Report on Assessment & Grading

Yale-NUS College

Dean of Faculty Office and Teaching & Learning Center

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I. Executive Summary

In late April 2015, the current faculty body of Yale-NUS College was brought together for a three-day workshop to discuss and give feedback about topics related to the ongoing curriculum review, including assessment and grading. As part of the first phase of the common curriculum review, working groups were convened to address important issues such as assessment and grading. Subsequently, Senior Leadership asked the Dean of Faculty and Teaching & Learning Center teams to create a report based on findings of the workshop's five working groups for assessment and grading as well as from the common curriculum review assessment and grading working group. Please see the following documents: *Appendix A: Yale-NUS Common Curriculum Review Charge Letter for Working Group on Course Alignment in Assessment and Grading* and *Appendix B: Final Report for Working Group on Alignment of Assessment & Grading.*

During the faculty workshop, five working groups of faculty members and administrators met for three, 90-minute sessions over a three-day period to discuss one of the following topics related to assessment and grading: 1) assessment (when and why); 2) formative assessment; 3) summative assessment; 4) rubrics; and 5) communication concerning assessment. The Dean of Faculty, Teaching, Learning & Advising Committee Chair, and three Vice Rectors facilitated the working group sessions, with over 90% of Yale-NUS faculty members in participation. After the workshop, facilitators submitted session notes to the Dean of Faculty and Teaching & Learning Center teams.

Together the two teams have created this comprehensive report on assessment and grading. The report will be circulated to the faculty members in August 2015 for discussion and input. It is the hope of the authors that this report will inform and facilitate robust discussions about assessment and grading among the College's various stakeholders, including the Teaching & Learning Centre, the Teaching, Learning and Advising Committee and the College's faculty body. Ultimately, the College's Teaching & Learning Centre team will take ownership of the report.

The purpose of this document is to generate conversations and thinking about these topics, with a long-term aim of creating a strong culture of thoughtful, responsible assessment and grading at the College, rather than to dictate any particular policy or approach at this time**.**

II. Best Practices in Formative Assessment

A. Definition of Formative Assessment

Formative assessment refers to situations in which students receive feedback on their work that is not directly related to the formal grades they receive. While formative assessment may or may not come with a grade, it is done to encourage and assess learning and progress throughout the course term. This contrasts with ***summative assessment***, which is the holistic grade earned by students at the end of a course. There are a remarkably wide range of formative assessment opportunities – indeed, any interaction of any kind relating to academic and intellectual work might be considered formative assessment. Section A addresses the more organized aspects of formative assessment. Section B presents a taxonomy of formative assessment activities, including specific kinds of formative assessments, some potential options and related goals.

One key point that emerged from the discussion of the faculty workshop working group on formative assessment (hereafter referred to as “the faculty working group” in this section) was that faculty members should be cognizant of the full range of formative assessment and should consider using multiple forms of this practice. Two reasons for doing so exist. First, different students learn more (or less) from different kinds of feedback. The Yale-NUS College student body is a highly diverse student population so it behooves the faculty to consider a wide range of assessment styles that take into account the varied learning needs of the students. Second, different kinds of formative assessment serve different purposes, which may be useful for some courses but not others, or at different points within the same course. Having the full range of possibilities in mind allows faculty members to select the most appropriate formative assessment procedures.

B. A Taxonomy of Formative Assessment

The following are seven properties of formative assessment procedures. Any type might include some properties of more than one kind of assessment. Examples are presented here and will be discussed at greater length in the next section.

1. *Symmetric vs asymmetric assessment*

   This refers to the relative status of the assessor and the assessed. Interactions between the instructor and students are necessarily asymmetric. However, there are also a range of peer assessment and tutoring options. These will be discussed below.

2. *Public vs private assessment*

   This refers to the whether or not feedback is delivered to an individual student or made public. There are assessment practices that take place more openly – in the classroom, on-line, or in group settings. The advantage of public assessment is that all students being assessed potentially benefit from hearing feedback about their peers. At the same time, there are obvious issues related to confidentiality and privacy.

3. *Binary vs collective assessment*

   This relates to the second property but is not identical to the issue of public vs private assessment. Instead, binary assessment refers to discussions of a single student's work – collective assessment may either be an evaluation of group work, or discussions of class performance or academic issues conducted with several students at once (e.g. at public office hours).

4. *Anonymous vs non-anonymous assessment*

   An interesting feature of formative assessment is its ability to evaluate a student's work without knowing the identity of the student who produced it (this can also be done with summative assessment, but it requires an elaborate system of blind evaluations as ultimately the assessment must be connected back to the student). This seems particularly appropriate in settings where students can ask questions or present ideas in anonymous ways – for complete work products it becomes increasingly less efficient to assess anonymously.

5. *Internal vs external assessment*

   External assessment refers to evaluation of work by people not directly associated with the course in which the work is produced. This could be through tutoring, or through entities such as the Writers' Centre.

6. *Student initiated vs faculty initiated assessment*

   Faculty members can create moments for formative assessment as part of the structure of their courses. However, unlike summative assessment, students can also initiate a formative assessment process simply by asking the instructor about their work. The latter kind of interaction is generally encouraged by faculty, but the norms and procedures deserve more careful consideration than usually received – there is a danger that such interaction will degenerate into mere "grade grubbing". Furthermore, students with different personalities or approaches might receive sharply different levels of attention.

7. *Incentivized formative assessment*

   , It is common practice to "require" certain kinds of formative assessments (e.g. a consultation with the faculty member, submission of drafts, reading responses, peer evaluation, etc.). How are such requirements to be mandated, and what are the penalties for not doing so? Often students accumulate some points toward their final grades by performing these activities. What makes these parts of the grade "formative" is that they do not depend on the quality of the work or activity, merely on the fact that the parts have been completed. Faculty workshop participants noted that there is a limit to the number or percentage of points that should be available in this way, otherwise perverse results might be obtained in which students with greater achievement due to having missed one or more "participation" points are awarded lower grades than those who have learned less. This is particularly true when participation points are awarded on an either-or basis – that means the grade for this activity is either 100% or zero, which has the effect of weighting the activity higher than activities where there is a range. The experience of the faculty workshop participants seemed to indicate that this limit is reached at about 20-30% of the total grade.

C. Modes of Formative Assessment

1. *Office hours*

Perhaps the most common mode of formative assessment is discussion in office hours. The standard definition of office hours is they are simply a designated time at which the instructor is known to be available to students in his or her office. A variety of conversations take place during office hours for the following reasons:

- Absence from class- Students who missed class and want to know what happened might attend office hours. It is recommended that instructors have a specific policy on what kind of assistance students are entitled to if they miss class – this allows the instructor to invoke the policy when needed, and to be fair to all students in this situation.
- Specific questions on course material- This is rarer than one might expect, and seems to be more commonly and easily dealt with by email.
- Poor performance in a course- Students who are performing poorly in a course will often attend office hours with the goal of obtaining an explanation for low grades and at other times to appeal grades for better marks. Still other times, such students attend to work through general or specific areas of weakness. For younger students in particular, it is often useful to probe and critique the study habits of the students, as this is sometimes the impediment to better performance, rather than any specific lack of understanding of the material.
- Deeper engagement with course material- Occasionally, students will attend office ours to engage in deeper conversations about the subject matter, scholarship, and life in general. Some experienced faculty who have come to Yale-NUS after teaching elsewhere find that the amount of "pastoral care" required in office hours is somewhat less here than elsewhere, because of the unusually strong and deep student advising through faculty advisors, Rectors, Vice Rectors, and others in the Dean of Students and CIPE offices. This allows faculty members more time to engage in academic conversations, and helps faculty from becoming too deeply involved in students' personal difficulties, freeing faculty members' time up for other purposes. While some members of the faculty working group derive great satisfaction from helping students through their life problems, others recommend taking advantage of the existence of the unusually strong student support network as a way for faculty to pursue other faculty obligations at the College.
- Substitution for or supplement of class participation- In some cases, students who find it difficult to participate in class discussions go to office hours to engage with the material and demonstrate their knowledge and enthusiasm in ways that their classmates do in the class itself. This can be very useful for younger students unused to and uncomfortable with classroom discussions. It also provides an opportunity for instructors to offer feedback on how discussions should occur in the class itself, and find ways to help students participate. Other students might want to further bolster their course participation through attending office hours.

Faculty workshop participants felt that real consideration about the nature and purpose of office hours was warranted, since it is a mandated exercise for faculty members that does not always seem to benefit the students as much as one might hope. For example, instructors using the standard approach find that there are significant numbers of students who attend immediately before and after major assignments are due or exams are scheduled, but a much lower number of students attending office hours at other times. However, the working group discussion uncovered a wide range of other tactics used by faculty members in office hours with a variety of related goals. Some of these include:

- Required student sign-up- Some faculty members have a signup sheet – either physical or online – so that students can reserve time for a conversation. This has the advantage of avoiding the awkward pile-up of waiting students in the hallways, but has the disadvantage of discouraging spontaneous visits.
- Public office hours- Several instructors have public office hours that take place outside of the office, e.g. at Starbucks. This changes office hours from a private, binary conversation to a public, collective activity. Those who have tried this find that it strongly encourages attendance and informal conversation, but makes careful and nuanced discussion of the work of a particular student more difficult. Sometimes office meetings are scheduled at "Starbucks hours" when more in-depth discussion is warranted.
- Mandatory meetings- Some instructors require that their students meet individually with them early in the semester. This is found to increase attendance later on, presumably because the (psychological) barriers are reduced once a student has been to a faculty member's office at least once.
- Required brief meetings- Some instructors have had success in scheduling short, 10-minute conversations with each student either shortly before a paper is due, or immediately afterwards. The tight schedule impels a clear focus on one or a few specific issues. Instructors find this to be helpful, in that a comprehensive critique is hard for students to assimilate, and can overwhelm them, whereas a discussion of a few key points can sometimes be more helpful than a longer conversation. Thus this tactic not only enables instructors to interact with all the students in a seminar class at key moments during the semester, it can also provide better feedback. When employing this tactic, it is important to make sure the students understand that not every issue with their work can be addressed.

2. *Peer review*

One interesting form of formative assessment is peer review, a practice in which students critique each other's work. Often students provide each other with mock grades, but these grades seldom count directly toward the course grades. In some cases, peer review is used largely to provide formative feedback when there are simply too many students for the instructor to do so alone. This usually does not apply in the Yale-NUS context give the small class sizes but there are still sound pedagogical reasons to use peer review. Many Yale-NUS faculty working group participants tried peer review in some form with mixed, as well as quite promising, results.

Some members of the faculty working group suggested that the best use of peer review is to educate the reviewer, rather than the reviewed. By applying an appropriate rubric to another student's work, students achieve a perspective concerning rigorous thinking and excellent work that is sometimes difficult to obtain when the students consider their own work. This might be explicitly pointed out to students by focusing students on the quality of the review they are doing as well as on the feedback they receive. In this way, student learning is greatly increased and students recognize the value of such an exercise.

There are several advantages of peer review. First, it requires collaboration, teamwork and cooperation, essential workplace skills. In addition to developing these skills, students who have experience in evaluating work as well as in being evaluated in a collaborative way will be much better off in internships and full-time work. Another positive element of peer review is that it can be used for non-written work, such as peer feedback on participation in discussion-based seminars or with student presentations.

Another key element of peer review that can be helpful is to expand it from a one-on-one binary exercise to a group exercise. In this mode, a student's work is discussed by the whole group. This is a mode often employed in writing workshops. It is important in this context to guard against the devastation that can come from overly harsh or personalized critiques – but in the experience of those who have tried it here at Yale-NUS, our students are frank, but very polite, and thus the extremes of the potential difficulties can be avoided. However, monitoring of the discussion by the instructor, particularly if the discussion is online rather than in person, is key to maintaining a constructive approach. If the atmosphere is supportive, such group discussions can be particularly useful in helping students differentiate between stronger and weaker work.

Sometimes peer review fails. In the experience of the faculty working group, this tends to occur when students lack understanding of what good work entails. This can be avoided by providing an explicit rubric[1] for the students to work with, but even then sometimes students have difficulties identifying the rubric elements in the work they are critiquing. Furthermore, peer review is more likely to be problematic when the format and goals of the work are very new to the students, or when there is technical material that needs to be assimilated before good work can be accomplished. In such cases a more direct instructional mode may be appropriate.

3. *Reading responses and submitted questions*

A common practice in text-based courses is to require students to submit some kind of reading response. The primary use of this practice is to ensure that the students do the reading, and think about it before class. It also enables instructors to find out what kinds of issues and questions the students are interested in pursuing. Sometimes there is a prompt for the responses; however, more often they are free form. In some cases, students are encouraged to respond to each other on an online forum. Other times, only a few students are required to respond to any particular assignment. In general, some kind of participation points are awarded so that students fulfill the requirement.

While assessment may not be the primary goal of these assignments, instructors can make good use of these exercises for formative assessments of both writing skills and understanding of content. This is more commonly done when there are

[1] Another faculty working group handled the topic of rubrics but rubrics came up in the faculty working group on formative assessment, so is addressed in this footnote.

Many Yale-NUS students, particularly those who have graduated with International Baccalaureate degrees, are very familiar and comfortable with elaborate point-by-point rubrics. Thus, they frequently request that particular form of evaluation. However, tertiary-level work is more sophisticated and therefore is more difficult to evaluate through a detailed series of checkboxes and point scores, what many of these students consider to be "rubrics". So while rubrics are often crucial in establishing standards and fair grading practices, some participants felt that students should be eased away from very specific rubric-based grading toward a more holistic approach.

limited numbers of students responding at any one time, but it could also be done when all students respond by selecting particular students and moments that seem most productive. Furthermore, this can be done either publicly or privately, in a binary or a collective manner. Indeed, the nature of the feedback can vary depending on the message that is to be conveyed.

A variant on reading responses is to require students to pose questions. This can also be done in courses that are not primarily text-based. Some technique is generally required to make this successful – simply pausing in a lecture or seminar and asking, “Are there any questions?”, is generally not effective, as it requires students to frame a question and put themselves forward in front of their peers as potentially ignorant.

Some workshop participants report considerable success in asking students to submit a question at the end of each lecture or class, particularly in courses with technical and scientific content. Such questions serve several purposes. First, they function as a kind of attendance check, as students get a small amount of credit for each class they submit a question. Second, they provide the instructor with immediate feedback about what difficulties the students are facing. A few questions can be selected for explicit response either at the next class or online. Third, students who are thinking about what question they might ask at the end of class, are preparing themselves mentally for actually assimilating the material during class. Finally, requiring questions is also a useful tactic when dealing with student presentations, as it ensures that the “audience” or students remain attentive and receptive to learning while their classmates present.

4. *Blogs and other public forums*

An increasingly common practice is to create class blogs or forums for students to discuss the course. In some cases, blogs/forums build on reading responses, which are used as initial posts. A variety of other approaches to what the posts should address or attempt to accomplish are possible. Interestingly, this approach is often unpopular with the students. Faculty tend to assume that students will positively respond to any form of social media used in classes, since they are generally highly engaged with such platforms in their daily lives. However, this is not always the case.

The key to making blogs or other social media work in a course is the instructor closely following posts on a regular basis (that is, as often as the posts appear). In particular, the instructor must be *seen by the students* to be paying attention. That requires effort on the part of instructors, either by posting their own comments or blog posts regularly, or by providing formative feedback in some other way.

5. *Reading drafts, unrecorded or low-weight grading*

Our faculty have a wide range of practices concerning reading and commenting on drafts of papers. Some do not read drafts at all, but rather make themselves available for discussion prior to the submission of written work. Others read and comment extensively, to the point of line editing early drafts. This latter approach obviously takes a great deal of time and effort, and results in strong, final papers. However, these papers are not wholly the student’s own work, and arguably should be graded at a different standard, given the extensive commentary that they have already received.

In most situations one could consider the pros and cons of each of these approaches on a case-by-case and course-by-course basis, taking into account the goals and enthusiasms of the individual faculty members involved. However, this is greatly complicated by the common curriculum. Students who do not have extensive faculty feedback on drafts might produce work of a lower standard, and they feel deprived, both with respect to the grade they ultimately receive, and in terms of the attention (or lack thereof) they have received. Sometimes there is a problem when not all students are aware of the level of assistance that is available. One of the easiest ways to have discrepant levels of support for different students is to comment extensively on drafts of those students who submit drafts for review (versus those who do not submit drafts).

Consequently, it is strongly recommended that faculty members state clearly in the syllabus the level of help students can expect in this regard, as it will enable more timid students to ask for assistance with confidence, and prevent bolder students from trying to extract more than the faculty member is willing to or should provide. It should be noted that some faculty, particularly junior faculty, feel uncomfortable when faculty colleagues take an expansive attitude towards giving feedback on drafts, as adopting similar standards might endanger their research careers. Also, the opposite danger exists: potentially endangering their teaching career by not doing so. Thus faculty members teaching common curriculum courses may have to come to some consensus on these matters versus in major or elective courses.

One potentially useful practice is to have an early assignment that is graded, but with very low weight. This practice is intermediate between summative and formative assessment. The goal of a formal mark is to ensure that the assignment is taken seriously, rather than to contribute to a summative assessment. In this way, professors can award a few points for carrying out tasks such as reading responses. By doing this early in the semester, the instructor has an opportunity to set standards and identify the particular difficulties that individual students and the class as a whole are experiencing. Furthermore, this practice works particularly well when paired with the “10-minute office hour” approach noted above.

When adopting this approach, two actions are recommended. First, it is of little use if the grading is not done quickly, so rapid turnaround well before the next assignment is due is key. Second, the marks given should be on the low side; this encourages students to work hard and provides clear rewards when students do so without jeopardizing their final grades. It should be noted that this practice works equally well with mid-term exams and other repeat exercises (i.e., papers).

6. *Tutoring*

One key formative assessment is provided by instructors who are not formally part of the course teaching team. Such tutoring can be done one-on-one or in groups. Ordinarily, it is up to the students to request such help, although sometimes an instructor will refer a student to appropriate resources such as the Writers’ Center, the Library staff, or other tutors. The advantage of this approach is that students who have a level of achievement at the ends of the distribution of the class (either below or above the main distribution) can be given appropriate instruction without overburdening the course instructor. This seems a particularly important aspect of tutoring for our common curriculum courses. However, such tutoring works best when the issues experienced by a student are general rather than specific to the course content, since outside tutors cannot be expected to be conversant in the nuances of each course, unless tutors are specifically assigned to and trained in the course itself.

Peer tutoring is also a tool that can be deployed when proper training is provided to student tutors. Student tutors benefit from training in how to provide instruction on learning, rather than to simply provide answers. In particular, it is good for tutors to pay close attention to coaching the students without doing the work for them. One strong argument for setting up college-sponsored, peer tutoring programs is that it would enable such training to be mandatory for the peer tutors and to ensure a quality and consistency of training that would help protect our students against issues of academic integrity.

III. Best Practices in Summative Assessment

A. Definition of Summative Assessment

For the purposes of this document, the key difference between formative and summative assessment is that while all assessment might be formative (contributing to student learning), summative assessment is the culmination of graded assignments throughout the semester that results in one final grade for individual students and is recorded on a student's transcript. At the end of each semester, instructors assign students a letter grade (A-F) that corresponds to a Cumulative Average Point (CAP) ranging from 0.0 to 5.0.

Furthermore, summative assessment is what appears on transcripts sent to employers, graduate programs, and fellowship programs. Consequently, when faculty members develop priorities and design a procedure for summative assessment, they are determining how to evaluate students; how to aggregate multiple assessments into a single final course grade; and how to make choices about reporting students' learning experiences to them and to external parties.

The goal of summative assessment is primarily to evaluate student learning, as opposed to formative assessment, which aims to monitor and improve student learning during the semester.[2] Summative assessment aligns with the intended learning goals for a course, in that a student's final evaluation reflects his/her competency in the course material. Generally, summative assessment happens after learning and formative assessment have already taken place; students have received feedback and completed reading and class discussions, and are now being assessed on their understanding of the subject matter and their abilities to communicate it.[3] While formative assessment could be said to be process-oriented, summative assessment is largely project-oriented, focusing on a final product that is produced for evaluation and ultimately, a grade.

Thus, establishing clear and complete expectations for assignments is imperative, since summative assessment results in a tangible and external evaluation grade. Well-designed summative assessments allow students to demonstrate a wide range of knowledge and skills instead of requiring knowledge or skill sets that are too narrow or incomplete. Summative assessments are produced for a professor's evaluation, rather than alongside the professor, as in formative assessment.

[2] Carnegie Mellon University Eberly Center. "Formative vs Summative Assessment" Assess Teaching and Learning. Accessed June 29, 2015. https://www.cmu.edu/teaching/assessment/basics/formative-summative.html.

[3] Northern Illinois University, Faculty Development and Instructional Design Center. "Formative and Summative Assessment." Formative and Summative Assessment. Accessed June 29, 2015. http://www.niu.edu/facdev/resources/guide/assessment/formative and_summative_assessment.pdf.

Section A presents a taxonomy of summative assessment. Section B addresses specific summative assessment methods.

B. A Taxonomy of Summative Assessment

The following are five principles of summative assessment:

1. *Methods of summative assessment reflect learning goals.*

The components and weighting of these components that make up summative assessment derive from and reflect student accomplishment of learning goals and their importance. For instance, if verbal communication skill is a significant learning goal then it might be make up 40% of in-class verbal participation for the final grade. Likewise, if developing writing skills is a central learning goal for the course, then a professor provides formative assessments throughout the course for students to practice their writing before summative assessments. When designing formal summative assessments, a professor might work backwards from a set of learning goals in order to formulate an assessment assignment, as opposed to creating an assignment and attempting to describe the learning goals after formulation. Learning goals can be considered the intent of each summative assessment; learning goals are the alignment of professors' expectations and student work.

2. *Methods of summative assessment incentivize and reward effort and improvement across the semester.*

Incentivizing effort for students yields deeper learning. When improvement is rewarded in ways built into the structure of summative assessment, it gives students who perform well in the beginning of the course incentive to keep investing/making an effort and motivates student who have not done well initially to invest more effort. When summative assessment is too high-stakes or when an overall summative assessment comes without formative assessments throughout the semester, professors risk losing buy-in from students in the learning process. Furthermore, if summative assessments are weighed too heavily in the final grade, students will lose interest in developing long-standing learning practices and will instead become results-focused instead of process-oriented.

3. *Methods of summative assessment reduce the probability of debilitating anxiety among students while also maintaining academic rigor.*

This can be accomplished through careful weighting of components with other continuous assessment methods. This goal might be achieved by giving students different mechanisms for demonstrating these different forms of learning, e.g. presentations, discussions, essays, problem sets/ discrete answers, individual versus collaborative projects, and closed versus open-book projects. The effectiveness of this strategy depends on how broad the learning goals are for the course. Students learn and produce work differently; a student who excels on a written examination may not excel at in-class presentation and vice versa. Summative assessments can offer ample room for students to demonstrate knowledge and skills that play to their strengths.

4. *Summative assessment allows excellence to be identified and recognized among Yale-NUS colleagues and outside audiences.*

Summative assessment techniques allow honors review committees, graduate school admissions committees, and potential employers to identify excellent candidates through differentiation. Summative assessment can be viewed as a meaningful indication of how well a student has mastered the course material and how well he or she can communicate that mastery. This principle also dictates that the standard of grading must be recognized in reference to a common measure: that is, that a grade is only meaningful in context.[4] The "common measure" can range from a systemic method of grading (e.g. a rubric), to a clear set of expectations laid out for each assignment.

5. *Summative assessment is based on clear, consistent, fair and reasoned expectations*.

   While formative assessment can be scaled according to the setting and circumstances, summative assessment often consists of a project- or product-based grade. Where formative assessment methods can vary based on each student's learning style and needs, summative assessment requires a baseline of consistency since each student will submit completed assignments based on the same assignment information. Thus, professors ideally design fair assessments with clear expectations; summative assessments are only effective if both professors and students clearly understand the expected work product or outcome.

C. Modes of Summative Assessment

The following are eight modes of summative assessment procedures.[5] Although not an exhaustive list, it encompasses the most common modes of summative assessment and describes the benefits and drawbacks of each.

1. *Examinations*

   Examinations are one of the most obvious modes of formal summative assessments. On the whole, formal assessments can be perceived to be "fairer", since a common standard is present. If the assessment has multiple choice questions, for instance, each student has an equal and fair chance of objectively scoring well. Examinations are also a relatively quick and straightforward method of determining knowledge of material. There are a variety of exam types, including essays, multiple choice, oral presentations or exams, and short answer questions.

   However, examinations are often high-stakes and can cause stressful situations in which students perform poorly/worse or in a manner that does not truly reflect their mastery of the material. In addition, examinations are given at one point in time and for a set amount of time, which often results in students cramming beforehand and retaining a superficial understanding of the material. Furthermore, frequent examinations can inherently communicate to students that deep grasp of material is unnecessary as long as they focus on the test material.

[4] McAlpine, Mhairi. "Principles of Assessment." Robert Clark Centre for Technological Education, University of Glasgow, 2002, 4. Accessed June 29, 2015. http://caacentre.lboro.ac.uk/dldocs/Bluepaper1.pdf.

[5] *Categories adapted from Northern Illinois University*. Northern Illinois University, Faculty Development and Instructional Design Center, "Formative and Summative Assessment." Accessed June 29, 2015. http://www.niu.edu/facdev/resources/guide/assessment/formative%20and_summative_assessment.pdf.

2. *Final examinations*

Final exams, or terminal assessments, take place at the end of a course. A final exam is a true summative assessment, a concise and convenient method of assessment at the end of a course. Professors can use study guides, thus guiding students' learning and effectively communicating expectations of knowledge of the course material. Final exams in conjunction with formative assessments throughout the semester may offer insight into the effectiveness of the course.

As with examinations, high-stakes testing can have unintended or negative consequences, such as students demanding study guides or a more focused study path to take when preparing for the exam, thus focusing on a product or outcome instead of learning. Final examinations are also high-stake assessments, and students' preparedness for a final test in a course can vary dramatically based on other final exam/paper schedules during the same time. Similarly, since final exams are also limited in length and setting, unexpected illness or stress may cause an inaccurate assessment. Furthermore, final examinations play to individual students' strengths as "test-takers" and students who may not cope well with stress can perform poorly despite mastery of the material. Finally, final exams are solely summative assessments, eliminating the flexible nature of formative assessments.

3. *Written assignments*

With written assignments, including term papers, essays, research papers, reflection journals, reports and theses[6], students are asked to produce a formal piece of writing reflecting learning goals and course materials. There are essentially two types of term papers: product-driven papers, in which students are asked to demonstrate knowledge that was taught within a course, and process-driven papers, in which students are asked to research external material in order to evaluate a student's competency in certain academic skills.[7] Assignment questions can be open-ended, offering a degree of freedom and autonomy to students to present their complete knowledge and skills for assessment.

Written assignments offer students an opportunity to use a variety of skills, thus giving professors better capability to evaluate a student's development over the semester. With a product-driven paper, students may take a variety of approaches in answering the same question. With a process-driven paper, students go beyond course material in order to demonstrate their skill sets. Term papers with vaguely worded questions, or an assignment that asks students to perform external research on topics that were not specifically taught in class, may cause consternation among students. Students may object to being graded on material that was not explicitly presented in class and perceive the assignment to be unfair.[8] It is, therefore, essential to explicitly communicate the skills that a professor is looking to examine and evaluate. In addition, providing formative assessment on drafts will allow professors to refine their expectations.

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[6] Drafts submitted throughout the semester would be a formative assessment.

[7] McAlpine, Mhairi. "Principles of Assessment." Robert Clark Centre for Technological Education, University of Glasgow, 2002, 4. Accessed June 29, 2015. http://caacentre.lboro.ac.uk/dldocs/Bluepaper1.pdf.

[8] Ibid.

4. *Projects*[9]

As with term papers, projects can either be product-driven or process-driven, depending upon a course's learning goals. A project often means a student-designed product/process, which allows students freedom to develop proposals and showcase or demonstrate their strengths. Coupled with effective formative assessment, a self-driven project can be a good mode of summative assessment. In contrast to a comparatively formal final exam, projects can offer professors more insight into a student's grasp of knowledge and capabilities, if not course material.

5. *Portfolios*[10]

A portfolio is a compilation of student work assembled in order to evaluate a student's quality of work as it developed over the course of a semester. A portfolio is often an archive of work products from throughout the semester and can be formatively assessed throughout the semester. Professors could have students review and revise previously summatively or formatively-assessed work for the semester and offer a new summative grade based on improvements made. Student portfolios arguably allow for a richer and more accurate picture of a student's development in the course over time, as opposed to final examinations which examine only a student's knowledge at one specific point in time.[11]

Portfolios can come in a variety of forms depending on the course. Writing portfolios can include formative and summative assessments from the semester – old writing assignments, along with blog posts, journal entries, lab reports, or other projects. However, portfolios contain a large volume of information and may only be useful as an accurate gauge of a student's development if professors have time to sift through all of the material for each student. In general, portfolios offer a concise look at a student's development of skills and acquisition of knowledge during the course.

6. *Practical Work*

Practical work that includes performances can be final exams for classes such as music, dance, or other skills-based classes; such work can also encompass a presentation in front of a class. Performances are a combination of process- and product- orientation, making them an effective evaluation of skills-based course learning goals. Performances almost always are coupled with formative assessment throughout the course; students can also be evaluated on development and improvement throughout the semester.

IV. Application of Rubrics in Assessment

A. Definition of a Rubric

A rubric is an explicit representation of the evaluative criteria being used in assessment for a particular assignment. It lays out the expectations for any piece of student-produced work by dividing an assignment into component parts with clear descriptions of each part, which are then scored at varying levels of

[9] Project phases submitted at various completion points could be formatively assessed.
[10] Could also be assessed during its development as a formative assessment.
[11] "Portfolio Definition." The Glossary of Education Reform. November 4, 2013. Accessed June 29, 2015. http://edglossary.org/portfolio/.

competency or completion.[12] Rubrics are typically used for evaluation of assignments, to ensure that grading is consistent, and to align assignments with mastery of learning goals.[13] Rubrics are used to define academic expectations and can be useful with consistency in grading, especially in courses in which more than one person is completing the assessments.[14] Furthermore, they can be used for a wide variety of assignments, including papers, projects, presentations, portfolios and/or performances; they can also be used as formative or summative assessments. Rubrics also become advantageous in cases where it is impractical for professors to grade 'blind' (i.e. where professors will know the identity of the student being assessed) as a way to combat unintended biases related to gender, ethnicity, race, prior interactions, etc.

Rubrics can be used 'behind the scenes' by professors to arrive at a grade as well as shared with students to explain how that grade was calculated. Rubrics can, but need not be, shared with students. Rubrics can also, but need not be, shared with students in advance of the assignment being submitted in order to clarify the learning goals and expectations. They provide convenient points of reference for students while assignments are being completed, and can also act as a "goal" for an assignment as well as the rationale. For example, if a rubric contains scoring criteria for both quality of writing and content, students will understand explicitly that both are being evaluated in the grading process. With rubrics, students can also self-evaluate as they complete work, or ask peers to review their work before they submit their assignments.

As mentioned, a rubric can also be used to articulate clear goals and assessments between teaching colleagues sharing responsibility for evaluations.[15] The existence of a rubric for common assignments across teaching sections can disseminate explicit, guided standards of learning goals across a course. Rubrics can be used as a standardization tool for grading in order to improve consistency; if developed jointly by a group or team of professors, each member could share his or her perceptions of the overarching learning goals and help to define them.

B. A Taxonomy of Rubrics

There are two types of rubrics: analytic or holistic. Both have their benefits and can be altered to suit different needs.

An analytic rubric is the more common one; it cross-matches a series of criterion with levels of performance for each criteria. This type of rubric has a scoring scale and usually the points within the rubric are used to determine a grade or assessment for the assignment. The levels of performance can also be weighed differently before determining the final assessment, e.g., the number of sources a student uses could be multiplied once in a grade determination, while the quality of writing could be weighed twice in order, depending on the purposes of assessment. Analytic rubrics are used for assignments that necessitate a large number of criteria: a complex project, a term paper, or another assignment that

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[12] Carnegie Mellon University Eberly Center. "Grading and Performance Rubrics." Rubrics. Accessed June 30, 2015. https://www.cmu.edu/teaching/designteach/teach/rubrics.html.
[13] "Rubric Definition." The Glossary of Education Reform. August 29, 2013. Accessed June 30, 2015. http://edglossary.org/rubric/.
[14] University of Oregon Teaching Effectiveness Program. "Grading Rubrics." Teaching Resources. June 23, 2014. Accessed June 30, 2015. http://tep.uoregon.edu/resources/assessment/rubrics.html.
[15] "Rubric Definition." The Glossary of Education Reform. Accessed June 30, 2015. http://edglossary.org/rubric/

requires in-depth analysis of a student's performance. The weighting component is especially useful for complex assignments.[16] Analytic rubrics offer a high level of feedback to students when distributed with a graded assignment, and students can examine their own strengths and weaknesses based on a clear set of criteria.

A holistic rubric does not have separate levels of performance for each criterion. Instead it usually consists of an assessment of multiple criteria to determine a single level of performance for the assignment as a whole. For example, a holistic rubric for a blog post might look like the following:

3 – Excellent • Includes at least two external sources • Effectively analyzes content • Correctly cites sources
2 – Good • Includes at least one external source • Summarizes content but with limited analysis • Correctly cites sources
1 – Poor • Includes no external sources • Provides only a limited summary of content and no analysis • Poorly cited sources

Holistic rubrics are useful for quick and simple judgments about assignments, usually minor ones. They are useful for evaluating journal entries or blog posts, or other short assignments. Holistic rubrics tend to be relatively intuitive and efficient to score, and offer an effective snapshot of a student's overall achievement.[17] Holistic rubrics are also useful as formative assessments to determine a student's participation in class or overall performance. However, they are difficult to use for complex assignments because students could inconsistently fulfill various criteria of each level of the assessment.[18] Holistic rubrics also do not allow for specific student feedback when offered without further assessment or comment; students do not receive more targeted feedback on which criteria they need to improve.

C. Advantages of Rubrics

1. *Rubrics offer explicit clarity to both instructors and students about learning goals.*

A rubric ideally evaluates a student's level of knowledge and various skills demonstrated by the student when doing the assignment based on their importance. Furthermore, with a rubric, students can, with a single glance, determine the learning goal(s) of the assignment. That said, it may not be as clear with generic rubrics for all types of projects.

[16] Mueller, Jon. "Rubrics." Authentic Assessment Toolbox. Accessed June 30, 2015. http://jfmueller.faculty.noctrl.edu/toolbox/rubrics.htm.
[17] University of California Berkeley Center for Teaching and Learning. "Rubrics." Assessment and Evaluation. Accessed June 30, 2015. https://teaching.berkeley.edu/rubrics-0.
[18] Mueller, Jon. "Rubrics." Authentic Assessment Toolbox. Accessed June 30, 2015. http://jfmueller.faculty.noctrl.edu/toolbox/rubrics.htm.

In developing rubrics, professors determine for themselves the learning objectives for each assignment by writing the criteria and weighing them accordingly. If external research is heavily weighted for instance, students can safely infer that developing external research skills are a major goal for the assignment. A rubric therefore shows the measurement of attainment of the learning goals in different levels in relation to the module.

2. *Rubrics offer consistency in grading within and between classes.*

   Grading based on an explicit and descriptive set of criterion with weighted importance of each objective guarantees that instructors grade on the same standards over time and can offer a safeguard against fatigue or comparison grading.[19] Professors grading the same assignment across a number of sections can ensure that they are grading with the same consistent set of standards, rather than different or differing standards. This is especially important when multiple professors are grading the same assignment. Rubrics also help faculty avoid issuing grades based on unintentional or unconscious biases pertaining to race, ethnicity, gender, personality of students, forms of bias which research shows can often influence grading.

3. *Rubrics enable effective feedback between professors and students*.

   If rubrics offer detailed levels of performance and are shared with students when they receive assignments, students can see a professor's immediate thoughts and evaluations of their performances. Doing so also allows for students to align their performances with professors' expectations. In addition, a clearly graded rubric can be useful in the event that students choose to attend office hours; instead of a professor having to recall the specifics of a student's paper, he/she can reference the student's rubric and offer concrete feedback based upon it.

4. *Rubrics can speed up the grading process*.

   Rubrics, in general, offer clear and consistent guidelines for grading. If a professor grades consistently to a rubric, he/she does not have to go back through graded assignments to assess fairness across the class. Essentially, a professor can use a rubric as a checklist to determine a student's performance in an efficient and effective way.

5. *Rubrics can help refine teaching skills and improve work through feedback*.

   Rubrics allow instructors to see how their classes could be improved on the whole. If a professor notices that a majority of students are scoring below average on a particular criterion (e.g., "Using external sources"), he/she can adjust instruction accordingly. Similarly, if a rubric is used consistently throughout the course, students can self-monitor their performances and improve accordingly with consistent feedback. Students can easily ascertain their strengths and weaknesses and work on those particular skills.[20]

[19] Carnegie Mellon University Eberly Center. "Grading and Performance Rubrics." Rubrics. Accessed June 30, 2015. https://www.cmu.edu/teaching/designteach/teach/rubrics.html.
[20] Ibid.

6. *Rubrics encourage self- and peer-reflection for students*.

   When a well-written rubric is in place, students can evaluate themselves and estimate their abilities. Armed with explicit expectations, students can ask their peers to review papers and to “grade” or evaluate the student’s work according to a rubric. A rubric also offers students the ability to develop and test ideas in theory and practice.

D. Best Practices for Creating Rubrics

The following is a list of best practices concerning creating rubrics:

1. Clearly define the assignment and learning outcomes. Clarify which learning outcomes are being assessed for the assignment. Design the formative and summative assignments based on the learning outcomes of the module. Set expectations on the topic, the process that students are expected to follow, and the eventual product they will be expected to submit. Do this both in the actual assignment, and also verbally in class to allow for questions.

2. Keep the rubric manageable: limiting a rubric to four to eight items makes it easier for students to follow, and for instructors to grade. Make sure each component is specific and concrete. If a term such as “soundness of argument” is used, make sure to clarify the definition of sound argument.[21]

3. Communicate in a variety of ways to students, both to help them understand the assignment and to facilitate better feedback.

4. Consider and highlight common problems and pitfalls to avoid. Fit best practices into the higher levels of performance on a rubric and caution against pitfalls either verbally or in the assignment.

5. Create rubrics based on learning goals for each assignment and how the goals fit into larger course learning goals.

6. Use weighting as a tool to communicate your expectations and to define student efforts. Weigh criteria in your rubric according to their importance to the overarching learning goal(s) of the assignment.

7. Consider how the guidelines can make grading more consistent and easier/faster. Use concrete terms that can be understood across class sections and clarify the level of performance that is expected for competency for each particular criterion.

8. Think about the ideal submission for the assignment and how to assist students in achieving the assignment’s learning objectives.

9. Avoid vague terms such as “creative” or “interesting”, and instead make indicators specific when possible.[22] For example, instead of “creative” perhaps “takes a new or risky approach”.

[21] University of Oregon Teaching Effectiveness Program. "Grading Rubrics." Teaching Resources. June 23, 2014. Accessed June 30, 2015. http://tep.uoregon.edu/resources/assessment/rubrics.html.
[22] Cornell University Center for Teaching Excellence. "Using Rubrics." Assessing Student Learning. Accessed June 30, 2015. http://www.cte.cornell.edu/teaching-ideas/assessing-student-learning/using-rubrics.html.

10. Get feedback on rubrics from other professors or students. Ask them to read for clarity of expectations.

11. Make the format brief enough for students to absorb effectively.

E. Best Practices for Using Rubrics

1. Be consistent but also flexible when using rubrics.

2. In team teaching, be conscious of fundamental priorities common to all, and one's own idiosyncratic preferences and priorities. Rubrics may contain some core items across all seminars but individual professors can add a few additional items specific to their learning goals or pedagogy.

3. Bring transparency to expectations, but know that all potential variances in grading cannot be completely resolved.

4. Weighting depends on the type of assignment and the kind of grading done: weighting does not actually capture the holistic overview of assessment.

5. If a single rubric will be used for an assignment that will be graded by a number of instructors, develop a method to emphasize consistent grading. This can be accomplished with a grading calibration workshop or through continuous feedback between and among faculty members.

6. Test-drive the rubric with assessors who are assessing the same module. Consider an example paper and weigh it against the rubric; does scoring 75% of the points on the rubric align to the numeric grade for the assignment? Do various components need to be weighed differently to produce a grade that more accurately represents a student's performance?[23]

7. Use the rubric for students to peer-review each other in class.[24] This could be useful to students to glean the professor's expectations, and to help the professor align his/her expectations with the students'. If students do peer review each other and grant grades higher than the professor's, it could indicate a misunderstanding of expectations. Essentially, this exercise assists in determining a rubric's effectiveness.

8. Provide an example paper and its graded rubric for students to understand the professor's expectations against the rubric.[25]

V. Communicating Assessment Outcomes to Students

A. Good Practices for Communicating Expectations and Grading Methodologies

[23] Mueller, Jon. "Create the Rubric." Authentic Assessment Toolbox. Accessed June 30, 2015. http://jfmueler.faculty.noctrl.edu/toolbox/howstep4.htm.
[24] Brown University Sheridan Center. "Grading Rubrics Design." Assessing Student Learning. Accessed June 30, 2015. https://www.brown.edu/about/administration/sheridan-center/teaching-learning/assessing-student-learning/designing-rubrics.
[25] Cornell University Center for Teaching Excellence. "Using Rubrics."

The following is a list of good practices for communicating expectations and grading methodologies to students.

1. *Establish clear, specific, and achievable course goals.*
    - Establish clear, specific, and achievable course goals (e.g. be able to cite sources in MLA style) and make them consistent across sections in the common curriculum.
    - Establish course expectations within syllabi at the beginning of the semester. Summarize course material goals, along with expectations for attendance and participation.
    - Define what we mean by "learning goals" for courses and ensure that they are consistent across class (please use course instead of class) sections.
    - Develop common understanding across the common curriculum on topics such as modes of inquiry, oral communication, class participation, etc. Consistency between course sections will enforce these expectations.

2. *Define formative assessment and summative assessment.*
    - Explain differences between formative and summative assessment forms. Clarify when students will be receiving formative and summative assessments and encourage them to attend office hours.

3. *Be consistent.*
    - Be consistent with grading criteria across the common curriculum sections. If and when a grade point scale is given, it should be consistent across the CC (spell out). Discuss to what degree grading practices should be discussed or explained to students (e.g. establishing a mean across sections).
    - Work towards consistency in the number and type of assignments across sections in Common Curriculum modules.
    - Ensure grading standards are relatively consistent across sections.
    - Policies on plagiarism, class attendance and participation should also be consistent across sections and modules.

4. *Establish assessment frameworks and communicate them to students.*
    - Share assessment criteria in advance. Rely on and refine criteria from previous semesters. If using a rubric, be sure to clarify each criterion and expectations for levels of competency.
    - Concerning drafts, provide opportunities to submit drafts, but don't require them. Be consistent across the common curriculum sections on the number of drafts and amount of feedback. Consistently provide feedback on drafts to help clarify expectations for students.

5. *Communicate effectively with your students.*
    - Communicate relevant assessment information (e.g. due dates, assessment methods, etc.) in various forms and at multiple times in the semester, starting from the first day of a course. Ensure this information is consistent across sections.
    - Discuss methods that you will use to assess class participation and make this known to students.
    - Discuss different expectations when a module is graded CS/CU, as in the first semester of the students' first year.
    - Provide oral feedback on drafts to students during office hours.

6. *Communicate effectively with other instructors.*
    - Teaching teams should schedule regular meeting times throughout the semester to discuss assessment and grading. This could be done at key points in the semester, when important assignments are due.
    - Discuss amongst the faculty how class dynamics may affect student participation and assessment practices.
    - Facilitate conversations across electives on the meaning of “hard” courses/majors, “tough” grading practices, “heavy” course workloads, etc.
    - Take into consideration the idiosyncrasies of particular common curriculum modules (e.g. FoS, SI, QR) concerning grading and assessment.
    - Develop a website (e.g. Sharepoint, Canvas, WordPress) to share materials (e.g., sample essays, rubrics, additional readings) with the teaching team.
    - Find ways to share expertise in various assessment skills (e.g. via the Teaching and Learning Center).
    - Engage Vice Rectors in discussions about student performance and notify them of any concerns about a student immediately.

B. Good Practices for Communicating Feedback on Specific Assignments

1. *Define what is meant by “learning goals”.*
    - Define learning goals of each assignment. Be clear about the material assigned and the skills needed to complete assignments. Be explicit and consistent about expectations.
    - Develop learning goals that reinforce other parts of the curriculum. For instance, developing research skills early on allows instructors to build on those skills throughout the semester.

2. *Provide formative feedback.*
    - Formative feedback is most useful when provided early in and consistently throughout a course. Formative feedback helps instructors clarify their expectations; this is especially important in the first few weeks of class.
    - Explore ways to turn formative assessments into summative assessments, e.g., by breaking them down into smaller tasks with low stakes grades for each.

3. *Discuss difference between learning and grading.*

    Discuss differences between learning goals and assessment criteria (both formative and summative).
    - Discuss nuances between how much a student is learning and how he/she is being assessed. Ideally, grades would align to a student’s learning process; discuss with students who feel that they are not being fairly assessed.

4. *Encourage peer editing.*
    - Encourage peer editing in class with specific guidelines and criteria. These criteria should be consistent across sections.
    - Peer editing allows professors insight into how their students perceive the assignments’ learning goals.

- When using a rubric, provide the same rubric for peer editing exercises: the exercise can help clarify whether or not the expectations in the rubric are clear.
- In visual arts classes, encourage students to critique each other's work (they may be harsher in evaluating a student's critique of another student than of the artwork itself).

5. *Provide anonymous essays as examples.*
    - Provide anonymous essays as exemplars or concrete examples of high-quality work. These may be preferable to a rubric as it avoids students "shooting for a B" or quibbling over grades/points based on a rubric.
    - Share drafts and final essays as models of successful work but beware of students trying to imitate style/voice instead of developing their own.

6. *Keep comments constructive and provide them in a timely manner.*
    - Be mindful of your tone when communicating assessments to students. Begin with something genuinely positive about the work before suggesting ways to strengthen it. Avoid overly harsh criticisms. Keep comments constructive.
    - Beware of giving positive feedback (or grades, for graded drafts) on a draft, as students may think that no further revisions are needed. Ensure they understand that drafts are works in progress that need and should be improved. Unrevised good drafts are not acceptable as the final submission.
    - Ensure students receive feedback on their work in a timely fashion. Research shows that feedback is most effective when given soon after students submit their work. Professors may want to return students' work in batches rather than waiting until they have completed all grading.
    - Link comments to a set of explicitly pre-defined and distributed criteria. Teaching teams should consider what will work best for a particular course. For in-class written or oral presentations, provide immediate feedback. Encourage students to give constructive yet critical feedback. Model this approach and acknowledge students who do so over the course of the semester.

VI. Conclusion

To be filled in once the document is completed.

VII. List of Research Sources for Assessment and Grading

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