

3.7

Inclusive and Ethical Assessment

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This chapter explores the principles and practical applications of inclusive assessment in engineering education, at a programme and module level, highlighting strategies such as Universal Design for Learning (UDL), Culturally Sustaining Pedagogy (CSP), and presenting a case study on choice in assessment. These approaches move institutions toward a culture of equity and opportunity for all learners. Assessments do more than measure student learning — they shape how students engage with content, develop skills, and demonstrate understanding. In engineering modules, ensuring that every learner has an opportunity to succeed is essential, yet traditional assessment practices often favour certain groups while leaving others at a disadvantage. Inclusive assessment goes beyond accommodating individual needs; it actively addresses systemic barriers to access, learning, and achievement. By offering flexibility in a diverse range of assessment modes and approaches, educators can create learning environments that are equitable, supportive, and motivating. Evidence shows that such flexibility, employing the ‘multiple means’ principles of UDL not only improves fairness but also enhances student engagement, confidence, and skill development.

1 Background: key terminology and frameworks

Meeting the differing needs of students and providing equity in assessment is crucial for effectively evaluating student learning in our increasingly diverse higher education landscape. In this chapter, we will explore inclusive approaches to assessment and provide practical examples of approaches which can be implemented by those who design and deliver engineering programmes, and modules. This chapter combines conceptual discussion with practical guidance and provides a useful guide for educators who wish to enhance their inclusive assessment design and practice. Inclusive feedback strategies are discussed in Chapters 2.12 and 2.13.

This first section will introduce the principles and concepts of inclusive assessment. Section 2 will explore practical strategies and ethical approaches to inclusive assessment, firstly outlining key considerations for inclusive programme planning and design for assessment, before focusing on the inclusive assessment case study technique of Choice in Assessment, with key considerations, examples from practice, and recommendations for implementation. The final section summarises the practical applications, giving recommendations for inclusive practice in inclusive and ethical assessment.

1.1 Inclusive education

Hockings' (2010, p. 1) definition of inclusive education states that it “*refers to the ways in which pedagogy, curricula and assessment are designed and delivered to engage students in learning that is meaningful, relevant and accessible to all. It embraces a view of the individual and individual difference as the source of diversity that can enrich the lives and learning of others*”.

Inclusive education is a dynamic process requiring institution-wide commitment to a systematic transformation of the culture, processes, and practices of the university, to overcome barriers to the presence, participation, achievement, and experience of all students, and to account for and celebrate the rich diversity of the learning community (Cardiff University, 2025). Oliveri and Wendler (2020) give an overview of admissions trends from an international perspective, suggesting that changes due to globalisation and the increase in international students across the globe result in a need for institutions to identify and plan for changes in the diversity of our students. In fact, higher education is more diverse than it has ever been. This diversity has been driven by widening access and participation agendas, and by equality legislation across the globe.

The changing landscape of higher education has made it more significant than ever to reflect on practice to meet the needs of the diverse student population. Knowledge of the diverse, intersectional identities of students is fundamental to design, teaching practice, and assessments. By acknowledging and understanding the diversity of students and anticipating the barriers that students may face whilst at university, educators can ensure they are providing learning opportunities that are authentic, relevant, and meaningful for all (Cardiff University, 2025).

For students, a crucial aspect of assessment revolves around the extent to which the format enables them to effectively demonstrate their achievement and potential. As noted by Thomas and May (2010, p. 13), inclusive assessment refers to “*the design and use of fair and effective assessment methods and practices that enable all students to demonstrate what they know, understand and can do*”. Inclusive assessment sometimes invokes the notion of ‘*justice*’ (McArthur, 2016, 2018), going beyond definitions of equality and equity to emphasize a system which offers access to both tools and opportunities for all learners. By anticipating the needs of students, the impact of crisis management and providing individual adjustments can be reduced.

1.2 Universal Design for Learning

Recognising and valuing diversity in higher education is not only about acknowledging students’ backgrounds, but also about rethinking how learning is structured to help ensure equitable access and success for *all* learners. As institutions continue to diversify, so too must pedagogical approaches, to reflect this reality. This shift requires changing from traditional learning approaches to proactive, intentional design that anticipates a wide range of learner needs and experiences. One such approach is Universal Design for Learning (UDL), which offers a practical framework for embedding inclusivity at the heart of curriculum and assessment development (CAST, 2024). The following section explores how UDL can serve as a tool for creating accessible and meaningful learning experiences that empower all students to thrive.

Inclusive education can be approached through the lens of UDL, as both intend to create a learning environment designed for a diversity of learners, rather than retrospectively making adaptations to accommodate specific students (Advance HE, 2018). UDL is a set of principles for curriculum development that give all individuals equal opportunities to learn. The goal of UDL is learner agency that is purposeful and reflective, resourceful and authentic, and strategic and action-oriented (CAST, 2024). UDL provides a blueprint for creating instructional goals, methods, materials, and assessments that work for everyone — not a single, one-size-fits-all solution, but rather a flexible approach that enables learning to be customised and adjusted for individual identities and needs (UDL on Campus, 2022).

UDL is thus a framework to guide the design of learning environments that are accessible, inclusive, equitable, and challenging for every learner. Ultimately, the goal of UDL is to support learner agency: the capacity to actively participate in making choices to meet learning goals (Cardiff University, 2025). UDL aims to change the design of the environment rather than to situate the problem as a perceived deficit within the learner. The UDL guidelines are set out in three sections: multiple means of engagement, multiple means of representation; pertinent to this chapter, assessment is addressed in the third section: multiple means of action and expression (CAST, 2024).

Learners differ in the ways they navigate a learning environment, approach the learning process, and express what they know. Therefore, it is essential to design for these varying forms of action and expression in assessments. For example, individuals

approach learning tasks in very different ways, and may prefer to express themselves in written text but not speech, and vice versa. It may not always be feasible to build in multiple options or choices for every activity or assessment, if a competence standard must be reached (Cardiff University, 2025). However, as far as possible, across a programme there should be diversity in assessment modes, that is, whether written, presentation, multimedia, practical and so on.

It should also be recognised that action and expression require a great deal of strategy, practice, and organisation, and this is another area in which learners will differ. In reality, there is no single means of action and expression that will be optimal for every learner; therefore, giving options for action and expression is essential (CAST, 2024).

Numerous traditional pedagogical approaches exist around creating assessments, with the three main categories each addressing learning in different ways (Davies, 2024a). Commonly, he notes that assessment is framed in terms of "*certification (assessment of learning — what learners know and can do), learning (assessment for learning — what learners need to study), and sustainability (assessment as learning — learners directing their own learning)*", as previously noted by Boud et al. (2018). Boud and Associates (2010) stress that assessment "*powerfully frames how students learn and what students achieve.*"

UDL asks practitioners to think about how learners are expected to act and express themselves. It suggests that options are designed that:

- Enable variety in interactions in responses, navigation, and movement, and enable options in interactions using accessible materials and assistive and accessible technologies and tools;
- Provide options and flexibility for students in the expression and communication of their learning, through multimedia and multiple tools for construction, composition, and creativity, challenging exclusionary practices;
- Build fluencies with graduated support (including scaffolding) for practice and performance, addressing biases related to modes of expression and communication;
- Support students in strategy development and the setting of meaningful goals, enabling students to anticipate and plan for challenges and organise information and resources (Cardiff University, 2025; CAST 2024).

Example 1 shows an example of series of additional prompts that can help you as educator reflect and enhance your use of multiple means of action and expression in teaching practice:

Example 1. Reflection for educators

Do you design for:

- *Choice or flexibility in responses, interactions, activities, and collaborations within sessions?*

- *A range of accessible resources, tools and technologies for expression of learning?*
- *Choice or flexibility in the mode students can demonstrate their knowledge or skills, such as written, spoken or multimedia?*
- *Scaffolded support for students to demonstrate essential skills in a particular mode, for example practice runs, formative tasks, and clear criteria for skills as well as content?*
- *Support for goal setting, strategic planning, time management and management of information, such as module and assessment maps, session plans and summaries of information resources?*
- *A diverse range of authentic but customised assessment methods accessible for EVERY student, while still aligning with the same module learning outcomes (Cardiff University, 2025; Davies, 2024b)?*

Inclusive, universally designed assessment processes provide for all students whilst also meeting the needs of specific groups. There are a series of research-informed recommendations for the programme-level design of inclusive assessment (Advance HE, 2018; Cardiff University, 2025; Tai et al., 2023). This research suggests programmes should employ:

- A range of assessment approaches that are accessible, non-discriminatory, and timely;
- A range of feedback approaches that are accessible, interactive, ongoing, and timely;
- Incorporation of student choice in assessment practices;
- Opportunities to critically engage with equality, diversity and inclusivity themes in assessments that relate to authentic real-life scenarios;
- Preparation, engagement, and support of students throughout the assessment process, that develops their assessment literacy;
- Opportunities for students to act as partners in the assessment and feedback process;
- A programme-level approach to the design, development, understanding, and coordination of assessment and feedback practices;
- Routine monitoring, review, and sharing of assessment practices that embed equality, diversity, and inclusivity.

Since programme learning outcomes need to be demonstrated by students and marking against these must be shown appropriately to maintain quality and professional standards, assessments need to be designed to substantiate them in a meaningful manner (Davies, 2024b). While UDL lays the principles for inclusion, it does not specify approaches to ensure learners from different cultures are equally regarded. Thus, we turn to principles of Culturally Sustaining Pedagogy (CSP).

1.3 Culturally sustaining pedagogy

As a social construct, assessment could be said to comprise practices and processes in which specific values and practices are reflected and enshrined, such as (in the UK, for example) rationality, individuality, objectivity, and written communication skills (Cardiff University, 2025). Recent work on inclusion and universal design of assessment has focused on the imperative to consider the socially constructed nature of assessment, through the lens of CSP (Hanesworth et al., 2019). Paris (2012, p.93) as cited by Hanesworth et al. (2019), defines CSP as being an educational approach that *"seeks to perpetuate and foster, to sustain, linguistic, literate, and cultural pluralism as part of the democratic project of schooling."*

Assessment forms and practices that are created through unquestioned and habitual use become normalised and can marginalise and exclude certain students and cohorts for whom such practices are unfamiliar or inaccessible (Cardiff University, 2025). In addition, assessments can be seen to hierarchise knowledge: in the necessary selection of content for assessments, practitioners subconsciously communicate to learners what disciplinary knowledge is important or valuable, and what is not. Assessment is indivisible from individual value judgements: they are designed and evaluated by practitioners, who have their own complex socio-cultural backgrounds, educational experiences, and intellectual and personal values (Cardiff University, 2025).

The concepts of inclusive education and assessment, UDL, and CSP are all closely linked, and directly inform the inclusive assessment approaches outlined for practitioners in Section 2. For practitioners, the following section outlines concrete steps it may be possible to take to implement these concepts in the design and implementation of assessments. The levels of agency individual practitioners have, and the barriers to implementation that may be experienced, will vary by programme, topic, institution, and country. However, as these strategies have been found in the literature to support inclusive assessment, implementing these approaches should be considered, whether immediately available, or, due to barriers to implementation, seen as a longer-term goal.

2 Inclusive assessment approaches

2.1 Programme planning and module design for inclusive assessment

There are core considerations when planning and designing programmes and considering the inclusivity of assessments: writing inclusive programme learning outcomes, mapping assessments by student journey, and identifying ethical, cultural, and linguistic challenges in assessment. This supports UDL by enabling 'multiple means of engagement' and 'multiple means of action and expression' by removing elements of the learning outcomes which restrict assessments to the expectation of fixed means of engagement in and demonstration of learning by students.

Writing inclusive programme learning outcomes

When designing programme learning outcomes, the conditions by which all students will be assessed are created, whatever their dimensions of diversity or characteristics. It is therefore essential that academic and competence standards of the programme are identified, and that learning outcomes are written in such a way that maximises flexibility, choice, and equity in assessments, to avoid unintended institutionalised discrimination (Cardiff University, 2025).

Writing inclusive programme learning outcomes ensures all students can demonstrate what they know or can do, to enable them to meet the learning outcomes to their potential. Once programme learning outcomes are mapped, module learning outcomes and assessments should then be mapped on to them, and module leads should be supported to understand the relationship between their module and the whole programme, and the relationship with the whole student journey. Identifying any challenges for diversity includes asking whether there are any modes of assessment which are over-represented (for example written versus speech, exam versus coursework)? Example 2 works through an example on how educators from a second-year engineering module in a UK university have assessed their learning outcomes on inclusivity.

Example 2. An inclusive learning outcome (Cardiff University, 2025)

To assess whether a learning outcome is inclusive, explore the components and expectations of the mode of assessment. For example, an engineering programme learning outcome might be that students are able to 'write a report outlining the design of a new building to provide a student learning facility to engender creativity, innovation, exploration and collaboration'.

Firstly, the educator must decide whether a written report is a competence standard for this programme. Is writing a report an essential skill? Could a student demonstrate their learning in another mode, such as an oral presentation?

The Equality and Human Rights Commission (2024, p. 78) states that, when considering disabled students, universities must "ensure that academic staff setting assessments know which aspects of their test are competence standards which must be met, and which aspects are the methods of assessment which may be reasonably adjusted."

Thus, if it can be justified that a written report is a core competence for this programme, then the learning outcome can remain. Otherwise, the performance criteria could be rephrased to enable multiple modes of action and expression (using the principles of UDL), with the student being able to complete an oral or written analysis. For example: 'conceive, design, and communicate the design of a new building to provide a 'student learning' facility to engender creativity, innovation, exploration and collaboration' (Cardiff University, 2025), rather than specifically stating to provide a written report.

Mapping assessments by student journey

To ensure inclusive, universally designed programmes, it is useful to identify over-assessment, bunching, early and low-stakes preparation for assessment types, potential options for adding choice in assessment, and adequate support for students undertaking new or innovative assessment types. This ensures equity in provision and an inclusive approach to support students to demonstrate their learning. In addition, when mapping, consideration should be given to what might be offered as alternative assessments for students, such as those eligible for adjustments due to disability, or those with emergencies or health issues.

To map the inclusivity of assessments on a programme, apply the principles of UDL in enabling flexibility and students' multiple means of action and expression across the programme. Identifying the modes of assessment open to students enables analysis of the range of different modes of assessment offered, and the potential barriers to attainment for groups of students. If analysed as a module-based timeline, as in Example 3 from a third-year engineering module, the dominance and flow of modes of assessment becomes apparent.

Example 3. Map of assessment modes in a module

	Module 1	Module 2	Module 3	Module 4	Module 5	Module 6
Year 1 Semester 1	Essay	Exam	Presentation	Practical Experiment	Group project written	Exam
Year 1 Semester 2	Exam	Essay	Essay	Exam	Written Portfolio	Essay
Year 2 Semester 1	Essay	Presentation	Essay	MCQs	Exam	Practical experiment
Year 2 Semester 2	Report	Exam	Essay	Essay	Essay	Essay
Year 3 Semester 1	Group project presentation	Essay	Written portfolio	MCQs	Research Project/ Dissertation	N/A
Year 3 Semester 2	Research Project	Practical experiment	Written Portfolio	Exam	Research Project/Dissertation	N/A

Figure 3.7.1: A module-based timeline of modes of assessment on an undergraduate engineering programme. Grid overview of assessment formats for six modules per semester over a three-year period, covering two semesters per year. Assessments are colour coded and cover essays, exams, presentations, practical experiments, MCQs, portfolio and group work (Own Work by Ceri Morris, 2025)

The figure illustrates that there is a reasonable range of assessment modes across the programme, with some oral, group, digital, and practical forms of assessment. However, semester 2 in years one and two all use written modes of assessment: students with dyslexia, or those with English as an additional language, might find this more challenging. Oral forms of assessment create fewer barriers to learning than written assessment modes for these students, so a change to the offer of choice in assessment mode, or a different mode in these modules, would be more equitable for diverse students.

Identify ethical, cultural, and linguistic challenges in your assessments

Assessment practices can often be created using normalised 'folk' pedagogy, i.e., using unquestioned and habitual forms that are culture-specific, which can marginalise and exclude students for whom such practices are unfamiliar and inaccessible. Analysis of assessments through the lens of UDL and CSP (Hanesworth et al., 2019), enables practitioners to be aware of an over-emphasis on traditional, familiar practices, such as the domination of the written essay and technical reports in UK universities, over those more familiar in other countries, such as oral examination or group work.

Effective assessment design acknowledges and incorporates students' funds of knowledge (Gee, 2018): the rich cultural, experiential, and community-based knowledge that learners bring with them into the classroom. By valuing these diverse forms of knowledge, assessments can move beyond narrow academic norms and instead offer meaningful, authentic opportunities for students to connect disciplinary learning with their own lived experiences. This approach might involve practitioners inviting students to draw on community practices, personal narratives, or real-world problem-solving strategies in assessment tasks. Designing assessments in this way not only affirms students' identities and strengths but also fosters deeper engagement, critical thinking, and a stronger sense of belonging within the learning environment (Gee, 2018).

Alternative assessments

Some countries, such as the UK, have enacted equality legislation, which requires universities take an anticipatory approach to support the varied needs that learners in the classroom will have. This means programmes proactively consider what adjustments might be made for students from the outset of programme design, rather than waiting until a crisis response to individual students' needs during a programme.

Students may have a disability, experience significant health issues, have caring responsibilities, or face a personal crisis, or may need to resit an assessment that cannot be replicated. Alternative assessment may therefore be required where a live assessment cannot be completed, including where reasonable adjustments cannot adequately mitigate disadvantage for disabled students, where verified health or personal circumstances prevent attendance, or where the timing of a resit (for example, during a break period) makes it impossible to reproduce activities such as group work or live presentations.

Programme or module leads should proactively identify alternative forms of assessment that assess the same learning outcomes. Identifying alternative assessments and adjustments that can be made to assessment methods from the outset, to meet the needs and challenges of students, addresses these requirements and ensures that these alternatives provide an equitable opportunity to demonstrate learning and skills. It should be ensured that assessment guides, marking criteria or rubrics (See also Chapter 3.4) are designed for all alternative forms of assessment, in addition to the standard assessment, and that these are shared and explained to students.

The scenario assessment in Example 4 illustrates how cultural assumptions embedded in test items can disadvantage certain groups of test takers, even when traditional statistical methods such as differential item functioning do not fully capture the source of that disadvantage. Specifically, it shows that for students undertaking a second-cycle degree engineering (master) programme, contextual knowledge, shaped by students' everyday experiences, can affect their ability to engage with an item as intended. When test items presume familiarity with specific systems, environments, or practices, they may inadvertently privilege some students while placing an extra cognitive burden on others. This can lead to construct-irrelevant variance, that is, differences in test performance that reflect background knowledge rather than the targeted construct, thus compromising both fairness and validity. Below is an example of how you can embed construct-irrelevant variance in a question when not all learners have the same lived experience with the context of a scenario-based assessment.

Example 4. Scenario assessment

Consider a science assessment item that presents a scenario involving municipal water treatment. The question may describe how water is collected, treated at a centralised facility, and distributed through public infrastructure, before asking students to evaluate the effectiveness of Environmental Protection Authority (EPA) standards for managing contaminants.

For students from urban or suburban settings, this scenario may mirror everyday life. However, for students in rural areas who rely on well water, where treatment and testing are handled privately and may not be subject to EPA regulations, the scenario might seem abstract or unfamiliar. These students must first work to understand a context that does not reflect their lived experience, before even beginning to apply their content knowledge.

As a result, what appears to be a straightforward question about environmental science may inadvertently test familiarity with urban infrastructure, introducing an unintended and inequitable barrier. This example underscores the importance of critically examining the cultural assumptions in test content, not just its statistical behaviour, to create assessments that are valid and inclusive for all learners.

2.2 Inclusive assessment case study technique: choice in assessment

Choice in assessment can take many forms: choice of topic, modes (such as written, presentation, multimedia, etc.), or scope, such as individual or team work. While choice of topic may be more familiar, the option of choice in mode or scope at a single point of assessment has been seen as more challenging, despite the potential to provide for UDL principles through multiple means of action and expression (Cardiff University, 2025).

Recent post-pandemic publications support choice in assessment, highlighting how positive changes made during the pandemic enabled the introduction of diversity and choice in assessment, and exploring how these might be sustainable in the future

through changes to assessment principles and practices, and collaborating on a programme-level approach to assessment (O'Neill & Padden, 2021).

In relation to student choice in assessment mode, research by O'Neill (2017) highlights the complexity of issues surrounding the implementation of student choice in relation to equity, perception of staff and students, careful and transparent alignment, and impact on outcomes, programme requirements, and standards of professional engineering institutions such as the AHEP4 or EUR-ACE standards.

Despite these complexities, O'Neill (2017) highlighted the positive impact of a limited choice for students, with the attainment of higher grades than those achieved by previous student cohorts who did not experience choice (Cardiff University, 2025). Similarly, Hockings' seminal review of the literature (Hockings, 2010) suggested that having choice in assessment mode enables students to deliver evidence of their learning in a medium that suits their needs, rather than in a predetermined and prescribed format, which may disadvantage an individual or group of students in the cohort. Research on student choice in assessment by Cardiff University highlighted similar themes (Morris et al., 2019). Similarly, case study research in progress at Cardiff University suggests very strong support for choice in assessment from students: on one engineering module offering choice, 87% of students supported choice in assessment at the start of the module, rising to 98% after the experience of submitting the assessment for the module. Students cited employability, diversity, and learning needs, the ability to work to their strengths, creativity, and engagement as the key reasons for these opinions. Students also highlighted the benefits of choice in assessment in helping them develop their decision-making abilities for future work and education. Similarly, staff identified benefits for the student experience, the potential positive impact on student satisfaction scores, developing a range of useful skills, meeting diverse needs, higher engagement, and more creativity as key factors in the arguments for choice in assessment.

In the following example, a year 3, first-cycle (bachelor) engineering design module offered free choice in the assessment mode that students could use to submit their problem-based learning coursework:

Example 5. Providing choice of assessment formats (Davies, 2024a)

Engineering practice often requires complex and interdisciplinary solutions, where authentic real-world challenges are approached through problem-based learning. These complex coursework design projects can pose an additional challenge around mapping learning outcomes across a diverse set of students. These challenges are not insurmountable but do require care and attention when designing appropriate authentic coursework assessments.

To ensure these challenges are addressed, use grading schemes together with detailed assessment-level criteria descriptors that meet learning outcomes, but without specifying the format, or mode, of the assessment. The aim is to design inclusive assessments for all students to evidence their potential, without the need for reasonable adjustments or further accommodations.

In this example, a design coursework assessment, students were allowed to choose between a range of flexible assessment options for their individual and group submissions. These assessment options included:

- *presentations — live*
- *videos — recorded*
- *storyboards*
- *digital simulations — models*
- *physical models*
- *animation*
- *technical written report*
- *a combination of the above*

To aid transparency, provide marking criteria schedules that clearly highlight and evidence equivalence across these diverse assessment formats, in an attempt to ensure equity while providing clarity for students and staff from the start of the module.

Ensuring equivalence of workload (Davies, 2024b) across various assessment formats is certainly an important discussion (Galvin et al., 2012), especially if some choices are perceived by students as needing less effort to achieve the same level of success and academic standard. Morris et al. (2019) found that students had reservations around being given a choice, being concerned about "fairness" around some modes of assessment. To gather student opinion on their experience of choice, students in this module were asked about their experience, and which mode of assessment was felt to be the most challenging. Interestingly, the results were equally weighted between the choices provided, namely presentation, oral, written report, or oral exam. This demonstrates that what is viewed as a preferred or a challenging mode of assessment is dependent very much on the individual. However, all students were in favour of the experience of choice.

Choice in assessment should be designed as part of a suite of varied assessments across the programme, with a range of supported opportunities for students to experience a range of modes, reducing anxiety and developing life and employability skills.

Consideration of choice in assessment mode necessitates attention to a core principle: the "*maintenance of academic standards is paramount and protected*" within national legislation (Bloxham & Boyd, 2007). So, while a student's choice of assessment mode aims to enhance equity and the potential to achieve similar outcomes, academic standards must be maintained. Therefore, students must demonstrate achievement of the same learning outcomes, whichever mode is selected.

Another key consideration is that of equivalence of workload: that each mode of assessment should carry the same workload, to ensure equity for all students. Equivalence has been debated in the literature and across the sector: tabular forms of equivalence have been criticised as an oversimplification of the issues in relation to

inclusive education, as different forms of assessment create different levels of student effort, depending on an individual's characteristics or needs. Marking criteria should demonstrate equivalence of the modes offered, through weightings, to ensure validity and equity of the assessment modes, and clarity for staff and students.

For any module where choice is offered, careful planning of opportunities for students to rehearse and discuss the choice they will select is important. Chan and Chen (2023) highlight the value of working with students as partners in assessment design, implementation, and feedback. Recent case study research at Cardiff University (in progress) suggested that students most highly value support for making the decision as to which mode to select, opportunities for question-and-answer sessions with the module lead or lecturers, and the availability of exemplars. These can be embedded in the content planning for the module, rather than being additional to it, and be made available asynchronously. Using a scheme of work ensures all those teaching on the module are clear what skills are being supported, as well as what content is covered.

To conclude this section, two additional descriptions are given of choice in assessment design. Example 6 and 7 both detail the design of assessments which employed choice in assessment mode as the summative assessment for all students on a first-cycle degree (bachelor) module. Example 6 presents a third-year engineering module in an EQF (European Qualifications Framework) level 6 degree; Example 7 a second-year module, both in UK universities.

Example 6. Implementation of choice in coursework assessment (Davies, 2024a)

This assessment explores the practical issues encountered when delivering inclusive assessments on a Year 3, EQF Level 6, 10-credit interdisciplinary engineering design module at Cardiff University (Davies, 2024a). The module focuses on the design of a multi-storey building using sustainability and net zero principles for a cohort of approximately 140 students. Students initially worked individually for six weeks before submitting an individual report, subsequently transitioning to groups of six and submitting a group written report after eleven weeks. Marking schemes were provided with UK assessment-level criteria descriptors that aligned with the content, teaching activities, and learning outcomes.

Being aware of the need to be more inclusive, existing assignments were developed into a variety of submission formats based on the original assessment marking criteria and learning outcomes, while offering improved choice and promoting diversity of assessment to suit student preferences.

Module learning outcomes — on completion of the module a student should be able to:

- Appraise structural solutions through rigorous evaluation;*
- Quantify the impact of material selection on appropriate design solutions;*
- Critically assess impact of sustainability, security, and inclusivity on conceptual design;*
- Generate realistic 3D structural solutions;*

- *Utilise individual and collaborative skills such as teamwork, mentoring, reflection, networking, and influencing;*
- *Appreciate the need to achieve radical decarbonisation at speed and scale, including societal and ethical impact.*

Davies (2024b) noted that "module LOs had to be achieved across the whole range of assessment formats being provided or be rewritten to span across the various assessment formats being offered".

Formative feedback is provided in the workshop sessions. The individual coursework assignment covers LO1 and LO4, while the group design assignment addresses LO2, LO3, LO5, and LO6.

Table 3.7.1: Excerpt of grading criteria for choice in assessment without indicating format of submission

Grade	Knowledge	Planning	Techniques	Presentation
<i>Outstanding 90-100%</i>	<i>An exceptionally comprehensive and detailed knowledge of the subject area; achieves a new level of understanding.</i>	<i>An exceptional amount was achieved through unusually ingenious and resourceful planning; highly professional; worked safely and well with colleagues.</i>	<i>Outstanding; developed new engineering principles or techniques.</i>	<i>An outstanding presentation: conveys the work and plans with exceptional clarity.</i>
<i>Excellent 80-90%</i>	<i>A thorough and detailed knowledge, beyond that required to solve the problem; significant new insights.</i>	<i>A large amount was achieved through careful and thoughtful planning; very professional; worked safely and well with colleagues.</i>	<i>Exceptional quantity and quality of work using sophisticated techniques; synthesis skills evidenced.</i>	<i>Excellent; uses creative and original means to convey the work and future plans.</i>

Students have free choice in the mode to complete and submit the assignment, and may select from a choice of flexible assessment options for their submission, such as:

- *presentations (live or recorded)*
- *written academic assignment*
- *written technical report*

- *videos*
- *storyboards*
- *multimedia or digital resources*

Students can also suggest their own formats in discussion with the module lead, to ensure they are able to meet the LOs.

The grading criteria were adapted to generalise and not specify particular submission formats, as shown in Table 7.3.1.

Example 7: Implementation of choice of written assessment — essay or presentation

At Cardiff University, 22 students in a second-year first-cycle degree module were given the choice of mode for submission for one assessment, as part of a pilot project regarding choice. Learning outcomes stated that on successful completion of the module, a student will be able to:

- *outline one key engineering policy;*
- *illustrate how this policy can be applied to contemporary practice;*
- *evaluate empirical and other data to explore the success of the policy;*

For the assignment, students had to select one engineering policy to illustrate how policies are enacted in engineering practice. The assignment could be completed as either:

- *a twenty-minute presentation (which includes five minutes of questions)*

OR

- *a written assignment, with a word limit of 2,000 words.*

Decision-making guidance was given in seminar 1. Guidance, practice, and discussion of presentations took place in seminar 2. Guidance, practice, and discussion of the written assignment took place in seminar 3.

Module evaluation data indicated an 89% satisfaction in the assessment (rising from 62% the previous year), with just one student 'not satisfied' with the assessment. Praise for the module included comments such as 'so inclusive' and 'this really helped me with my dyslexia, as I prefer to present'. The student who was 'not satisfied' was not comfortable with making a choice. Attainment data evidenced an increased attainment, from 8% fails in the previous year to none, and from nine students gaining a good mark (using the UK grading system, a 2:1 or above), to 17 students gaining a 2:1 or above.)

An excerpt of the grading criteria (demonstrating equivalence of presentation skills and written skills, and demonstration of key indicators for the top-grade boundary) is shown below:

Table 3.7.2: Excerpt of grading criteria for choice in assessment

Grade	Knowledge and understanding	Analysis and evaluation	Synthesis and critical thinking	Presentation skills	OR: Written communication skills
	Weight: 30	Weight: 30	Weight: 20	Weight: 20	Weight: 20
80-100%	<i>Shows a thorough knowledge of the principles and key concepts in the policy. Shows exceptional evidence of clear and original thought and can appropriately draw on and use a wide range of knowledge.</i>	<i>Can thoroughly describe and analyse concepts in the application of policy to practice</i>	<i>Shows exceptional evidence of clear and critical thinking. Sets out and supports their evaluation in relation to the enactment of the policy, showing awareness of competing viewpoints. Shows overall exceptional understanding and grasp of the complex interactions between policy and practice.</i>	<i>Exceptionally clear and confident delivery. Exceptional use of visual aids to supplement presentation. Excellent use of specialist vocabulary. Logical, coherent, creative and innovative presentation. Clear, consistent and accurate referencing.</i>	<i>Exceptionally clear and confident written skills. Excellent use of specialist vocabulary. Logical, coherent, creative and innovative written skills. Clear, consistent and accurate referencing.</i>

3 Key recommendations for inclusive and ethical assessments

This Section presents recommendations that practitioners may use as a checklist to support the development of fair and inclusive assessments. The recommendations are informed by both the literature and the authors' practical experience. They have been written broadly, to allow for flexibility based on institutional and national context. The authors acknowledge that some staff may not have the agency to implement all these recommendations. However, they are key aspirations when seeking to ensure all learners are assessed for what they know, and that assessment scores reflect students' genuine knowledge and skills, regardless of their diversity along other dimensions.

- Assessments are designed to address barriers to learning for traditionally excluded groups of students, applying Universal Design for Learning principles,

and anticipating the needs of potential students, to reduce the need for crisis management and individual adjustments.

- Programme learning outcomes are designed to be broad enough to enable flexibility in assessment, alternative assessments, and variety in assessment mode, within the limitations of the competence expectations of the programme.
- Assessments are mapped at a programme level, and designed to support students in timescales, flow, degrees of complexity, and variety in the modes of assessment.
- Cultural and linguistic diversity is considered in the design of assessments, in the language of texts, and in context of the assessment tasks, ensuring they are relevant, respectful, and accessible to a wide range of learners.
- Assessments follow the principles of multiple modes of action and expression where possible within quality expectations, and wherever possible choice and variety in assessment is enabled.
- Assessment briefs, criteria, and guidance follow the principles of constructive alignment that aligns teaching and learning activities with learning outcomes and assessment (Biggs & Tang, 2011) and use clear transparent language avoiding jargon, so that the requirements are clear to all students, and they understand the expectations for each grade boundary.
- Assessment design engages in collaboration and co-creation by involving students and staff in the development process, including the creation of examples, case studies, or scenarios that reflect their diverse backgrounds and lived experiences. This not only enhances relevance and engagement but also ensures that assessments are more inclusive, culturally sustaining, and representative of the student body.
- Programmes provide learning activities and formative assessments that build students' skills and understanding of the topic and task, readying them for summative assessments.
- Alternative assessments are planned from the outset, providing assessment criteria to all students, thus creating and inclusivity for all.
- There is a feedback strategy, with agreed terminology to be used in feedback. Feedback is personalised to the content and is clear and concise, relates to the assessment criteria, and is constructive and actionable.

For more inspiration and information on inclusive assessment in education, we refer the reader to the Education Development Toolkit of the Learning and teaching Academy of Cardiff University (Cardiff University,2025) and the UDL Guidelines (Cast, 2024).

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During the preparation of this work the authors did not make use of any AI tools.

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