

Ollscoil Teicneolaíochta an Atlantaigh

Atlantic Technological University



↑→TU TORRTransforming
Learning



Supported by ATU N-TUTORR Project Office and the Teaching and Learning Centre



Executive Summary

In this special publication, we will share a collection of assessment briefs derived from a one-day assessment hackathon in Atlantic Technological University (ATU), where 100+ colleagues and student leaders undertook a challenge-based learning experience, to hack a big idea on tackling assessment in the age of Artificial Intelligence (AI).

Generative AI focuses on creating new and original content, chat responses, designs, or synthetic data. It is particularly valuable for problem-solving and promoting creativity. As the use of ChatGPT and Generative AI becomes increasingly popular, it is vital to understand its impact on higher education and identify strategies that may address potential risks (Wang, 2023).

This inspiring and innovative collection of assessment briefs is being released as we begin a new year in higher education, and it provides an opportunity for educators to re-imagine their assessment strategies and consider new teaching and learning approaches to support engagement with generative artificial intelligence technologies.

The ATU Assessment Hackathon was coordinated by the N-TUTORR Project Office and the Teaching & Learning Centre teams. From the beginning, the aim of this learning event was to provide a first-hand experience of a challenge-based learning hackathon for academic staff to support them in implementing a similar approach and to facilitate teams of educators on learning about designing authentic and sustainable assessments in the age of AI.

In this special publication, nineteen assessment briefs are the formal outputs from the ATU education hackathon teams. The assessment briefs are grouped under four categories:

Category 1: Education Principles

Category 2: Guiding Principles

Category 3: Assessment Method

Category 4: Lesson Plan

Under the category of **Education Principles**, the briefs explore developing a culture of academic integrity and ethical practices in students and staff, plus project-based learning on AI.

The **Guiding Principles** category, covers sound advice on when and how it is appropriate for students to use AI in assessments and embracing the opportunities that AI offers to support the development of students' foundational knowledge, understanding, skills, critical engagement, and self-expression.

On **Assessment Methods**, a guiding framework is presented that supports best practice in use of AI in relation to Blooms Taxonomy, and designing rubrics that students can use to critically evaluate the quality of AI-generated assessments.

The **Lesson Plan** category, presents approaches on how to investigate language models that can support and develop on assessment in response to the current and future working environment, acknowledging the challenges of plagiarism. Further briefs explore rethinking and rewriting programme or module learning outcomes in the age of AI and creating an assessment and feedback method, which develops sustainable critical thinking skills. A complete listing of the assessment briefs is available on page 30-31 and includes the full team names.

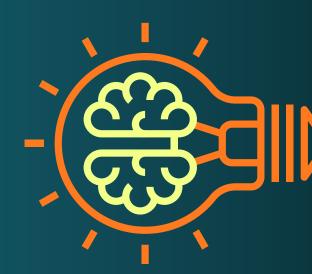
This publication also provides the tools and resources we used to drive the hackathon and the outputs delivered on the day. This publication and linked resources are licensed under Creative Commons CC BY-NC-SA 4.0 Deed | Attribution-NonCommercial-ShareAlike 4.0 International | Creative Commons. The ATU hackathon toolkit includes: a Hackathon CBL Game Card; a Learning Outcomes & Activities Game Card; A to Z Assessments deck of cards; a Padlet collaborative board; and a suite of nineteen assessment briefs presented in a series of information cards in Chapter 4.

On behalf of the N-TUTORR and Teaching and Learning Centre teams, we would like to take this opportunity to express our sincere thanks to all the participants of the ATU Assessment Hackathon who have created an exciting range of assessment briefs. In addition, many thanks to our external guests, Gilly, Sue, and Sheila, who provided expert facilitation in assessment design and delivery on the day.

Enjoy this creative book of big ideas!

Dr Carina Ginty

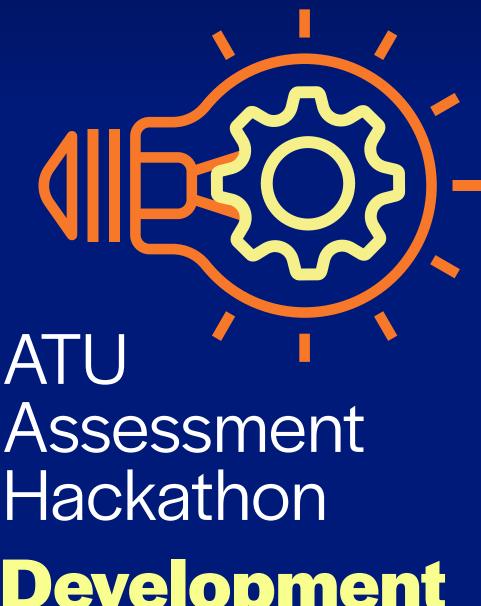
ATU Lead N-TUTORR Transforming Learning & TU Sector Co-lead for Stream 1 Student Empowerment



Wang, T. (2023). Navigating Generative AI (ChatGPT) in Higher Education: Opportunities and Challenges. In:

Anutariya, C., Liu, D., Kinshuk, Tlili, A., Yang, J., Chang, M. (eds) Smart Learning for A Sustainable Society. ICSLE 2023.

Lecture Notes in Educational Technology. Springer, Singapore. https://doi.org/10.1007/978-981-99-5961-7_28



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- A-Z Assessment Card Game, Let's Talk about Assessment: Emma McDonald
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LEGO® Serious Play Facilitator:

Ken McCarthy, SETU Lead N-TUTORR Transforming Learning

Hybrid AV/Technical Support:

Pat Heffernan

ATU Assessment Hackathon Teams:

- 100+ participants including ATU staff, external academics and ATU N-TUTORR student partners
- All team members are presented on the team's assessment brief derived from outputs on the day (see pages 30-50)

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ATU Assessment Hackathon

Introduction to the Assessment Hackathon

A hackathon is a problem-focused time-bound speed-design event, where individuals collaborate to develop a solution to the problem (Flus and Hurst, 2021). The ATU Assessment Hackathon event derived from consultations with State University of New York (SUNY), University College London, DCU Teaching Enhancement Unit, Prof. Gilly Salmon (Gilly Salmon, 2020) and Serious Lego Play experts (Association of master trainers in the Lego serious play method, 2019). The event was designed around resources developed by the ATU N-TUTORR team, the Teaching and Learning Centre and the Re-Imagining Assessment Project.

Central to the ATU Assessment Hackathon 2023 was a Challenge Based Learning Game Card highlighting the big idea and problems to resolve in a step-by-step process. On the day, the following Big Idea was hacked:

Create academically integral, authentic, and sustainable assessment for all in the age of Artificial Intelligence (AI)

Challenge Based Learning (CBL) is an efficient and effective framework for learning while identifying, understanding, and solving authentic challenges, taking informed action, and making a difference (The Challenge Institute, 2018).

ATU Assessment Hackathon Objectives:

- Provide a first-hand experience of a challenge-based learning hackathon for academic staff to support them in implementing a similar approach.
- Experience the potential value and application of challenge-based learning hackathons as an innovative and engaging learning experience.
- Facilitate an opportunity to learn about designing authentic and sustainable assessments.



Agenda

The ATU Assessment Hackathon 2023 took place on September 6th 2023 simultaneously across three off-campus locations in Galway, Letterkenny and Sligo.

Time	Activity
9:00	Start of event – tea/coffee and networking
9:20	Formal Welcome
9:30	LEGO® Serious Play activity
10:30	Engage Phase Connect with the big idea through the identification, development and ownership of the challenges identified as part of the questioning
11:00	Break
11:15	Present the Challenge Statement (in parallel)
12:00	Investigation Phase Question and analyse the actionable challenge further before suggesting a solution in the third phase
13:00	Lunch
14:15	Act Phase Develop a solution in the form of an assessment specification/brief with implementation and evaluation plan
15:20	Break
15:30	Presentations of the assessment brief (in parallel)
16:40	Spot prize winners announced
16:50	Hackathon wrap-up and feedback
17:00	Close

Table 1. ATU Assessment Hackathon Agenda

Challenge Based Learning

The Challenge Learning Framework includes three interconnected phases: Engage, Investigate and Act. Each phase includes activities that prepare you to move to the next phase. There are opportunities within each phase for mini-exploration cycles and, if necessary, a return to an earlier phase. Supporting the entire process is an ongoing process of documentation, reflection and sharing (The Challenge Institute, 2018).



Figure 1. Challenge Based Learning Framework (The Challenge Institute, 2018)

For further details on Challenge Based Learning refer to: https://www.challengebasedlearning.org

Chapter 2

Assessment
Hackathon
Learning
Game
Resources

CBL Game Boards

The Game Board below was developed specifically for the ATU Assessment Hackathon with reference to the Challenge Based Learning framework.

Available from: Assessment Hackathon Challenge Based Learning (CBL) Game Board - Digital Ed.



Figure 2. ATU Assessment Hackathon Game Board

The Game Board folded in three parts providing a flow to each phase. Each phase was developed and documented in sequence.

A generic Challenge Based Learning Game Board was also developed. The generic version can be used in any challenge-based learning exercise and prompts are generic enough to be applied within various settings.

Available from: Assessment-Hackathon-A3-Gneric_proof2.pdf (digitaled.ie)



Figure 3. ATU Challenge Based Learning generic Game Board

Learning Outcomes Game Card

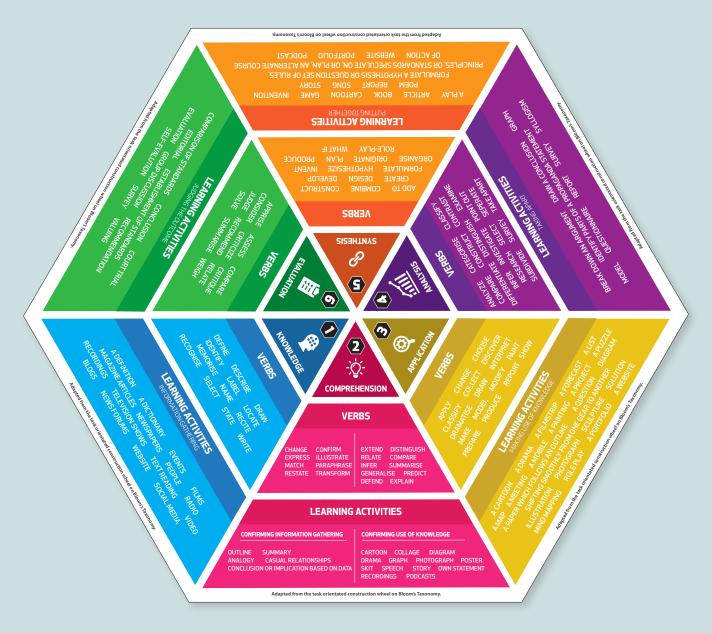


Figure 4(A). Learning Outcomes Game Card

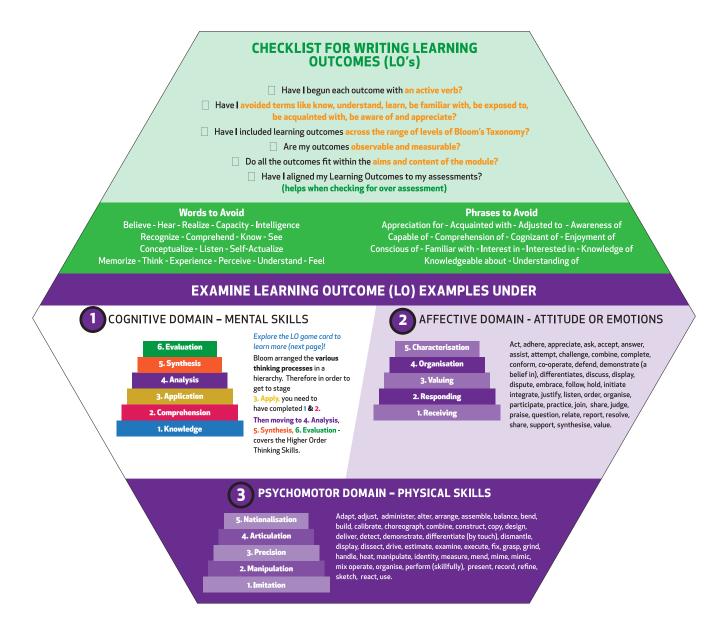


Figure 4(B). Learning Outcomes Game Card

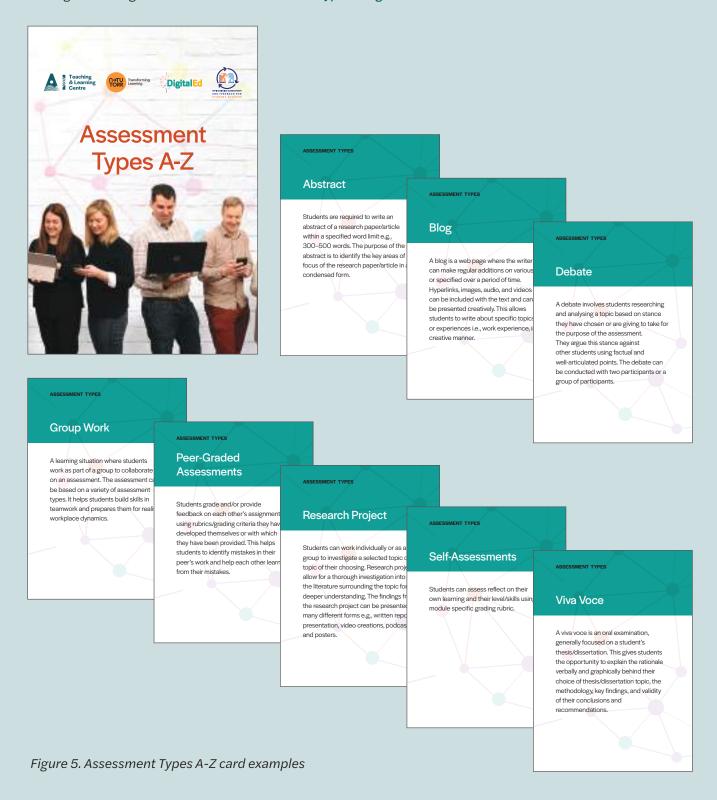
The Learning Outcomes (LOs) Game Card above is a useful learning outcomes design resource and this was made available to all participants at the hackathon. This resource covers a range of possible verbs to consider when constructing LOs, under the Cognitive, Affective and Psychomotor Educational Domains. It also maps different levels of learning to suggested learning activities and assessment options to consider.

Available from: Creating Learning Outcomes (LOs) with the T&LO Pyramid - Digital Ed - created by Dr Carina Ginty (ATU).

Assessment Types A-Z

The Assessment Types A-Z card deck presents 41 assessment types. All participants were supplied with a deck of cards.

The digital catalogue is available on: Assessment Types - Digital Ed.



Digital Collaboration Board (Padlet)

Two Padlet boards were used to share development and to document the day. Firstly, LEGO® Serious Play activity was documented and shared across the three locations, on: ATU Assessment Hackathon - Lego Serious Play (padlet.org).

Spot prizes were allocated on each location based on the highest number votes from peers.

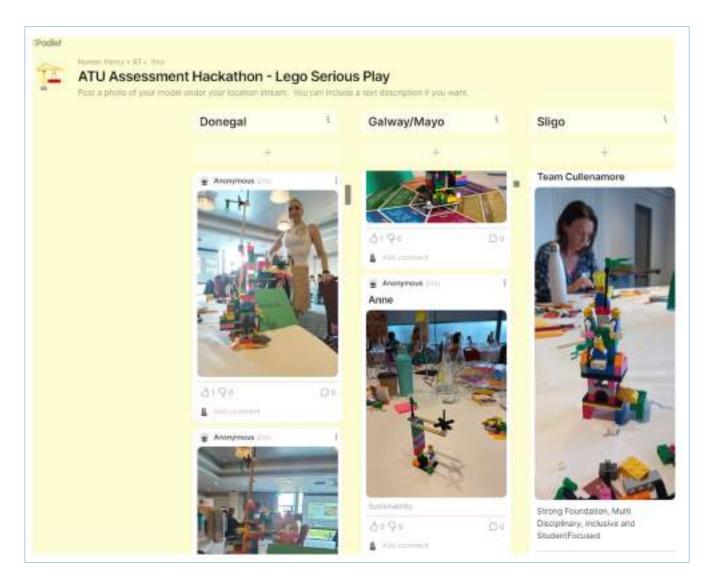
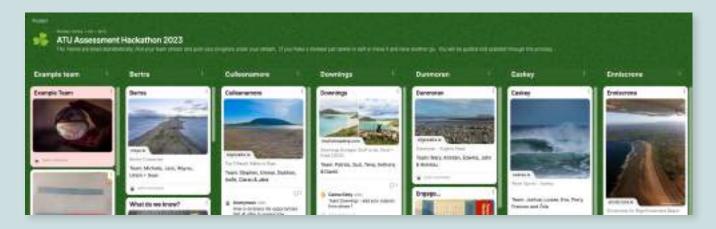
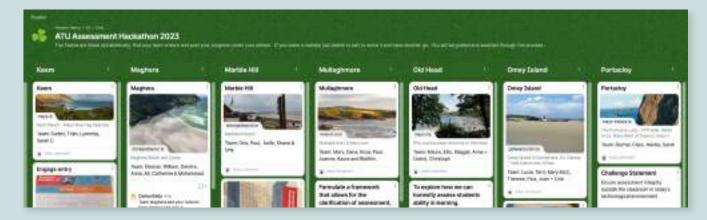


Figure 6. LEGO® Serious Play in action

The second padlet was used throughout the hackathon. Each table team had their own section ordered alphabetically by their assigned team name:

See: ATU Assessment Hackathon 2023 (padlet.org)





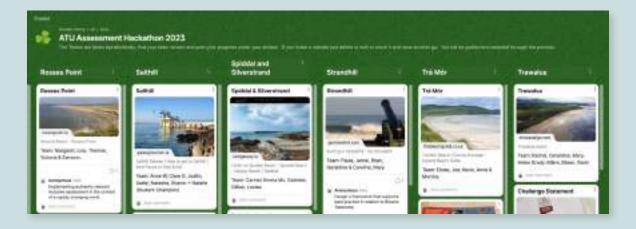
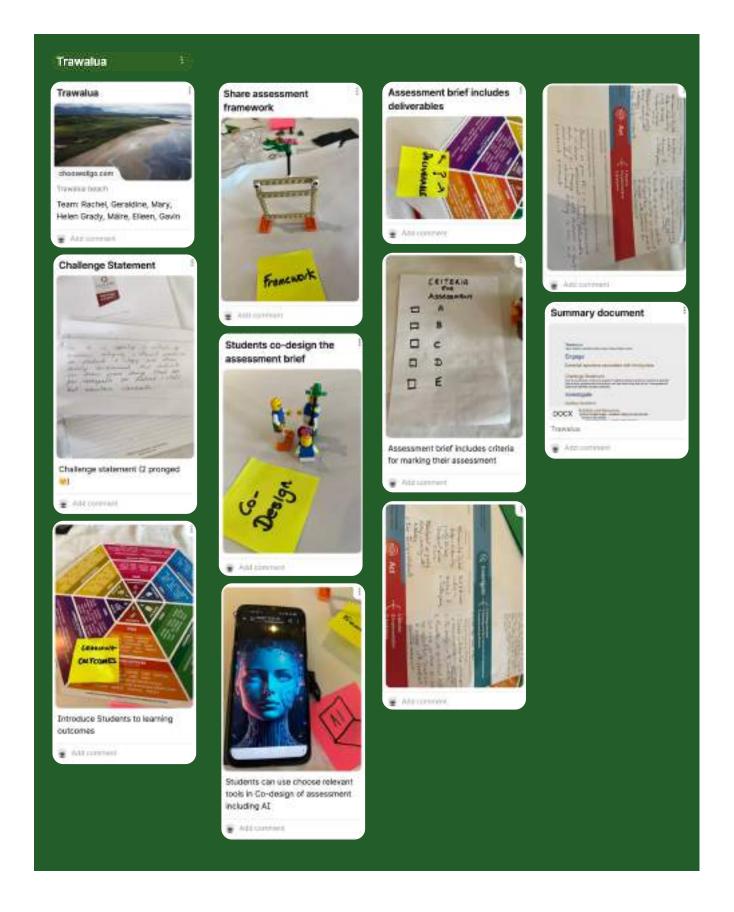


Figure 7. Hackathon Team Collaboration & Documentation

During each phase of the hackathon, team members documented on the Game Board, as well as posting the content on the digital noticeboard. The digital noticeboard enabled everyone to see activity from all three locations.



Social Media

Posting of content was encouraged throughout the day using #ATUHack23.























Chapter 3

Challenge
Based
Learning
Hackathon
Methodology

LEGO® Serious Play Icebreaker

A LEGO® Serious Play icebreaker was facilitated by Ken McCarthy, N-TUTORR SETU Institutional Lead. Each participant was supplied with a LEGO® Serious Play Exploration Bag (available for purchase on www.lego.com).

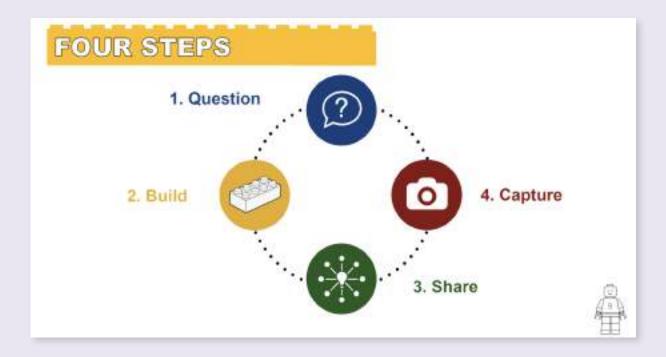


Figure 8. LEGO® Serious Play Steps

The participants were first asked to build a tower, as high as possible. Second, they were asked to represent the strengths they bring to the team. Lastly, they combined their efforts and Lego® models to build something new to represent themselves. The icebreaker not only proved to be a fun, interactive and innovative means of connecting the individuals and their teammates, it also created an environment of openness and creativity.

CBL Hackathon

The Challenge Based Learning framework is based on three phases: Engage, Investigate and Act. A hackathon can be based on other frameworks or self-defined phases, however in this instance CBL was seen as appropriate due to time constraints.

Engage Phase

Participants were asked to engage with the Big Idea of the hackathon:

Academically integral, authentic, and sustainable assessment for all in the age of Artificial Intelligence (AI)

In a short space of time (30 minutes) the team had to agree on and present a Challenge Statement based around the Big Idea.



Figure 9. Engage phase of the Game Card

Ideally the Challenge Statement should start with a verb and bring immediacy, while being exciting and realistic. To assist in the task a basic worked example was presented, as follows:

Engage phase worked example

Example challenge statement:

Relate a specified framework to practice in a real industry setting.

Context:

- Level 7, full-time and part-time distance students, in the technology discipline specifically in IT Services Management.
- Full-time student just completed work placement and part-time student are mostly working in the area.

Also, prompt questions were given:

Engage Phase prompt questions:

- 1. What are the challenges associated with our big idea?
- 2. What kind of questions the team would like to explore to help solve the challenge?
- 3. What is the context?
- 4. Are these questions specific enough, and realistic in the time allocated, i.e., today?
- 5. Who are the stakeholders?
- 6. Why is it important/relevant?



Investigate Phase

During the investigate phase (1 hour), participants further researched the agreed Challenge Statement and gathered information to gain a deeper understanding. By reviewing multiple means of activities and resources, findings and factors to be considered in solving the challenge were identified, documented and debated.



Figure 10. Investigate Phase of the Game Card

Examples of research to be considered for the worked example were presented:



Also, prompt questions were given:

Investigate Phase prompt questions:

- 1. What do you know within your team?
- 2. What do we need to know and understand to provide a solution?
- 3. What are the guiding resources and activities and where do we find them?
- 4. Who do you need to reach out to learn more?
- 5. Have you considered the students?
- 6. Where can you get quick feedback on your idea?
- 7. What are the emerging trends and research findings?
- 8. What are the challenges faced by educators?
- 9. What are the challenges faced by students?
- 10. Can you foresee any academic integrity issues?
- 11. What role can Artificial Intelligence play?
- 12. Are there any sustainability issues (consider not only environmental sustainability, but academic/personal/professional sustainability)?



Act Phase

In the final phase (1 hour), **Act**, the teams developed and presented their solution to their challenge-statement in the form of an assessment brief. There were no barriers, expectations or requirements on the solutions, no model or template was provided or expected. Teams were encouraged to be as creative as possible and encouraged that it may not necessarily be a written or verbal output. The Game Card, the padlet board, a verbal presentation and video recording were used as a multiple means of recording the outputs from the Act phase.



Figure 11. Act phase of the Game Card

The following prompt questions were provided to frame the phase:

Act Phase prompt questions:

- 1. What are the viable solutions?
- 2. How is it addressing the big idea (Academically integral, authentic, and sustainable assessment for all in the age of Artificial Intelligence)?
- 3. Is the assessment solution innovative?
- 4. Is the solution innovative and exciting yet realistic and achievable?
- 5. Is the solution academically integral?
- 6. Is there opportunity for cheating?
- 7. Is there opportunity for positive use of artificial intelligence?
- 8. Is it feasible and sustainable for educators to implement within current constraints time, resources, class sizes, reuse, grading etc?
- 9. Is it feasible, authentic, and valuable for students?
- 10. Does it align with learning outcomes?
- 11. How can it be fairly evaluated?



Chapter 4

Hackathon
Assessment
Briefs

In the months following the hackathon, the various means of documenting the hackathon process were gathered and analysed. The following 19 assessments briefs are the formal outputs. The briefs are grouped under four categories: Education Principles, Guiding Principles, Assessment Method and Lesson Plan.



Education Principles

How do we develop a culture of academic integrity & ethical practices in students & staff and then develop assessments that students can learn from doing that are fair / manageable for students & staff that maintain standards.

Team Trawalua: Rachel Nugent, Geraldine Dowling, Mary Nolan, Helen Grady, Máire McCallion, Eileen Armstrong and Gavin Clinch.

Design a project assessment in the age of Al.

Team Bertra: Michelle Lynch, Jack Saad, Wayne Gibbons, Ulrich Hoeche and Seán Daffy.



Guiding Principles

- Determine when and how it is appropriate for students to use AI in assessments. Team Enniscrone: Rose Banaghan-Sesta, Susan Leonard, Una L'Estrange, Ruth Quinn, Yvonne Shields and Padraig Harte.
- Create an authentic assessment in the context of Al.

Team Omey Island: Lucia Cloonan, Terri Muldoon, Mary McCormack, Therese Moylan, Paul Curran, Joan O'Keeffe and Orla Skehill.

How to embrace the opportunities that AI offers to support the development of students' foundational knowledge, understanding, skills, critical engagement and self-expression.

Team Culleenamore: Ciaran Comerford, Eimear Donlon, Siobhan O'Dowd, Aoife Cooney and Jake Conway.



** Assessment Method

Design a framework that supports best practice in use of AI in relation to Blooms Taxonomy.

Team Strandhill: Paula Ryder, Jamie Clarke, Brian Coll, Geraldine Duignan and Caroline Mullan.

Formulate a framework that allows for the clarification of the purpose of the assessments in conjunction with the students.

Team Mullaghmore: Mary Loftus, Dana Vasiloaica, Enya Gallagher, Paul Press, Joanne Regan, Azura Youall and Blaithin McGrath.

How can we support students and staff to embrace AI in a responsible way in an assessment content?

Team Trá Mór: Eloise McGinty, Joe Coll, Kevin Meehan, Anne Burke and Martina Sandilands.

Implementing authentic relevant inclusive assessment in the context of a rapidly changing world.

Team Rosses Point: Margaret McLoone, Lisa Dunne, Therese Hume, Victoria Matthew and Eamonn Toland.

Design a rubric that students use to *critically* evaluate the quality of AI-generated information in a problem-based-learning assignment.

Team Keem: Trish O'Connell, Surbhi Gautam, Luminita Boblea and Sarah Carroll.

 Design an assessment that encourages students to engage with and critique Artificial Intelligence (AI).

Team Downings: Patrick Brennan, Suzi Roarty, Tena Patten, Anthony McElwee and David Chernick.

Explore how we can honestly assess students' ability in learning.

Team Old Head: Maura Fitzsimons, Eilis McNulty, Maggie Wood, Anne O'Leary, John Carty and Christoph Brink.



Lesson Plan

 Design assessment that is worth doing while maximising students' choice (from the student perspective).

Team Easkey: Joshua Gallon, Louise Kearins, Eva Murphy, Perry Share, Frances O'Donnell and Órla Warren.

 Design authentic assessment that challenges learners to think critically and reflect upon how they approach assessment and solve problems.

Team Salthill: Anne Wiseman, Natasha Rohan, Judith Wurmel, Sadie Davoren, Clare Gilsenan, Nokuvimba Natalie Chiyaka and Sharon Boyle.

- Ensure assessment integrity outside the classroom in today's technological environment.

 Team Portacloy: Sarah Berthaud, Rachel McCarthy, Clare Lundon and Marilla Keating.
- Explore how AI tools can be utilised to enhance authentic assessment.
 Team Marble Hill: Orla Callaghan, Paul Higgins, Aoife McNally, Shane Wilson and Una Carthy.
- Create an assessment & feedback that develops sustainable critical thinking skills.

Team Maghera: Eleanor Diver, William Farrelly, Anna Meehan, Ali Usama, Catherine Jordan and Muhammad Abubakr Bajwa.

Investigate how language models can support and develop on assessment in response to the current and future working environment acknowledging the challenges of plagiarism.

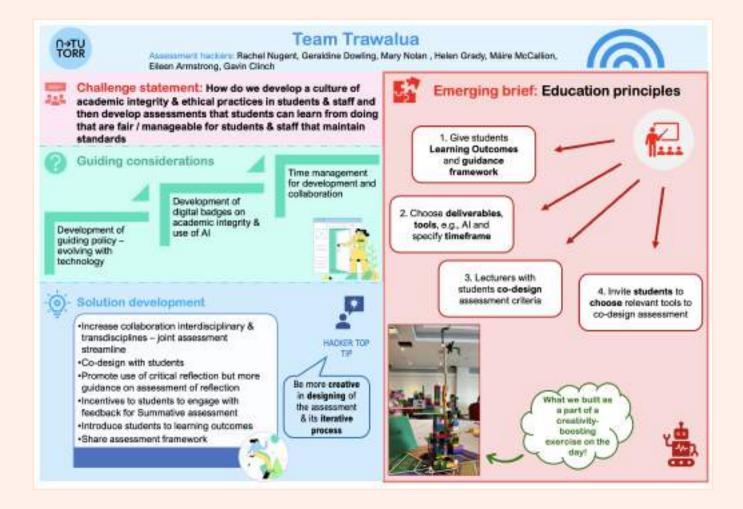
Team Dunmoran: Mary Carden, Kristian Mallon, Edwenia O'Malley, John Pender and Akinlolu Akande.

Rethinking / rewriting programme / module learning outcomes in the age of AI (assessment strategies are tools to help us to achieve LOs).

Team Spiddal and Silverstrand: Carmel Heaney, Emma McDonald, Gabriela Gliga, Gillian McManus-O'Connor and Louise Glynn.

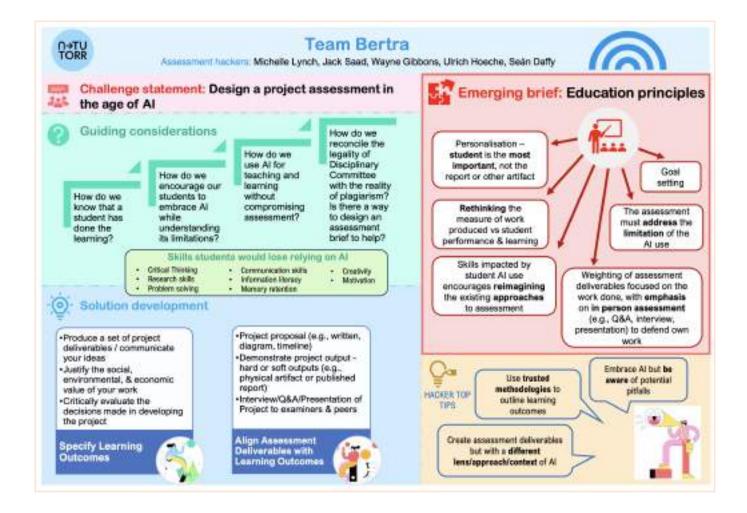


How do we develop a culture of academic integrity & ethical practices in students & staff and then develop assessments that students can learn from doing that are fair / manageable for students & staff & that maintain standards.



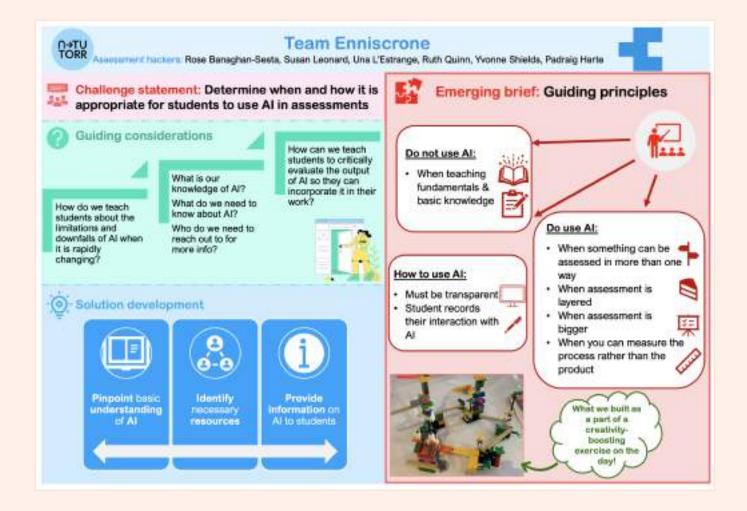


Design a project assessment in the age of Al.



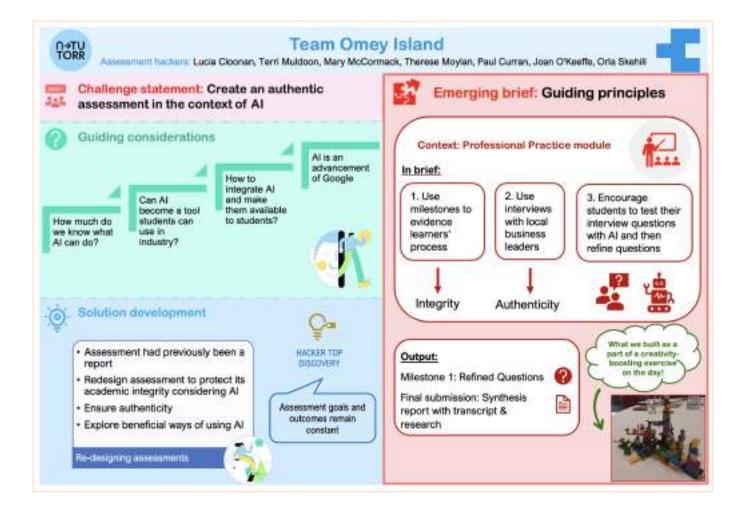


Determine when and how it is appropriate for students to use AI in assessments.



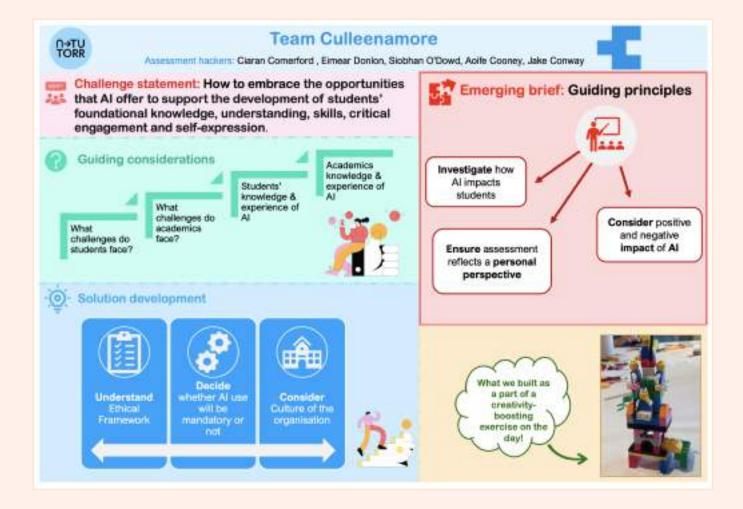


Create an authentic assessment in the context of Al.



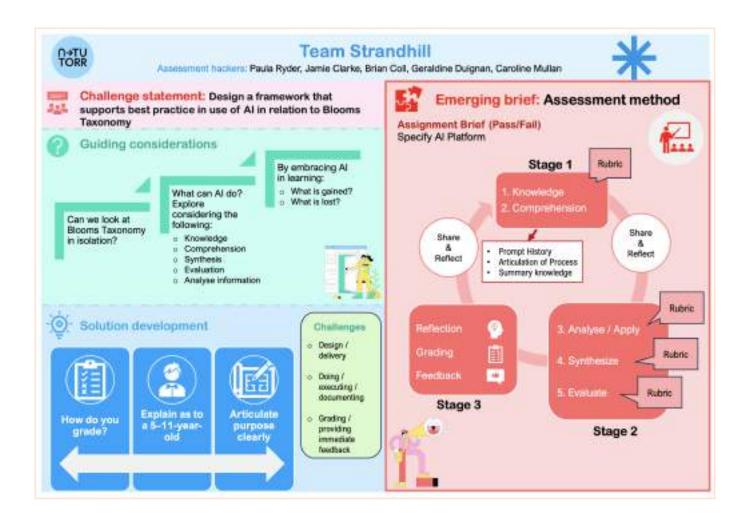


How to embrace the opportunities that AI offer to support the development of students' foundational knowledge, understanding, skills, critical engagement and self-expression.



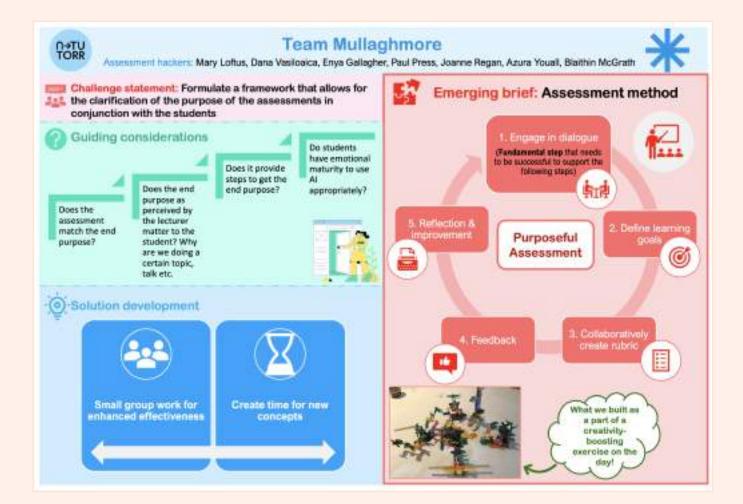


Design a framework that supports best practice in use of AI in relation to Blooms Taxonomy.



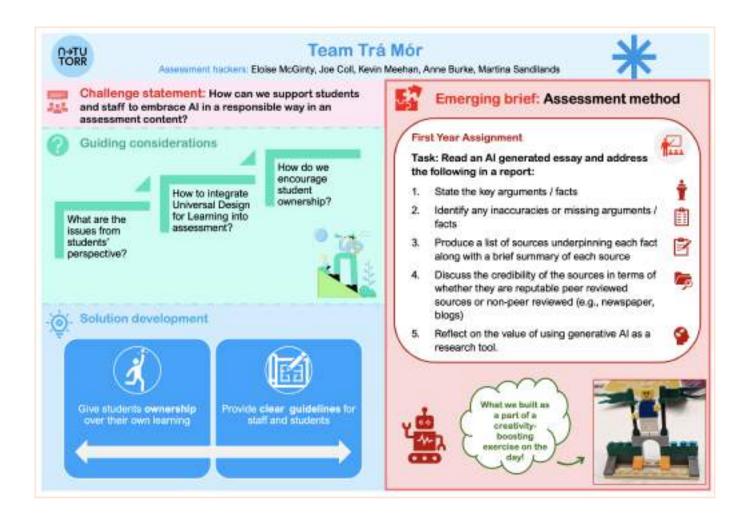


Formulate a framework that allows for the clarification of the purpose of the assessments in conjunction with the students.



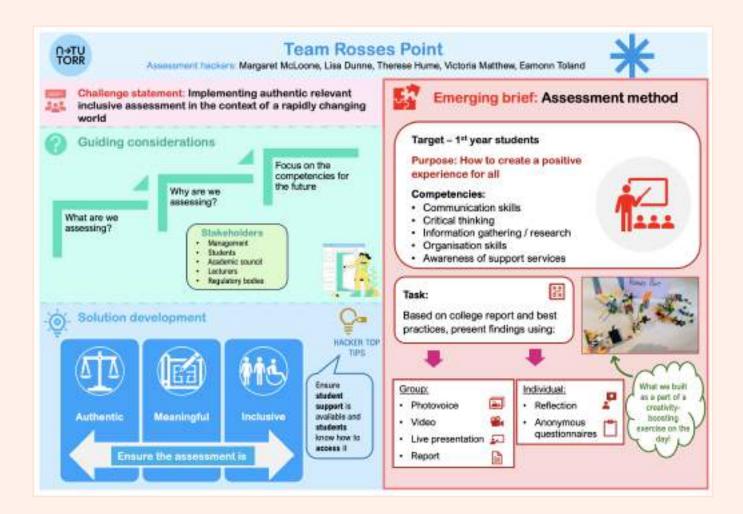


How can we support students and staff to embrace AI in a responsible way in an assessment content?



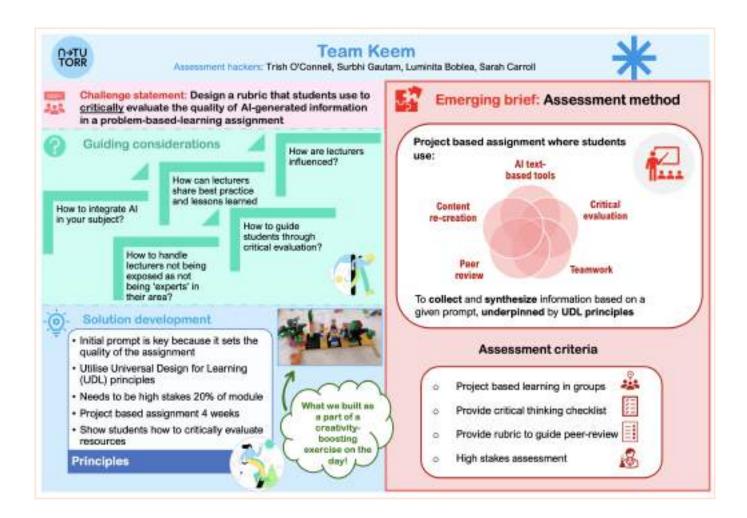


Implementing authentic relevant inclusive assessment in the context of a rapidly changing world.



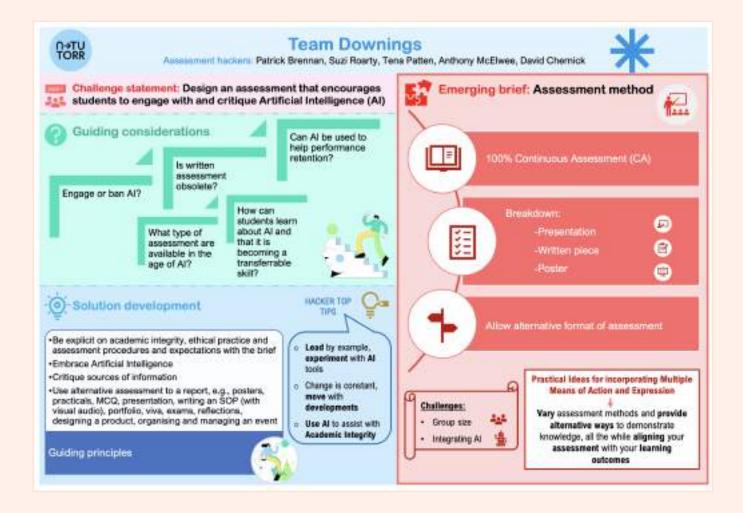


Design a rubric that students use to *critically* evaluate the quality of AI-generated information in a problem-based-learning assignment.



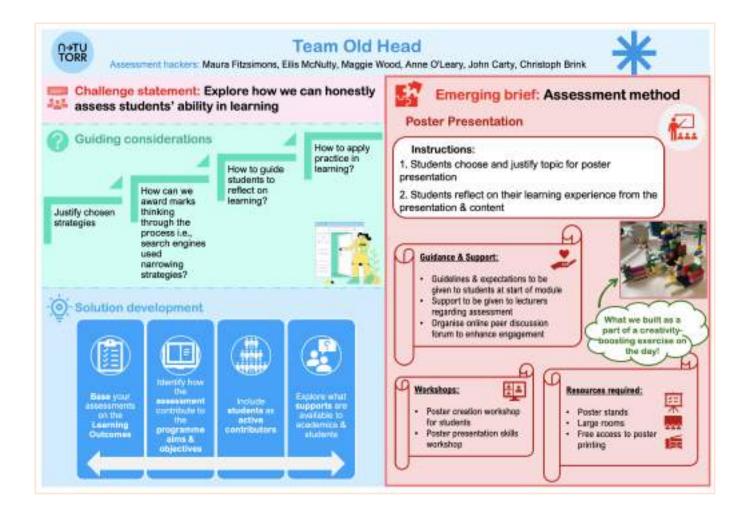


Design an assessment that encourages students to engage with and critique Artificial Intelligence (AI).



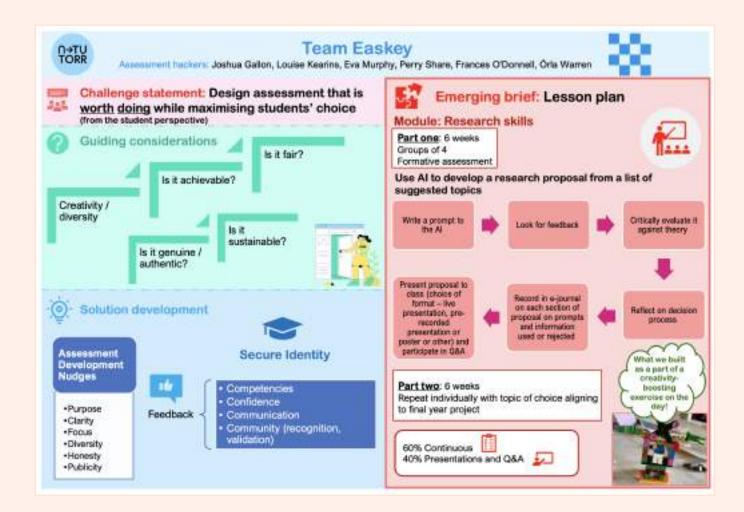


Explore how we can honestly assess students' ability in learning.



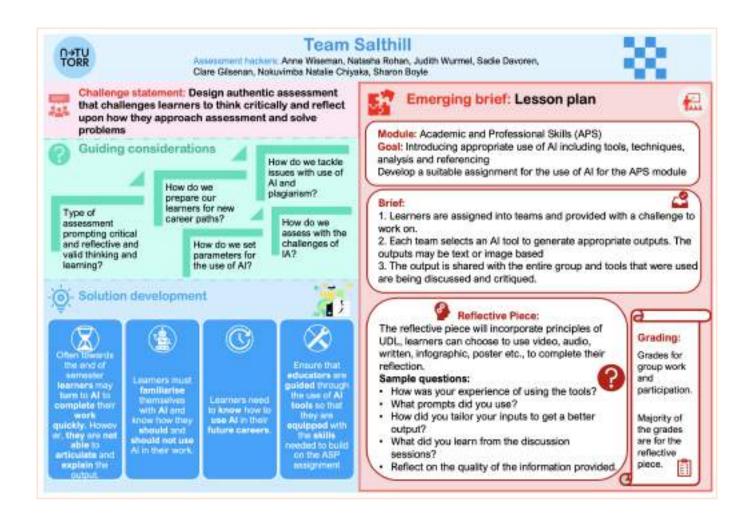


Design assessment that is worth doing while maximising students' choice (from the student perspective).



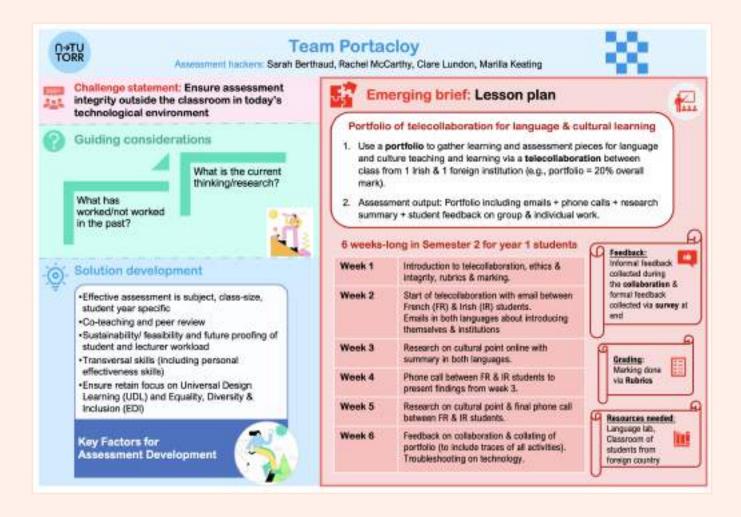


Design authentic assessment that challenges learners to think critically and reflect upon how they approach assessment and solve problems.



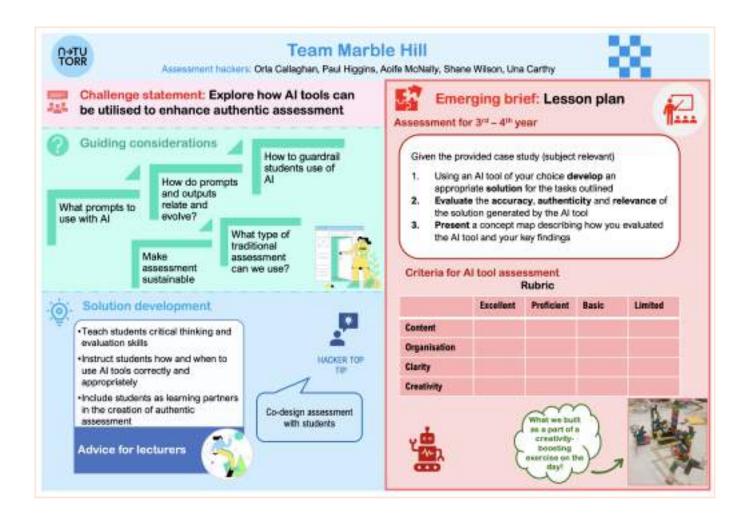


Ensure assessment integrity outside the classroom in today's technological environment.



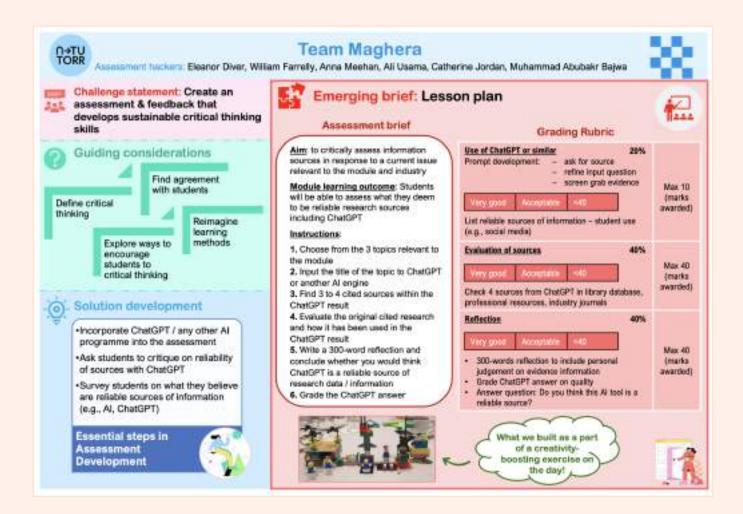


Explore how AI tools can be utilised to enhance authentic assessment.



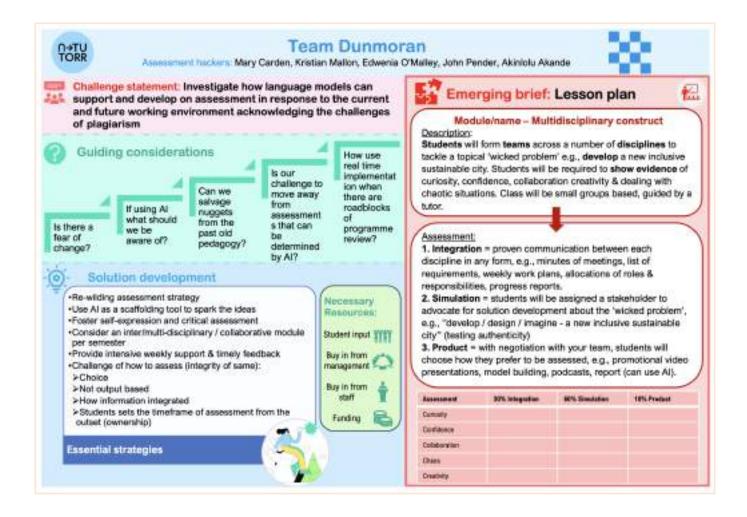


Create an assessment & feedback that develops sustainable critical thinking skills.



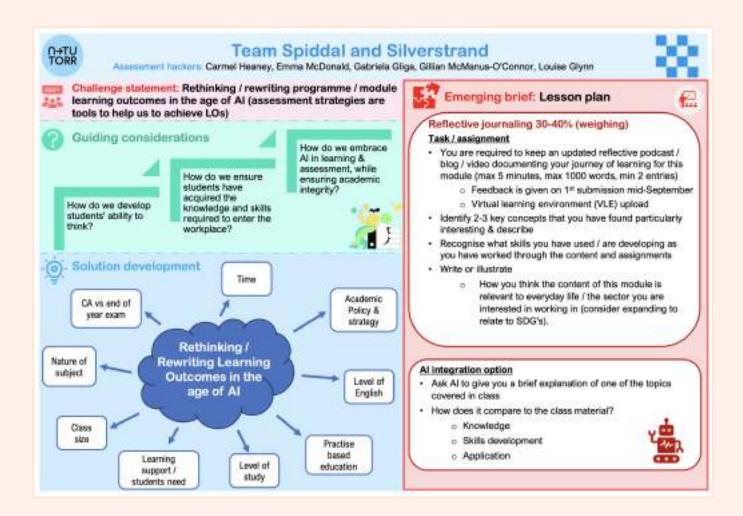


Investigate how language models can support and develop on assessment in response to the current and future working environment acknowledging the challenges of plagiarism.





Rethinking / rewriting programme / module learning outcomes in the age of AI (assessment strategies are tools to help us to achieve LOs).



Feedback

In late November 2023 feedback was sought from the hackathon participants through an anonymous survey (N=12). A sample of findings is presented in the table below.

59% of respondents changed their teaching and assessment practice this semester as result of participating in the Assessment Hackathon at the start of the semester.

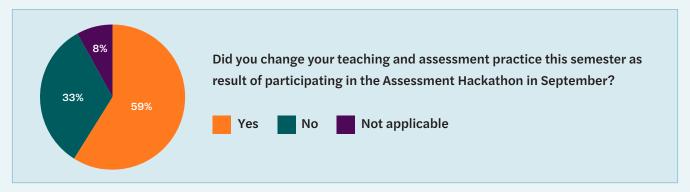


Figure 12. Retrospective perceived changes in Learning, Teaching and Assessment practice by Hackathon participants

The changes made relate mostly to Academic Integrity and Digital Transformation with specific relationship to Artificial Intelligence.

Specific changes implemented include:

Change	Category relating to N-TUTORR themes
Introduced a lecture on AI.	Academic Integrity and Digital Transformation
I provided students more ownership regarding their assessment. I let them choose the most appropriate assessment strategy. The students selected to go with a Podcast for one of the learning outcomes and a debate for the other.	Universal Design for Learning
I have started using the Smart H5P Artificial Intelligence in my work to generate quizzes, glossaries, and interactive videos.	Digital Transformation
I have explicitly flagged ChatGPT in my module delivery, making students aware of it and encouraging debate and reflection on the role (if any) it should play in their learning journey.	Academic Integrity and Digital Transformation
Introduced more self-assessment.	Academic Integrity, Universal Design for Learning, and Equality, Diversity and Inclusion
I discussed the use of generative AI with my students at the start of the module and provide guidance on its use. I also clearly outline if I permit its use within CAs.	Academic Integrity and Digital Transformation
I have created an activity for students to 'ask AI' in creating an exercise session as part of our Personal Training module.	Digital Transformation

Table 2. Changes made by academic staff, categorised by N-TUTORR Theme

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