DESIGNING GRADING & FEEDBACK RUBRICS

In the rapidly changing context of higher education, this UCD Teaching & Learning resource has been updated to give some further insights into the recent research and use of rubrics. In particular, it elaborates on how rubrics can support more transparency in assessment, one key approach to inclusive assessment. In addition, it elaborates on how generative artificial intelligence (GenAI) can be used to help design draft rubrics, and how rubrics can be used when faculty decide to either design in or design out, the use of GenAI.

Introduction to Rubrics

WHAT ARE RUBRICS?

A rubric is a tool that includes descriptions of levels of performance, to enable the grading and/or feedback of students' work. Rubrics have been described as providing '*both a cornerstone and a point of contention in the landscape of higher education evaluation'* (Gonsalves, 2023, p1). Two common definitions from the literature are:

- 'A rubric is a coherent set of criteria for students' work that includes descriptions of levels of performance quality on the criteria' (Brookhart, 2013, p4; see also Panadero et al, 2023)
- 'a document that articulates the expectation for an assignment by listing the criteria or what counts, and describing levels of quality from excellent to poor' (Reddy & Andrade, 2010, p436)

The 'difference between checklists and rating scales on the one hand and rubrics on the other is that checklists and rating scales lack descriptions of performance quality' (Brookhart, 2013, p4)

There are usually three elements to a rubric: 1) criteria, 2) standards and 3) the descriptors (Table 1). In addition, for some rubrics, there needs to be a scoring strategy to calculate the grade. *'Effective rubrics have appropriate criteria and well-written descriptions of performance*' (Brookhart, 2013, p4).

Table 1: Key elements to a rubric: 1) criteria, 2) standards and 3) the descriptors

	STANDARDS (also known as 'Levels/Scale')				
	A (text, i.e. *'Excellent'*)	**B**	**C**	**D**	**E (text, i.e. *'Fail'*)**
Criteria 1	Description in here	Description in here	Description in here	Description in here	Description in here
Criteria 2	Description in here	Description in here	Description in here	Description in here	Description in here
Criteria 3	Description in here	Description in here	Description in here	Description in here	Description in here
Criteria 4	Description in here	Description in here	Description in here	Description in here	Description in here

WHY USE RUBRICS?

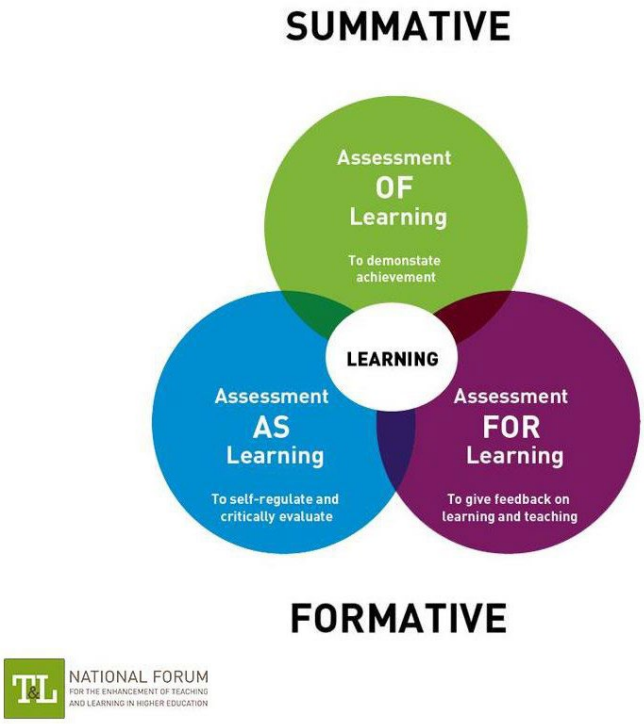
Similar to the overall purposes of assessment (National Forum, 2017, see Figure 1) assessment rubrics have three key purposes.

- **To assist staff in their grading and for accountability** (focus on summative assessment, Assessment OF Learning):
    - Supports more reliability in grading. Takes the 'guess-work' out of grading
    - Defines characteristics of a high-quality assignment

- **To give feedback on learning and teaching** (focus on formative assessment, Assessment FOR Learning):
    - A way to provide efficient feedback
    - If given at the start of a module it helps students understand expectations, supporting a more inclusive approach to feedback
    - When faculty members collaborate to develop a rubric, it promotes shared expectations of learning and grading practices
    - Enhances students' performance

- **To support students to self-regulate and critically evaluate** (focus on formative assessment, Assessment AS Learning):
    - Provides students with a way to critically evaluate their own and their peers' performance
    - Assists in planning for change in their learning (self-regulate)

Figure 1: The Purposes of Assessment (National Forum, 2017)



Recent literature on the use of rubrics has emphasised that rubrics are most successful when they are used by students to help them to self-regulate and critically evaluate (Gonsalves, 2023; Cockett & Jackson, 2018). They have been shown to enhance students' academic performance (Panadero et al, 2023). In addition for student cohorts that are less familiar with the expectations, such as international students (Gonsalves, 2023), they are best used when students are involved in their co-creation and used as part of in-class discussions (Cockett & Jackson, 2018; Gonsalves, 2023).

BENEFITS AND CHALLENGES OF RUBRICS

Benefits of rubrics

For staff:

- Rubrics help faculty to mark or grade more consistently, reliably and efficiently (Gonsalves, 2023; Campbell, 2005)
- Development of a generic scoring rubric for use across courses has implications for the programme assessment as it enables comparability across courses and semesters (Reddy & Andrade, 2010)

For students:

- Rubrics can assist in making the expectation for assessment more 'transparent'. Transparency is a key component in relation to the inclusivity of an assessment (UCD T&L, 2024)
- Supports the identification of critical issues in an assignment, thereby, reducing uncertainty and supporting more meaningful work
- Enhances students' academic performance (Panadero et al, 2023)

- Assists with immediate feedback and evaluation of their own performances
- Helps to estimate their grades prior to the submission of assignments
- Focuses their efforts so as to improve performance on subsequent assignments (Bolton, 2006)

Challenges of rubrics

- Whereas students are very positive, faculty have mixed views on them if they feel they are only for grading purposes (Cockett & Jackson, 2018), as don't always measure what they are trying to achieve (Reddy & Andrade, 2010; Cockett & Jackson, 2018).
- Faculty are more positive when they also see their potential to assist students in their learning.
- In some 'heated debates', faculty are often concerned that the transparency of rubrics will lead to more instrumental learning by students, but this does not seem to be borne out in recent studies (Panadero et al, 2023)
- The language in the rubrics may not always be understood by students (Reddy & Andrade, 2010)
- Staff/faculty training is important for use with a large cohort of grading with the same rubric (Reddy & Andrade, 2010, Boulet et al, 2004)
- Rubrics need collaboration between staff to construct in order to ensure their validity (Reddy & Andrade, 2010). They can take some time to construct.

Types of Rubrics

There are two types of rubrics: analytic and holistic. *Analytic rubrics* give more detail in the foreground, or part of the picture in detail, but may lose some of the picture. *Holistic rubrics* give focus to the whole picture.

ANALYTIC RUBRICS

An analytic rubric breaks the learning activity/task into components to:

- help students understand the detailed expectations for the task.
- provide students with more structured and targeted feedback on the task.
- provide staff with reliable grading criteria.

Analytic rubrics, developed over the last 50 years to address the issue of transparency and accountability to students, are more commonly used when students are unfamiliar with the subject/task. They describe work on each criterion separately, resemble a matrix, and are often used with a scoring weighting to provide the grade (Table 2). They can also be used just for feedback, without scoring.

Table 2: Analytic Rubric: Structure and its Advantages and Disadvantages

	A Excellent	B V. Good	C Good	D Satisfactory	E Fail
Criteria 1	Description in here	Description in here	Description in here	Description in here	Description in here
Criteria 2	Description in here	Description in here	Description in here	Description in here	Description in here
Criteria 3	Description in here	Description in here	Description in here	Description in here	Description in here

Advantages

- Increase interrater reliability.
- Transparency (detailed feedback to students)
- Objectivity

Disadvantages

- Validity: No single correct answer in complex topics
- The sum of the parts is not always the whole.
- Time consuming

HOLISTIC RUBRICS

A holistic rubric provides an overall description of the learning activity/task. It

- Provides students with broader expectations for the task, to allow for a range of interpretations.
- Provides students with overarching feedback.
- Provides staff with criteria to allow for more complex student responses (validity).

Holistic rubrics are more commonly used for more advanced student learning. There is a challenge with analytic rubrics as staff often assess work holistically (I know an 'A' when I see one) and as Sadler (2009) describes '*A work which the teacher would rate as 'brilliant' overall may not be outstanding on all the pre-set criteria. The whole actually amounts to more than the sum of its parts*'. Holistic rubrics can address this to some extent. 'Holistic rubrics describe the work by applying all the criteria at the same time and enabling an overall judgment about the quality of the work '(Brookhart, 2013, p6) (e.g. characteristics of an 'excellent' research paper).

Table 3: Holistic Rubric: Structure and its advantages and disadvantages

A Excellent	B V. Good	C Good	D Satisfactory	E Fail
Rich description in here, multiple criteria allowing wider interpretation.	Rich description in here, multiple criteria allowing wider interpretation.	Rich description in here, multiple criteria allowing wider interpretation.	Rich description in here, multiple criteria allowing wider interpretation.	Rich description in here, multiple criteria allowing wider interpretation.

Advantages

- Encourages intuitive expert judgment.
- Validity is enhanced.
- When used with support, students can develop the skill of self-judgment (become expert judges).

Disadvantages

- Reliability can be weaker.
- Needs more expert judgement.
- Transparency can be harder to achieve.

Rubrics and Generative Artificial Intelligence

There is a growing debate on the most effective and ethical approach to the use of generative artificial intelligence (AI) in higher education (AAIN, 2023).

USING AI TO DESIGN A RUBRIC

In the current debate about the use of generative AI, one promising use case is its capacity to create a first draft of rubrics, which can be further adapted for use in your modules. As in the use of any AI, you should be aware of the ethical challenges associated with its use. If you are interested in experimenting with AI to design a draft rubric, you might start by using Google Bard, as it is available for use by UCD staff. *'Google Bard is an AI-powered chatbot tool designed by Google to simulate human conversations using natural language processing and machine learning'* (UCD IT Services, 2024; link includes access to Bard). Some YouTube instructions on developing rubrics with other AI tools are available in the table below.

Creating a marking rubric (using ChatGPT) (King's Academy, London)

The video explores the process of creating a rubric from scratch when none exists using ChatGPT and careful prompt engineering. It emphasises that many institutions have different approaches to rubrics. The speaker outlines a scenario in which students are working on an assignment without a rubric and explains how they've interpreted the assignment brief to establish grading bands and criteria.

ChatGPT for Creating Rubrics (AI 4 Teachers, Jen Twidale)
This video, for second-level school in the USA, is a tutorial for teachers on how to generate rubrics using ChatGPT. This video will give teachers a step-by-step guide how to generate rubrics using achievement standards. Additionally, it demonstrates how to generate criteria for an assessment in any subject area that can then be used to generate a rubric.

Some ways that AI is being used in learning and assessment include designing in (using and acknowledging generative AI to enhance student learning) and designing out, to minimise the use of generative AI (discouraging its use in student learning). (Extract from UCD T&L, Quick Guide on Generative Artificial Intelligence in Learning and Assessment, 2024)

RUBRICS TO MINIMISE STUDENTS USE OF GENERATIVE AI (DESIGNING OUT AI)

If you would like to minimise students' use of AI, a well-designed rubric can give clear expectations that the assessment requires students' own thoughts (more personalised), and/or more creativity, and/or more higher order thinking. These designs can therefore reduce students' need, or temptation, to use generative AI.

Scott (2024) gives a very helpful overview of some rubrics that support this type of learning. He gives some simple examples that could be modified for your context, such as an Annotated Bibliography Rubric, Argument Paper Rubric, Book Report Rubric, Book Review Rubric, Essay Exam Rubric, Exploratory Paper Rubric, Research Paper. See one of his examples below (Table 5).

Table 4. Annotated Bibliography Rubric (Scott, 2024)

1. Citation (20 Points) • Correct Citation Format (10 Points): Each entry should begin with a citation in the required style (APA, MLA, etc.). • Accuracy of Citation Information (10 Points): Ensure that all citation information is accurate and complete, including author(s), title, publisher, and date.
2. Summary of Source (30 Points) • Comprehensiveness (15 Points): Provide a comprehensive summary of the source's content, capturing the main arguments, findings, or themes. • Clarity (15 Points): The summary should be clear, concise, and effectively communicate the source's content.
3. Evaluation of Source (30 Points) • Reliability and Credibility (10 Points): Evaluate the reliability and credibility of the source, considering factors like the author's credentials, the publication where it appeared, and the source's citation impact. • Relevance to Research Topic (10 Points): Discuss the relevance of the source to your research topic. How does it contribute to your understanding of the topic?

• Critical Analysis (10 Points): Critically analyze the source's content. Discuss its strengths, weaknesses, biases, or other notable features.
4. Reflection on Use (20 Points) • Application to Your Research (10 Points): Reflect on how you might use this source in your research. What specific insights or information does it provide that will be useful? • Unique Insight or Perspective (10 Points): Reflect on the unique insights or perspectives the source offers. Does it challenge common assumptions, present new data, or propose novel theories?
Total Possible Points: 100 Rubric Evaluation Key: • 90-100 points: A • 80-89 points: B • 70-79 points: C • 60-69 points: D • Below 60 points: F This rubric is designed to evaluate students' ability to create a comprehensive annotated bibliography that not only summarizes the content of each source but also critically evaluates its credibility, relevance, and potential contribution to their research. It encourages independent thought, critical analysis, and personal engagement with each source, discouraging the use of AI-generated content.

RUBRICS TO EVALUATE STUDENTS' USE OF AI (DESIGNING IN AI)

In some situations, you may decide that you want students to become familiar with the ethical use and the potential for generative AI in their learning, i.e. designing in AI. In these situations, you want students to be transparent as to how and where they used GenAI in their learning and assessment, and critiquing its advantages and disadvantages. Therefore, you may require rubrics that support you in evaluating and giving feedback on this approach. This is a new and growing area and there are limited example rubrics, as of yet in this area. However, there are some broad concepts that have the potential to be developed into a rubric. For example, the University of British Columbia (2024) set out a simple self-assessment that could be adapted into a rubric, which explores the extent to which a text can be analysed for its use of AI (see Table 6).

Table 5: Self-Assessment Rubric for AI in Text (University of British Columbia, 2024)

Accuracy	Assess the accuracy and reliability of the AI response and determine whether the information provided is correct and/or factual information.
Relevance	Evaluate the extent to which the AI response directly addresses the main points or concerns raised in the question or prompt.

Clarity and Coherence	Consider the clarity, organization, and coherence of the AI response to convey information effectively.
Completeness	Evaluate whether the AI response covers all essential aspects or components of the topic, and whether it omits crucial details.
Contextual Understanding	Assess the AI's ability to grasp the context of the question or prompt and whether it provides a response that demonstrates understanding of the specific situation or background information.
Creativity and Originality	Assess the AI response for any unique or creative elements. Does it provide novel insights or alternative perspectives? Does it go beyond generic or predictable responses?
Bias	Check for diversity of sources to address ableist thinking, gender bias, and racial bias. Look for emotionally charged language, exaggerations, or generalizations that sway opinion. Pay attention to what is included and omitted in the information.
Sources and Citations	Check the sources and citations used in the content. Assess whether they are credible, reputable, unbiased, and represent a diversity of viewpoints.

When assessing students ability to reflect on the quality of the generative AI output, this resource from Newcastle University (2024) highlights some key questions to critically reflect on and could be developed into a rubric for "Critically Reflecting on AI'.

Programme Approaches to Using Rubrics

WHY USE A PROGRAMME APPROACH?

Using a rubric across a programme can assist in enhancing consistency across a programme and can help '*identification of both gaps in students' knowledge and the development of their knowledge*' (Cockett & Jackson, 2018, p9). Use rubrics throughout the programme/major, to build students' skills to self-assess and peer review, their own or other assignments/tasks/exemplars. This helps them to internalise the expectations for their learning. More general rubrics that can be used across different modules can be useful to give some coherence to student learning. They can enable comparability across modules and semesters (Reddy & Andrade, 2010; Crotwell Timmerman et al 2011).

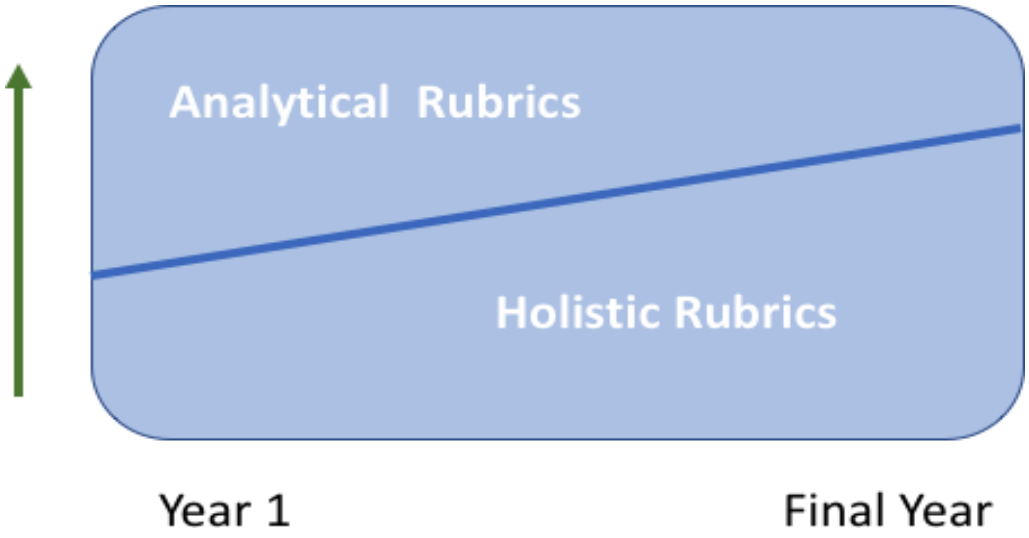
WHICH TYPES TO USE?

It is important to consider which rubrics are most appropriate at different points in the programme/major. Consider how you could use these approaches both horizontally (in the same stage/level) and vertically throughout your programme.

As complex assessments, such as dissertations, are often toward the end of a programme, it might be worth considering more holistic rubrics at this point. However, early work on complex learning can also benefit from this approach. Topics that require more creativity benefit from holistic rubrics. Students who are new to particular tasks, often earlier in a programme, may benefit from the structure provided by analytic rubrics but may benefit from the freedom associated with holistic rubrics at a later stage.

Brightspace allows easy sharing between UCD module coordinators of rubrics used in their modules. This helps support the familiarity of a rubric across a programme. For example, the increased expectations of more sophisticated critical thinking across a programme, using a critical thinking rubric, such as the Value Critical Thinking Rubric.

Figure 2: Use of Rubrics across a Programme/Major



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RESOURCES

Online rubric design tools

- Rubistar – free http://rubistar.4teachers.org/
- Various online rubric tools: www.teach-nology.com/web_tools/rubrics/

EXEMPLAR RUBRICS

www.aacu.org/value/index.cfm
http://manoa.hawaii.edu/assessment/resources/rubricbank.htm

GUIDES TO DESIGNING RUBRICS

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Practical Guideline for Designing Rubrics, University of Queensland Australia, 2018. https://elearning.uq.edu.au/guides/turnitin/practical-guidelines-designing-rubrics

Appendix 1: Steps to Develop a Rubric (including its set-up in Brightspace)

See also how to set this up in the Brightspace VLE

Step 1: What kind of rubric do you want to create: analytic or holistic?

Consider questions such as:

- Do your students need more support and direction (early years or early stage in the subject)? In this case the analytic rubrics could be useful for them.
- Are you supporting students to think 'outside the box', be more creative and or supporting more complex learning? In this context you could consider a holistic rubric that allows give some direction but allows different good answers

Step 2: Identify the criteria you want to assess

Criteria are the properties or characteristics by which to judge the quality of the assessment task. The criteria do not offer anything, or make any assumptions about, actual quality (James Cook University, 2018). Explore existing rubrics that may also use these criteria. See the resource list for some examples.

Criteria are intended to help make it clear to students what factors will be considered when marking assessments. Criteria should be:

- Linked to learning objectives/outcomes.

- Observable: Describes a quality that can be perceived (seen or heard usually)
- Descripting qualities: (critical appraisal, structure and organisation, use of writing conventions) not assessment components (introduction, body, conclusion).
- Complete: If "creativity" or "spelling and punctuation" are considered important they should be included in the criteria.
- Distinct: Each criterion identifies a separate aspect of the learning objectives being assessed.

To be effective, criteria should be manageable in number. Criteria should include significant elements of the task but remain feasible for both students and markers.

Extract from Practical Guideline for Designing Rubrics, University of Queensland Australia, 2018. https://elearning.uq.edu.au/guides/turnitin/practical-guidelines-designing-rubrics

Step 3: Identify the name and number of standards (described as 'Levels' in Brightspace)

These can be:

- Numerical (i.e. 1-5 or actual points value) or
- Qualitative i.e.
- Exemplary, acceptable, unacceptable
- Distinguished, proficient, basic, unacceptable
- Excellent, Good, Fair, Poor
- Novice, apprentice, expert
- Analytic Rubrics
    - Decide on the name and number of standards (levels). Aim for an even number (4 or 6) of standards (levels) because when an odd number is used, the middle tends to become the "catch-all" category.
- Holistic Rubrics:
    - Decide on the names and number of standards (levels).

Step 4: Develop the descriptors

Use language that the student will understand. If you have the opportunity, it is useful to do this with your current and/or previous student cohorts, so they can understand.

- Start by considering what is an 'excellent' example (standard) you could expect for this criterion.
- Next describe an unacceptable/fail (standard) for this criterion
- Then work out the descriptions of middle (standard(s)) for this criterion.

Analytic Rubrics

For each criterion describe knowledge, skills, and competencies that represent each cell in the standards.

Holistic Rubrics

- Under each standard (i.e. Excellent-Poor) consider all criteria for this standard

simultaneously. Try to give rich descriptions of this standard to allow for students to demonstrate different learning.

Step 5: Apply a scoring strategy, if appropriate

Rubrics can be text only and/or have a numerical scoring. Consider the weighting required, where relevant.

Step 6: Review and revise

Share the rubric with colleagues, and students, test and review it.

For Brightspace guidance on setting up a rubric, see:
https://community.d2l.com/brightspace/kb/articles/5795-create-a-rubric-using-the-rubrics-tool