

Using Rubrics in Student Assessment

A rubric is a guide to assist the marker to make consistent and reliable judgments about the quality of student work.

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1. What is a rubric?

A rubric is a guide to assist the marker to make consistent and reliable judgments about the quality of student work. They also can be used to provide feedback to students about the quality of their work and how they might improve.

Rubrics are commonly presented in the form of a matrix that includes:

- **Marking criteria** – the elements that the marker will consider when judging a piece of work (such as quality of argument, research, technical aspects, etc)
- **Grading standards** – descriptive statements about the level of each criteria, often expressed on a scale (such as High Distinction, Distinction, Credit, Pass, Fail, or a number score).

Rubrics may vary in complexity from simple tables to very detailed matrices that provide description of each dimension of quality and characterise each level of accomplishment.

Rubrics can be adapted to grade many different types of assignments including essays, reports,, oral presentations, group work, research papers and many more.

Above all, rubrics should be simple and clear so that students can readily understand and engage with them.

2. Why use rubrics?

Rubrics bring transparency to assessment and marking for both staff and students. Clear criteria and standards:

- Enable markers to form a shared understanding about how grades should be awarded
- Explicitly communicate to students what is valued in the completion of a task
- Help to clarify and articulate industry or discipline standards
- Provide students with more detailed understanding of how to improve
- Increase efficiency and consistency of marking and moderation processes.

Rubrics are useful in all three stages of the assessment process.

Before assessment occurs	Rubrics have the dual purposes: for students it unpacks what is required in the assessment task. It provides important cues about the expected elements and approaches. For the marking team , the rubric provides an opportunity to unpack and moderate understandings about criteria and standards before marking commences
During the assessment process	Rubrics provide markers with a detailed framework for consistently judging individual student submissions. They also provide prompts to markers for the provision of systematic feedback on student performance against each criterion

After assessment occurs	Rubrics provide important information to students about the quality of their performance against the specified criteria. Rubrics allow students to diagnose their strengths and weaknesses and where they can improve. They also provide transparency to students about standards, and how grades are derived.
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3. When to use rubrics?

All assessment types can be marked using rubrics. However, caution should be taken when deciding the form the rubric should take. Detailed atomized rubrics may trivialise the components of the assessment task and can skew the final assignment grade. A staff member explains:

I thought I had allowed for all possibilities when I set up the marking criteria. However, when I collated the result from each criteria I was surprised the student had achieved a credit, when in fact they could not even solve the problem presented.

To overcome the difficulties associated with overly-detailed rubrics and to help in the construction of standards researchers have proposed frameworks to assist in the design effective rubrics. These frameworks help us to see the range of potential student responses to a task – from very basic responses to highly sophisticated ones. Bloom’s Taxonomy is one tool that proposes a hierarchy of assessment tasks, SOLO taxonomy is another which focuses on criteria and standards. Perry (1999) presents a third option based on levels of moral and ethical reasoning. Orrell (2010) presents a generic assessment rubric as a tool to design a unit specific rubric.

Table 1: Modified Structure of the Observed Learning Outcome (SOLO) taxonomy (based on Biggs & Tang, 2007, p. 197)

Descriptive knowledge	Procedural knowledge	Level name
Memorise, identify, recite	Count, match, order	Uni-structural
Describe, classify	Compute, illustrate	Multi-structural
Compare and contrast, explain, argue, analyse	Apply, construct, translate, solve near problem, predict within same domain	Relational
Theorise, hypothesise, generalise	Reflect and improve, invent, create, solve unseen problems, predict to unknown domain	Extended Abstract

4. Types of rubrics

There are two kinds of rubrics in common usage – analytic and holistic:

Analytic rubrics are used when making judgements about each criteria separately and then combining each judgement to make a decision on the quality of the response.

Holistic rubrics – used when making an overall or holistic judgement about the quality of the response.

4.1 Analytic rubrics

Analytic rubrics are the most common kind of rubric. They are used when the judgment of the assessment task can be partitioned into discrete elements or criteria each of which are assessed individually. The results for each criterion are then aggregated to provide an overall grade for the task. In some instances each criteria are weighted relative to their importance to achieving the learning outcomes for the assessment task.

A simple analytical rubric can be seen below. This example contains criteria but no standards. Student performance for each criterion is indicated along a continuum from High Distinction to Fail.

Assignment 1 – Online Discussion – 10%					
Criteria	HD	D	Cr	P	F
The relevance and coherence of your contributions in relation to the questions posed.					
The extent to which your contributions have contributed to the online debate and expanded or commented on the views of other contributors.					
Evidence that your comments are informed, where appropriate, by the texts and resources in unit, and other scholarly commentary.					
The timeliness of contributions in relation to the unit schedule.					

This rubric provides useful descriptive information relative to the criteria but does not describe standards of performance beyond a letter symbol. This may be acceptable in some cases (particularly for minor or relatively simple assessment tasks) but will be insufficient for more substantial assessment items.

The following example is a more complex analytic rubric which contains both criteria and standards (adapted from Lombardi, 2008). A description is provided for each standard relative to each criterion along with the percentage weighting. This rubric provides more guidance to students about expected

standard for each element of the task. From this type of rubric students gain insight into how they might, in practical terms, improve their performance.

Analytic rubric for student participation in group work

Criteria	Level of Student Performance			
	D/HD	Credit	Pass	Fail
Workload 20%	Did a full share of the work – or more; knows what needs to be done and does it; volunteers to help others.	Did an equal share of the work; does work when asked; works hard most of the time.	Did almost as much work as others; seldom asks for help.	Did less work than others; doesn't get caught up after absence; doesn't ask for help.
Getting organised 10%	Took the initiative proposing meeting times and getting group organised.	Worked agreeably with partner(s) concerning times and places to meet.	Could be coaxed into meeting with other partner(s).	Did not meet partner(s) at agreed times and places.
Participation in discussions 30%	Provided many good ideas for the unit development; inspired others; clearly communicated desires, ideas, personal needs, and feelings.	Participated in discussions; shared feelings and thoughts.	Listened mainly; on some occasions, made suggestions.	Seemed bored with conversations about the unit; rarely spoke up, and ideas were off the mark.
Meeting deadlines 10%	Completed assigned work ahead of time.	Completed assigned work on time.	Needed some reminding; work was late but it didn't impact grade.	Needed much reminding; work was late and it did impact quality of work or grade.
Showing up for meetings Score 10%	Showed up for meetings punctually, sometimes ahead of time.	Showed up for meetings on time.	Showed up late, but it wasn't a big problem for completing work.	No show or extremely late; feeble or no excuse offered.
Providing Feedback Score 10%	Habitually provides dignified, clear, and respectful feedback.	Gave feedback that did not offend.	Provided some feedback; sometimes hurt feelings of others with feedback or made irrelevant comments.	Was openly rude when giving feedback.
Receiving Feedback Score 10%	Graciously accepted feedback.	Accepted feedback.	Reluctantly accepted feedback.	Refused to listen to feedback.

The second example below is a rubric from mathematical problem solving. It also provides guidance to students on what is expected and was used significantly in the pre-marking process with large group of tutors.

Analytic rubric for mathematical problem solving and reporting

Criteria	High Distinction	Distinction	Credit	Pass	Fail
Definition of the explicitness in problem description Weighting 5%	Aim outlines the purpose of the investigation specifically, explicitly, and relevantly.	Aim outlines the purpose of the investigation with minor lapse in explicitness, specificity or relevance.	Aim outlines the purpose of the investigation with some lapse in explicitness, specificity or relevance.	Aim outlines the purpose of the investigation with substantial lapse in explicitness, specificity or relevance.	Aim not given or does not satisfactorily outline the purpose of the investigation.
Clarity and correctness of method Weighting 35%	Innovative and correct method of solution to problem.	Above average and substantially correct method of solution to the problem.	Average and mostly correct and complete method of solution to the problem.	Sound but partially incomplete or incorrect method of solution to problem.	Solution to problem not described, or not correct.
Correctness of mathematics Weighting 40%	All calculations/algebra/graphs complete and correct.	Only minor errors or omissions in calculations/algebra/graphs.	Calculations/algebra/graphs partially correct or complete.	Calculations/algebra/graphs half correct or complete.	Calculations/algebra/graphs incorrect or not present.
Logical and connected conclusion Weighting 10%	Conclusion is explicit, logically and mathematically correct and consistent with the aim, method and results.	Conclusion has minor lapse in explicitness, logical and mathematical correctness or consistency with the aim, method and results.	Conclusion has some lapse in explicitness, logical and mathematical correctness or consistency with the aim, method and results.	Conclusion has substantial lapse in explicitness, logical and mathematical correctness or consistency with the aim, method and results.	Conclusion is not present or not explicit, not logically and mathematically correct, or not consistent with the aim, method and results.
Written mathematical communication Weighting 10%	Written expression of high level of achievement using sophisticated mathematical language.	Written expression of high level of achievement with some use of appropriate mathematical language.	Written expression of average level with some use of appropriate mathematical language.	Written expression sound with little use of appropriate mathematical language.	Written expression not included or very poor.

4.2 Holistic rubrics

Holistic rubrics are used when it is more difficult or not desirable to partition a task into separate criteria. For example, in some tasks, the criteria are intertwined and overlap too much. This often occurs in complex, extended abstract or creative tasks where there are a variety of ways to go about the task and the task cannot easily be partitioned into components. In such cases we make holistic judgments about the work, rather than analytical judgments based on individual criteria.

In holistic rubrics, the standards are articulated by a detailed descriptive statement, as follows:

Holistic rubric for multi-media project

Grade	Description of Grade
High Distinction	The project is realised to a very high professional standard. Technically it is fully functional and meets all specifications. It demonstrates high levels of creativity and innovation both in terms of its function and usability. It has a high level of aesthetic appeal. It has been carefully quality controlled to ensure full functionality and that no errors are evident. This product has real 'wow' factor.
Distinction	The project is realised to a high professional standard, with a good level of function and meets most specifications. It demonstrates occasional levels of creativity and innovation and is attractive and aesthetically engaging. While there may be a few errors, these are of a minor nature. Generally the product would be well-regarded by industry standards.
Credit	The project is realised to an acceptable professional standard with generally adequate levels of function and generally meets specifications, although there are a number of problems evident. There is some evidence of creativity and innovation although these are not sustained or notable. Further experimentation and testing could have improved this product considerably. Generally it would not be well regarded by industry and would need more work before release, but still shows good developing competence.
Pass	The project was completed, but to a less than acceptable industry standard. Functionality was problematic and often did not meet required specifications. There is little evidence of creativity or innovation in the project. Numerous errors crept into the work. Significant further work would be required to bring this up to industry standards, but overall it demonstrates sufficient competence to merit a passing grade.
Fail	The project is incomplete and/or work well below industry standards. Functionality is poor or absent. Failure to meet project specifications. Numerous errors. Little or no innovation or aesthetic appeal. A large volume of work required to bring the project up to industry standards. Insufficient effort or competence demonstrated to achieve a passing grade.

Holistic rubric for essay

Grade	Description of Grade
High Distinction	This essay commands attention because of its insightful development and mature style. The response to the text is convincing and elaborated upon with well-chosen and correctly referenced examples. It is written with aptly chosen words, effectively constructed sentences and a keen observation of the conventions of written English.
Distinction	This essay provides a thoughtful and well reasoned response to the text with appropriate and correctly referenced examples. The sentences are constructed and words chosen to communicate clearly to the reader. The conventions of written English have been well observed.
Credit	This essay provides a competently reasoned response to the text with some appropriate and mostly correctly referenced examples. The sentence structure and choice of words have sufficient precision to communicate the message to the reader. The conventions of written English have been observed.
Pass	This essay is satisfactory. It provides an adequate response to the text with sufficient examples and adequate reasoning. The examples are mostly adequately referenced. The sentence structure and choice of words communicates adequately to the reader. The conventions of written English need to be observed more closely.
Fail	This essay fails to respond appropriately to the text. The responses are simplistic or incoherent and suggest some significant misunderstanding of the text. The writing lacks appropriate structure and has a pattern of errors in word choice with poor grammatical expression. Correctly referenced examples are absent or poorly presented. More attention needs to be paid to the conventions of written English.

Holistic rubric for online participation

Grade	Descriptor of Grade
High Distinction	In addition to qualities of a distinction grade, contributions at this level demonstrate a sophisticated synthesis of theoretical understanding and reflection on practice, as well as a high level collegiality in engaging with others.
Distinction	<ul style="list-style-type: none"> • Contribution to the discussion is relevant, succinct and timely. • Contributions demonstrate deep engagement with issues and recognition and evaluation of differing perspectives. • Contributions are informed by significant reading and critical reflection on own professional practice. • Contributions advance and extend the debate and demonstrate high level of online communication skills
Credit	<ul style="list-style-type: none"> • Contribution to the discussion is relevant, succinct and timely. • Contributions demonstrate a good understanding of basic issues and own professional practice • Contributions are informed by reading and reflection and not only personal opinion. <p>Clear efforts are evident to engage with others' views and to advance the debate in constructive ways.</p>

Grade	Descriptor of Grade
Pass	<ul style="list-style-type: none"> • Some contribution to discussion is evident but may also be untimely. • Contributions make some points that demonstrate basic understanding but do not generally advance the debate. • Contributions suggest only minimal engagement with literature and tend to reflect only personal opinion.
Fail	Fails to make necessary contributions and/or contributions are very late. Comments are generally not scholarly and do not contribute to the debate.

5. What kind of rubric is right for your assessment task?

5.1 Pros and cons of analytic and holistic rubrics

The advantages and disadvantages of each type of rubric depend on the situation they are used in and how they are used.

	Analytic	Holistic
Pros	<ul style="list-style-type: none"> • Useful when task is composed of discrete skills or knowledge • Provides direct advice on set criteria • Shows students specific strengths and weaknesses • Easier to moderate marking in large classes with large number of markers • Can take more time to develop. 	<ul style="list-style-type: none"> • Useful for tasks that contain inter-related skills and knowledge • Useful for tasks that are holistic in nature e.g. works of art, creative writing, engineering design, essays, projects • Can focus on higher order, inter-related knowledge and skills • May be more authentic in nature • Can be quicker to develop.
Cons	<ul style="list-style-type: none"> • Can over-partition a task so that the result is biased towards small skills rather than the overall achievement • Can produce a biased results if criteria are not carefully selected • Can focus on detailed, lower level skills rather than deeper understanding and knowledge. 	<ul style="list-style-type: none"> • Can be more difficult to moderate in large classes with large number of markers • May not provide the detailed feedback students expect • Can produce a biased result if markers are not clear on what is required.

5.2 Two known issues with analytic rubrics

Two respected researchers of assessment in higher education have warned teachers about taking rubrics a step too far.

Sadler (2010) asks us to be cautious about using criteria in rubrics that do not contribute to achievement of learning outcomes. He claims that these lead to a mistrust in the integrity of the grade. Typically

such criteria include technical requirements that are aimed to change student behaviours or improve learning. He lists the following practices that can undermine achievement and misrepresent a grade.

- Marks awarded for attendance at, or participation in, lectures, a minimum proportion of classes, group discussions, laboratory sessions or e-learning chat rooms
- Marks awarded for completion of specified activities, including practice exercises, log books, reflective journals, posts to online forums and discussion boards without reference to learning outcomes
- Marks awarded for inclusion of a specified component in a work submitted (eg 'at least 20 references')
- Marks awarded for completion of interim drafts or project stages
- Marks deducted for late submission of a response to an assessment task
- Marks deducted non-conformity with regulative specifications, such as maximum word length (for an essay)
- Marks deducted for plagiarism.

Further details on this issue are available at UQ Assessment Brief on [Fidelity as a precondition for integrity in grading academic achievement](#) (2011).

Rust's (2011) concern lies with the automatic use of numbers or marks to determine achievement. He proposes that because of the way numbers are presented for very different assessment types and then calculated and recalculated to produce a final grade, a biased result may be obtained. This result may obscure the actual student's performance. He presents seven arguments against traditional practices in the use of numbers as the basis of making assessment judgements.

Further details on this issue are available at UQ Assessment Brief on [The unscholarly use of numbers in our assessment practices: What will make us change?](#) (2011).

Caution should be used in developing rubrics – complex mathematical formulas or fine grained analytic rubrics can bias a grade resulting in a final judgment which runs counter expectations.

6. Collaborative rubric construction

6.1 Whole-of-course approach to rubric development

The Australian Government, professions and the wider community increasingly require assurance of outcomes standards in university award programs. In particular, the Australian Qualifications Framework (AQF) specifies generic learning outcomes for courses at each AQF level. More and more course coordinators are using rubrics to define the standard of specific generic skills.

These **course rubrics** are different from the marking rubrics described above. Oliver (2012)¹ presents an array of these rubrics and states that these rubrics:

- communicate to graduates what is expected by or even beyond graduation
- enable those teaching in the course to reach a shared understanding of the standards expected of students and graduates
- can act as a broad guide to the standards expected in specific assessment tasks throughout the degree.

Such rubrics encourage a whole-of-course approach to assessment and the articulations of standards between units.

6.2 Moderation of rubrics

Moderation of rubrics is part of the wider moderation of assessment which seeks to ensure that procedures and practices are valid and reliable and are aligned with its stated standards, principles and ethos. Moderation of rubrics is implemented at three stages within the assessment process:

- Designing phase: judging the appropriateness of the associated rubric before release to students
- Marking phase: ensuring that all markers have shared understanding of rubric criteria and standard before marking commences
- Awarding of grades: confirm that the grades are correct, fair and consistent before release to students.

In the designing phase the designer and moderator (the academic colleagues designated to review the unit assessment) will:

- ensure the rubric fits with unit learning outcomes, focuses on higher-order learning, uses appropriate marking criteria and standards
- ensure that the rubric fits with other rubrics to determine the appropriateness in relation to progressive learning during the course.

In the marking phase, the unit assessors will ensure the markers have shared understanding of the rubric through (as in SCU Assessment Policy):

- discussion within the marking team about a sample of submitted papers prior to the commencement of marking
- members of marking team are paired – each member marking a sample of the other's papers.

In the awarding of grades, the unit assessors will again ensure that the rubric has been used consistently in the judging of final grades through (as in SCU Assessment Policy):

- sampling by Unit Assessor of marked scripts across each band (i.e. HD, D, etc.) to ensure consistency with adjustment as necessary

1 Oliver, B. (2012) *Assuring graduate outcomes*. Available from <http://boliver.ning.com/page/standards-rubrics-1>

- sampling by Unit Assessor of marked scripts that are on the border between grades with adjustment as necessary
- provision to markers of sample responses for short answer questions; and/or
- double blind marking of all submitted papers followed by a discussion where both markers reach agreement on grade to be awarded (appropriate for honours or higher degree marking).

7. Examples of rubrics

A good rubric is one that communicates clearly to students and the marking team about the criteria upon which judgments should be made, and the levels of achievement or standards. They are important teaching tools that provide transparency to assessment. Rubrics naturally differ according to the nature of the assessment task and its particular requirements and emphases. We provide a few examples to guide the development of your rubrics. There are many websites with examples. As always, one needs to use discernment as some rubrics may be overly complex.

7.1 Collections of rubrics

Rubrics based on Research Skills Framework <http://www.adelaide.edu.au/clpd/rsd/framework/>

- University of Adelaide <http://www.adelaide.edu.au/erga/rubrics/>
- Carnegie Mellon University <http://www.cmu.edu/teaching/designteach/teach/rubrics.html>

7.2 Specific rubrics

Rubric type	Example	URL
Essay rubrics	First year generic essay	http://www.teaching-learning.utas.edu.au/assessment/criteria-sheets
	First year paper and critical reading assessment	http://a-s.clayton.edu/ksweeney1/grading_rubric.htm
	Holistic rubric for a History essay	http://faculty.uncfsu.edu/jibrooks/frms/rubricessay.htm
Class participation rubric		http://faculty.uncfsu.edu/jibrooks/frms/rubricpart.htm
Research paper rubric		http://faculty.uncfsu.edu/jibrooks/frms/rubricrsch.htm
Annotated bibliography rubric		http://faculty.uncfsu.edu/jibrooks/frms/rubricannbib.htm

8. Rubric Quality Checklist

The following checklist has been adapted from the one provided by Stevens and Levi (2005, p. 94) to assist with refining and polishing the details of your rubric. It is a checklist for rubric design and a useful tool as rubrics are likely to develop and improve over time as they are used and reflected upon by both teaching staff and students.

Rubric Part	Questions to consider	Yes	No
The marking criteria	<p>Does each criterion cover important parts of the final student performance?</p> <p>Do the criteria capture some key themes in your teaching?</p> <p>Are the criteria clear?</p> <p>Are the criteria distinctly different from each other?</p>		
Descriptions of levels of performance (standards)	<p>Do the descriptions match the criteria?</p> <p>Are the descriptions clear and different from each other?</p> <p>If you used points, is there a clear basis for assigning points for each criteria?</p> <p>If using a three-to-five level rubric, are the descriptions appropriately and equally weighted across the three-to-five levels?</p>		
The levels	<p>Do the descriptors under each level truly represent that level of performance?</p> <p>If not using traditional grade labels (P, C, D, HD), are the scale labels encouraging and still quite informative?</p> <p>Does the rubric have a reasonable number of levels for the stage of the student and the complexity of the assignment?</p>		
The overall rubric	<p>Does the rubric clearly connect to the learning outcomes that it is designed to measure?</p> <p>Can the rubric be understood by external audiences (avoids jargon and technical language)?</p> <p>Does it reflect teachable skills?</p> <p>Does the rubric reward or penalise students based on skills unrelated to the outcome being measure?</p>		
Fairness and sensibility	<p>Is the rubric fair to all students and free of bias?</p> <p>Will the rubric be useful for students as performance feedback?</p> <p>Does the rubric make sense to the reader?</p>		

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