaching fewer things well
- Staff and students workloads that provide challenge but are manageable (especially with teachers coping with scale)
- Students who are optimistic, big global problem solvers, “intellectually flexible and able to cope with new ideas after graduation”, learning everywhere (workplace, home, industry, university)
- Educators who model the qualities we want to see in our students
- Industry partners who are confident that CECS students are prepared for the workforce and who want to employ them
- Reflection on the ANU’s role as a regional/local university and how to bring that into our teaching and learning environments.

Desired future

"Learning is an opportunity to think and grow"

"It would be easier to decouple core and streams"



"[in the future] Teachers know the names of all the students they teach"

"I feel the approaches to teaching truly empower all my students regardless of background to contribute to computer science and engineering in the future"

"[In future] Students say they feel 'included and empowered'"

Critical questions to explore

- Will universities focus on professional micro education rather than degrees?
- What does specialisation in engineering mean?
- What are we going to do to the programs that don't attract students?
- How do we create people focused collaborative learning environments?
- What approaches inspire/motivate learners/educators?
- Will employers still value university education?
- Who will determine the curriculum in future?
- Should we influence the national secondary curriculum?
- How will we provide a template/scaffolding without too closely prescribing approaches? (given diversity of content)
- How many students per class?
- How do we balance technical and soft skills?
- What is the balance in student numbers in undergraduate and postgraduate?
- How do we balance the effort spent on undergraduate and postgraduate?
- What will engineering and computer science education of 2033 need to include? (skills, concepts, theories)
- What skills are important for graduates now and in the future?

Innovative approaches to education

Desired future

Staff outlined some elements of what innovative approaches to education may look like in future, including:

- Intelligent, personalised, experiential and immersive learning
- Vibrant debates and discussions
- Virtual education and virtual reality (teachers & students)
- “Learning ways to think, enquire and learn, not just repeating rules and facts”
- Teaching staff coming from everywhere, not only PhD holders
- Stronger value placed on students and staff training with industry as part of their education
- Students and teachers learning from each other and collaborating together
- Balance between traditional and innovative teaching/learning
- Teaching as a team
- Individualised and flexible structures for learning

Other ideas for innovative approaches were:

- Supporting and funding a student-led innovation society
- Starting an ‘active learning company’ as a final year project

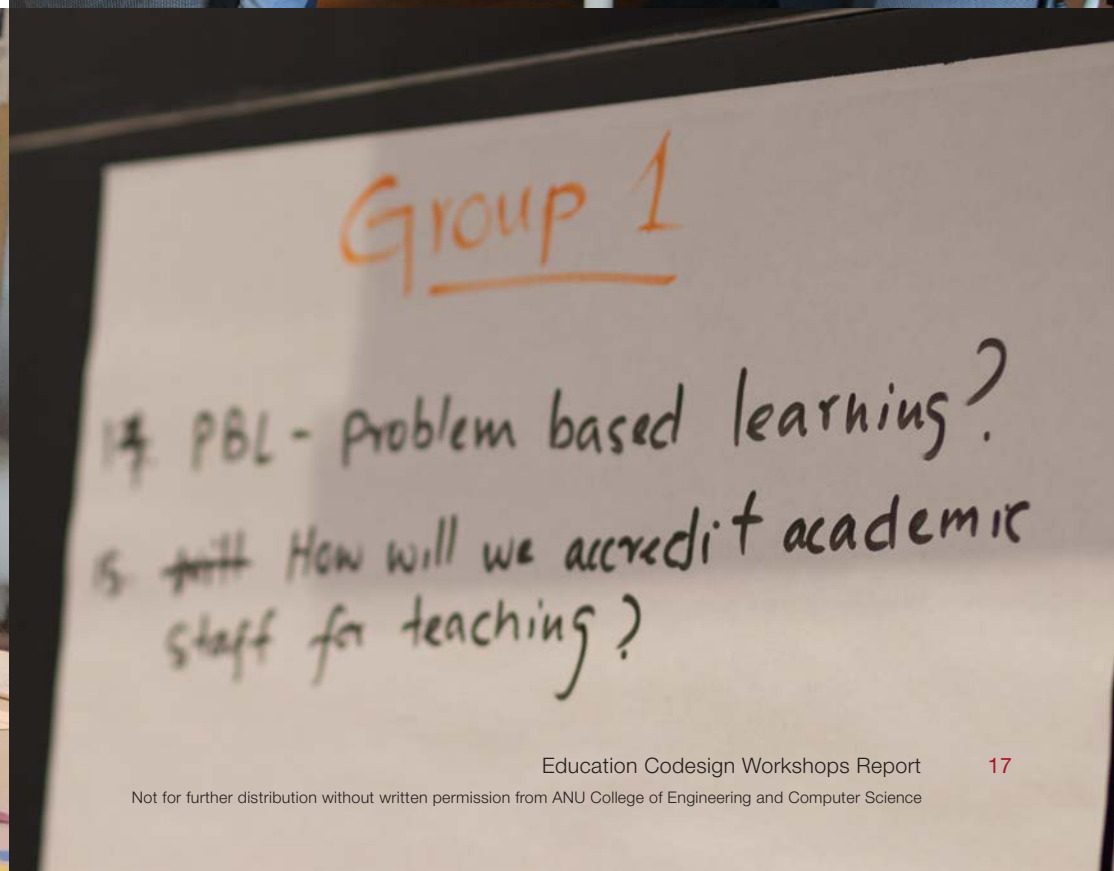
Critical questions to explore

Staff also identified some critical questions to explore in this area, including:

- What can Reimagine do to prioritise and give space to innovate experimental teaching and learning approaches?
- What is our approach to innovation in teaching?
- How far do we take the personalisation of learning to cater to diversity in learning etc while maintaining standards?

"I will be helping students make systems that have the potential for real world (beneficial) impact"

"Come to campus to work together on projects to get feedback as you go"



Student engagement

Current situation

CECS staff in the workshops identified their varying perceptions of current student experience, including that students:

- Are mostly happy and satisfied, with a significant minority being very unhappy
- Are not engaged and taking responsibility, using online learning instead of attending lectures
- Sometimes value an ANU engineering education and sometimes don't see the value of the Systems engineering approach
- Are 'just getting through' their subjects as a way of obtaining their degree
- Indicate they don't want to work with international students
- Feel unheard and undervalued while simultaneously seeking help from academic and professional staff
- Think some academics care more about research than teaching
- Feel they can't make mistakes
- Are ready to be agents of change

Desired future

Staff then envisaged what they think students will think, feel and do in future, including:

- Feeling empowered and like they are doing something meaningful, going "beyond the everyday"
- Taking personal responsibility to "fix the broken world" and wanting to have opportunities to solve real world problems with assistance from academics
- Seeing university as a means of putting (online) learning into practice
- Questioning the purpose of their education and thinking that marks aren't everything
- Using their university education as a solid foundation but knowing they can work where they like with transferrable skills
- Practicing lifelong learning
- Feeling supported in their learning journey and having positive interactions with engaged and supportive staff
- Being engaged in learning

Staff also identified that improving students and staff members connection to ANU, as a place to learn and connect, will provide continuous engagement. Ongoing learning for graduates to ensure that learning fits into people's lives would be markers of a positive future.

"Interacting with the students is exciting and invigorating"

- Teachers

"My education has given me many skills to succeed in my chosen career"

- Students

Critical questions to explore

Staff also identified some critical questions to explore in this area, including:

> Are we making our students world ready?

> Will student expectations change?

> What will our students need and want?

> What is the end result from students' perspective?

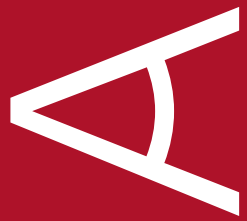
> How much empowerment can students be given to shape their education and make an impact beyond course boundaries?

> How do we support the students to learn?

> How do we provide guidance to students? How do we balance structure and scope?

> How do we improve student attendance?

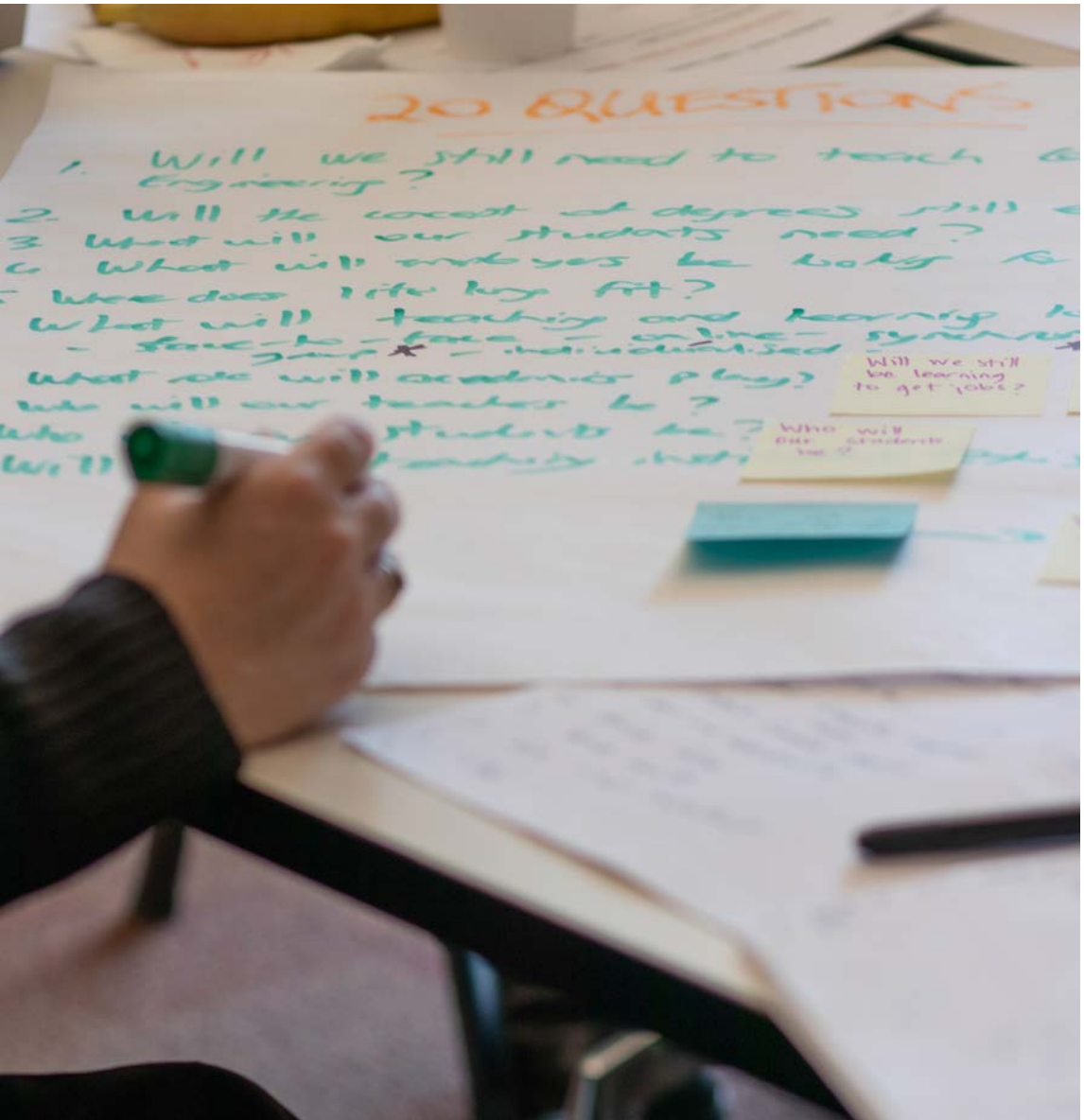
> How do we inspire?



Theme 3:

How will we assess and ensure quality in our approaches to education?

Design challenge questions from the workshop



- How might we assess the quality of a course? **(1 vote)**
- How do we measure success (calibration, who will monitor)?
- What do we already know about good teaching that we haven't implemented?
- How do we improve the quality of the product offered?
- How might we manage quantity and quality during the transition?
- How might we address course convener training and induction?
- How might we make time for improvement activities (educators)?

Quality and assessment

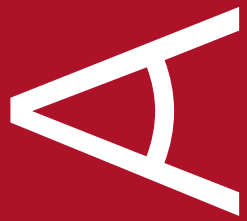
Current situation

Staff observed that currently students note inconsistencies in the quality of courses and question academics' levels of preparation.

Critical questions to explore

They also posed a variety of questions about assessment and success measures, including:

- Will assessment matter? Will there be other metrics?
- How do we measure – what metrics?
- How much of the assessment workflow gets automated?
- Is it possible to split the learning and accreditation? (achievement assessment) (How do we achieve the spirit of education we want without tying everything to the piece of paper?)



Theme 4:

How will we enable and activate collaboration?

Design challenge questions from the workshop

- How might we start working as a team? **(5 votes)**
- How might we build teaching groups and communities? **(4 votes)**
- How might we break down barriers? **(1 vote)**
- Trying to break silos between disciplines: how might we develop a community where cross-discipline learning works
- How might we create socio-technical thinkers/work with CASS (other parts of ANU)? Where will we fit within broader ANU?
- How might we maximise on efforts that are being done in isolation so people feel their work is worthwhile? **(1 vote)**
- How might we bring industry closer/foster relationships **(3 votes)**
- How might we build strong and mutually beneficial connections and collaborations and ongoing relations with external stakeholders? **(3 votes)**
- How might we foster and strengthen industry partnerships?
- How might we break barriers and change culture to include more industry experience to provide education?
- How might we get industry and government more involved?
- How might we get more engaged with society?
- How might we break down the existing barriers?
- How might we engage with secondary educators to prepare students for Uni?
- How might we plan and engage people in the long term around education **(1 vote)**
- How might we retain and build a sense of connection as we grow? (alumni, staff, students, external stakeholders) **(2 votes)**

Internal collaboration

Desired future

CECS staff highlighted a number of areas they would like to see in future for effective collaboration within CECS and the ANU. These include:

- A working culture that accepts and encourages critique
- Teaching staff working together to continually improve
- Team teaching
- Learning how to work well in teams
- Diminishing divisions between formal positions and roles
- Feeling more connected and part of a university community
- Cross-discipline learning is the norm

"[In future], I [as a teacher] can focus on doing what I do well at work in collaboration with others who do the other things well"

"Full-time work is one long group assignment. Get used to it."

Critical questions to explore

Staff posed some critical questions about collaboration, including:

- How do we combine different colleges in the learning process (not just CECS)?
- How do we integrate across disciplines? Will disciplines still exist?
- How do we relate to the rest of the ANU's vision?
- What collaborations can we have in teaching and learning?
- How will we share our teaching and learning approaches?

External collaboration with industry and other stakeholders

Current situation

CECS staff expressed that at the moment:

- There are missed opportunities for collaboration and links with industry and other stakeholders
- Engagement with others outside of CECS is challenging
- Industry doesn't always know who to approach in CECS and/or think that the ANU does not want to engage with industry partners
- Industry feels that students are good on content but lack soft skills that would be useful for real life jobs
- Some students participate in internships to build their professional skills

Desired future

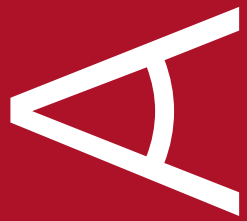
Staff members also shared a strong desire to be more connected with others in future, particularly industry, citing examples such as:

- Industry thinking that CECS graduates are "awesome" and the "best in the world"
- CECS having strong industry partnerships and relationships and industry being more proactive in engaging with the university
- Students engaging with industry throughout their studies
- Industry teaching components of courses and integrating industry throughout
- Industry wanting to be more involved in shaping the CECS education/learning program

Critical questions to explore

Staff posed some critical questions about collaboration, including:

- What will be the role of industry, government, and the professionals?
- How can we engage with industry to provide future employment? Have we balanced employers' needs today with what we think they need in the future?
- How much engagement will we have with industry in teaching?



Theme 5:

How will we ensure our communications are effective and enabling of participation and collaboration?

Design challenge questions from the workshop

- How might we improve communication and transparency within CECS? **(4 votes)**
- How might we ensure that everyone is listening to each other and feeling heard in a timely manner?
- How might we ensure that everybody knows about what plans are already in place? **(1 vote)**
- How might we clarify the role of the college in education?

Communication

Current situation

Staff in the workshop shared that currently:

- There are many channels and platforms for communication between staff, and between staff and students
- There is some inconsistent information being shared
- There is some confusion in regards to expectations and responsibilities regarding education, including between the College and the Schools, and between staff with different roles in education.

Someone also felt that Reimagine is currently used as an excuse for a lack of information and transparency.

Desired future

CECS staff expressed their desire for internal communication to include a shared code of conduct for how to communicate between CECS, teaching staff, and students. They also shared that communication to students should include instantaneous feedback and support.

Staff would like to see external communications that share messages such as:

- General public: That's where my kids should aim to be!
- Ambitious and intelligent foreign high school students: You have to try to enrol at ANU
- We are role models/mentors
- ANU is the best
- This is a worthwhile, empowering experience. You should study here too.
- Diversity is our strength.
- ANU students are very well prepared to contribute to the workplace – they bring in new ideas and approaches effectively and empathetically

Theme 6:

How will we support our staff and students in their individual needs?

Design challenge questions from the workshop

- How can we build student and staff mentoring (more individual attention)? **(2 votes)**
- How might we identify student challenges and support?
- How might we sustain positive and supportive networks for students and staff? Not just a welcome touchpoint…
- How might we ensure that our students and staff have an emotional connection to the ANU?
- How might we cater to students who work?
- How might we develop better welcoming experiences/transitions into university life?
- How do we address culture of plagiarism?
- How might we support course/program conveners to deal with frequent exceptional student queries? **(2 votes)**
- How might we support our educators? **(1 vote)**
- How might we develop a sense of responsibility towards students?
- How might we evolve to an intelligent digital environment while maintaining a personal connection?

Student support

Current situation

CECS staff shared their perspectives on the current situation for student support, including:

- Some students are overwhelmed, unsupported and excluded
- Students are supported by staff (Student Services and some academics)
- Support systems are too complex
- Large numbers of students are engaging in plagiarism

Desired future

Staff expressed wishes for the future from students' perspectives such as students:

- Having a good support framework
- Feeling confident in their knowledge and ability to make change and enter a meaningful career
- Enjoying their experience
- Feeling comfortable asking for help
- Getting personalised support
- Are active participants in their education
- Receiving financial assistance (e.g. scholarships) so they can dedicate themselves to learning
- Feel like a valued part of the wider School and College community
- Having supportive friendships

Critical questions to explore

Questions posed about the future included:

- How do we support the students to learn?
- How do we give students a personal experience (while doubling numbers)?
- How will we consider the ratio of teachers to students?
- Should we be customer centric?

"I feel like I will be prepared to enter a meaningful career in my area of study"

- Students

"My instructors really care about making sure I am supported in my learning journey"

- Students

Staff support

Current situation

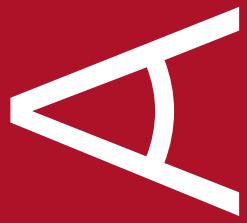
CECS staff generally expressed that they feel a lack of support. Specifically that there is a lack of support for education when balancing the academic load and that there is not enough support for hands-on teaching despite the fact that the staff in support roles in CECS are “amazing”. They also shared that there is a general need for better systems and processes to support education.

Desired future

Staff members would like to see a future where staff:

- Are enjoying their experience
- Are adequately equipped to do what we need to do
- Have a good support framework
- Are able to plan for how many students they will be teaching and when
- Feel respected

“I feel valued and like that I am having a positive impact on my students’ education”



Theme 7:

How will we create and sustain enabling environments for inclusion and equity across diversity at scale?

Design challenge questions from the workshop

- How might we design educational/research to deliver equal value? (Promotional incentives, cultural, gender bias) **(10 votes)**
- How might we create a representational, diverse, safe, and supportive environment for all? **(4 votes)**
- How might we reach our diversity and inclusion goals **(4 votes)**
- How can we engage with the future students to meet diversity targets?
- How might we recruit staff and students to meet our diversity and quality targets?
- How might we bring inclusivity closer to the core of CECS?
- How might we cater to and support students from different discipline backgrounds?
- How might we increase diversity (staff and students)?
- How might we create a culture of inclusivity?
- How might we achieve gender parity?

Equal opportunities and values for all

Current situation

Staff expressed that there are issues regarding diversity, including the student body lacking the necessary gender diversity and some staff wondering why they should care about diversity and inclusion. They also highlighted the challenge of dealing with diverse student abilities and experience.

Desired future

The desired future shared for this area included:

- A diverse student community
- Lots of positive female role models students and staff can talk to
- Staff and students feeling welcome, part of a group and belonging to ANU
- The College thinking about how to keep women engineers engaged
- Everyone treats others with respect and care as unique individuals
- Access to education being open to all
- Gender equity will increase probability of success

Critical questions to explore

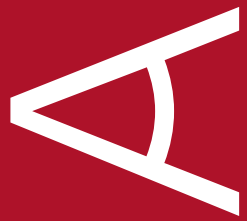
Staff also posed the following questions to explore further:

- Are there ideal types of cohort diversity to be developed? For what outcomes?
- How do we achieve diversity targets?

"I feel safe and comfortable. There are people around me who look like me. A great place to work and learn."

- Staff and students

"This is an inclusive place that will help me flourish."



Theme 8:

How will we create and sustain enabling organisational processes and systems?

Design challenge questions from the workshop

- How might we modernise our administrative processes and systems? (support academics, students, finances, industry partnerships) **(7 votes)**
- How might we decentralise? Academic and professional staff work on the same team; feel ownership; sharing goals; sharing success. **(2 votes)**
- How might we decentralise LMS processes to a college level? **(2 votes)**
- How might we decentralise student admin/enrolment? **(2 votes)**
- How might we have structures (org, gov & finance) that deliver/ support effective education? (e.g. VC of courses) **(1 vote)**
- How might we have adequate resourcing (e.g. programs, admin, academics, finances etc)? **(1 vote)**
- How might we micro-manage less and empower others to lead? **(1 vote)**
- How might we eliminate the customer service approach and replace it with something that values everyone at ANU? **(1 vote)**
- How might we build productive professional relationships across ANU?
- How might we reduce administrative workloads of teachers?
- How do we give PSG more time to value add?

Administrative processes and systems

Current situation

CECS staff identified various issues they currently see in this area such as inconsistent processes and fighting against the system to do a good job. Issues such as the web pages being outdated were also raised.

Desired future

Staff expressed the need for better information management processes/tools (i.e. do more efficient work) and designing systems around their challenges (such as auto mechanisms). Administrative staff shared that AI could help them solve many student procedural inquiries, freeing more time for personalised service. Academic staff questioned how they could delegate time consuming teaching/ administrative tasks to tutors.

Theme 9:

How will we create enabling physical environments and infrastructure?

Design challenge questions from the workshop

- How might we design future capable designing and making oriented learning spaces (right sized, adaptable) **(5 votes)**
- How might we design and build spaces for designing and building and to learn together? **(1 vote)**
- How might we build facilities that function for staff & students?
- How might we rework our current facilities to work now/while we wait for new facilities?
- How might we build adaptable and flexible spaces to be resilient to changing methods?
- How might we collaborate with architects to develop inspirational physical spaces?
- How might we modernise/upscale IT infrastructure and IT lab spaces? **(1 vote)**
- How might we improve technology/facilities for better teaching/ learning experience?
- How might we provide after-hours IT support for students and academics?

Spaces and technology

Current situation

CECS staff expressed their perspectives on the current infrastructure within the College, including:

- A lack of facilities and student spaces
- Physical spaces limiting the immediate potential
- Infrastructure and teaching spaces are old, dingy and uninspiring
- IT infrastructure not adequate

Desired future

Staff shared their visions for the future, such as:

- Future capable learning spaces, including boutique learning centre, great labs, teaching spaces and student project spaces
- Spaces that are resilient to changing methods, such as world-class, sophisticated infrastructure on and off campus and personalised learning environments
- Having facilities and venues to work with students in an effective way that suits their purposes

Critical questions to explore

They also posed many questions to consider for the future, including:

- What teaching/infrastructure/spaces are needed to support future teaching and learning?
- What is the role of classrooms?
- Where do the residences fit? – living learning environments
- Will there be a personalised, intelligent learning environment?
- Are there even classes?
- How will it be resourced?
- Will education be physically based in Canberra? Virtual?
- Does physical presence mean anything in 2033?
- What teaching/infrastructure/spaces are needed to support future teaching and learning?
- What technology will facilitate future learning?
- Should we be building teaching and learning technology?
- Do we have the technology to support teaching and learning in 2033?
- How will technology be used?

Theme 10:

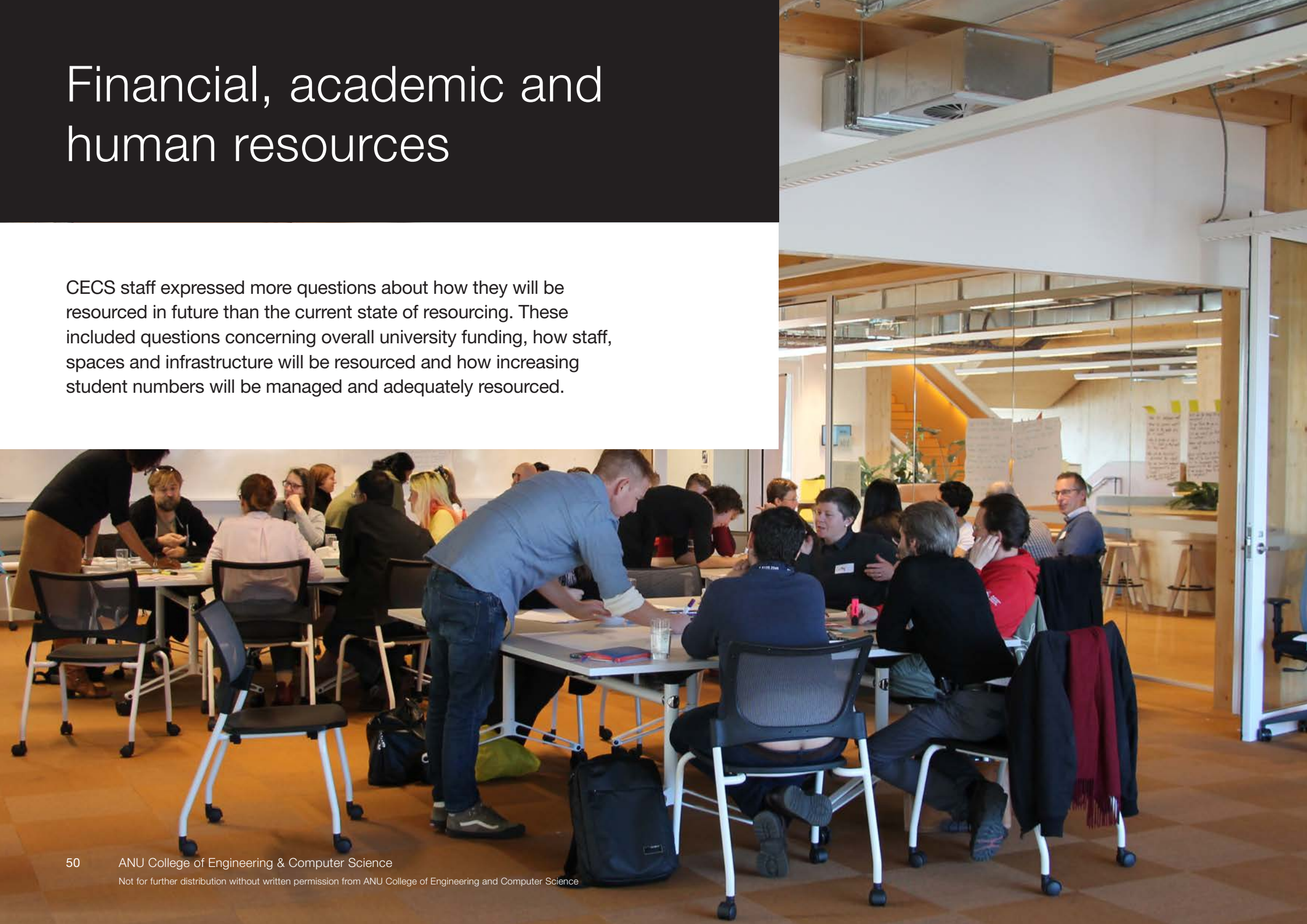
How will we resource our approaches to education?

Design challenge questions from the workshop

- How might we influence ANU central change agenda and resourcing decisions? **(1 vote)**
- How might we ensure the long-term financial viability of education?
- How might we allocate appropriate funding for infrastructure behind the programs?
- How might we resource our education programs sufficiently (staff, money, infrastructure)?
- How might we reduce the reliance on colleges being self-funding?
- How might we optimise the use of academic resources across the college? (common modules/co-teaching)
- How might we improve student/staff ratios?
- How might we have certainty in student numbers?

Financial, academic and human resources

CECS staff expressed more questions about how they will be resourced in future than the current state of resourcing. These included questions concerning overall university funding, how staff, spaces and infrastructure will be resourced and how increasing student numbers will be managed and adequately resourced.



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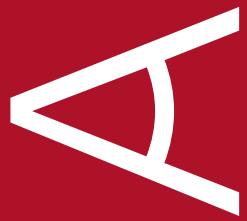
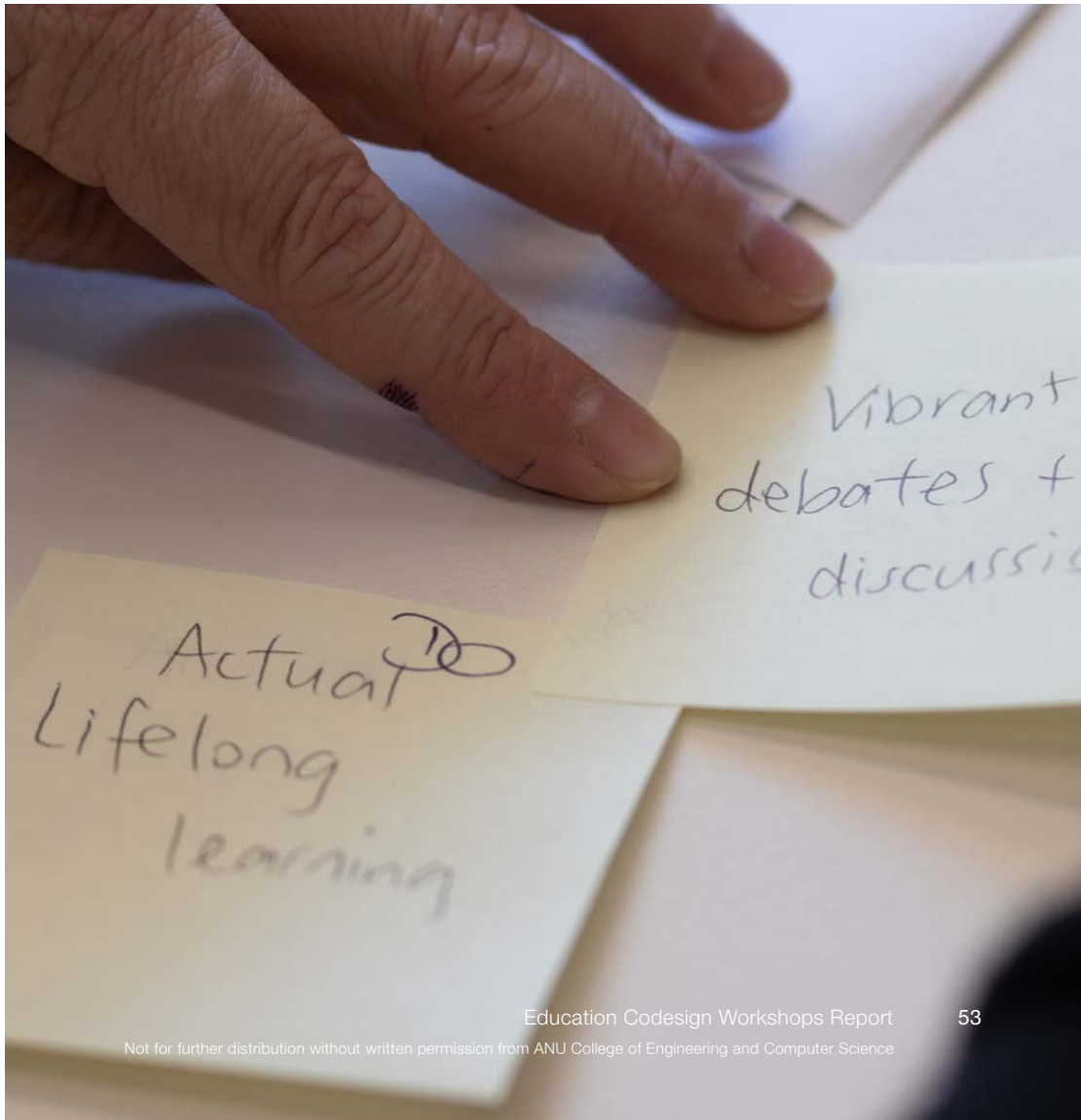


Theme 11:

How will we actively prepare ourselves and others for unknown futures?

Design challenge questions from the workshop

- How might we prepare our students for the future jobs that are yet to be defined? **(3 votes)**
- How might we prepare our students for the future?
- How might we get students and staff more excited and enthusiastic about the future?
- How can we be more outward looking/broader focused?
- How might we prepare our students for professional careers?



Future preparation and visioning

Current situation

CECS staff expressed that there is a sense of optimism for the future in the College, while students currently feel unprepared for the future.

Desired future

Staff imagine and hope that in the future students and staff are prepared to keep adapting to a changing world and that the government will acknowledge the importance of CECS' graduates to the nation. They also expressed a desire to see students and staff:

- Thinking about important societal problems
- Volunteering (their expertise etc) outside
- Excited and optimistic about the future
- Focusing on a great society not just getting a job and a salary
- Saying CECS and ANU is high quality, a great place to work and study

Critical questions to explore

Staff also have a variety of questions about what we should be looking at to prepare ourselves for the future:

- Will STEM, STEMM, STEAM be the future?
- How do we fit globally?
- How do we interact with the problem solving (diversity, multi-dimension)?
- Is the cost of ANU/CECS education worth the ROI in salary/benefits?
- How can we still improve?
- Are we making our students world ready?
- What kind of engineers and computer scientists do we want to produce?
- How much empowerment can students be given to shape their education and make an impact beyond course boundaries?
- What will employers be looking for?
- What will our students need?
- How can we engage with industry to provide future employment?
- What will students be like in 2035?
- What will computer science be like in 2035?
- In what way will Australia embrace education in 2035?
- How will universities be governed in 2035?
- What is the environment in 2035 (financial, cultural etc)?
- What is the context in 30 years' time?
- Will there be universities?
- Does physical presence mean anything in 2033?
- How can technology solve global challenges?
- Are we looking at the right problems in the right way?

We heard, we listened, and we will do…

This report will form the basis of a larger report to be shared at the Culture Lab CoDesign event in November 2019 and provide a starting point for discussions and planning around the future of education at CECS.

The report may also generate discussions within all parts of CECS and contribute to the strategy at the School and College level.

Contact us

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