

Using Rubrics to Teach and Assess Financial Education

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Abstract

Rubrics can be useful tools for teaching business finance courses. They can make certain types of assignments less burdensome for the instructor while providing students with meaningful feedback on their work. This paper provides examples of rubrics currently in use and provides guidelines for creating new rubrics. The potential for using rubrics in the assessment of learning outcomes is also discussed.

I. Introduction

How many teachers have listened to students complain that they had worked very hard on a report and were shocked when they received a D or F grade on the project? The likely answer to this question is that most of us have had this experience at some point during our careers. Since most instructors dearly want their students to be successful, upon hearing this we question whether we bear some of the responsibility for the misunderstood assignment. Perhaps more clear and complete oral or written instructions would have prevented this misunderstanding. On the other hand, most students did just fine with the information in the syllabus and the instructions given orally in class. Plus, the class had been given ample opportunities to ask questions about any aspect of the assignment that they felt was unclear. Still the question lingers, is it reasonable to provide even more extensive guidance to future students to prevent this from happening again?

Some years ago this author discovered a tool that has helped minimize the occasions where students have to be given the bad news that they had done the assignment incorrectly. The tool identified is the rubric. Simply defined, rubrics are a set of scoring guidelines that seek to evaluate students' work based upon the sum of a full range of criteria, rather than providing students with a single numerical or letter score. Well-constructed rubrics differentiate among levels of performance within each criterion and serve as a ratings chart.

As discovered more recently, there are the added benefits of using rubrics for assessment purposes. Accreditation requirements typically call for assessing various aspects of academic programs and using the information to make changes that will improve the quality and effectiveness of the program. Useful assessment information can be obtained by including key assessment criterion in the rubrics of class assignments throughout your academic program.

When rubrics set forth specific criteria, define precise requirements for meeting those criterion, and assign numerical scores to each level of performance, teachers are provided with an effective, objective and authentic assessment tool for evaluation of students' work (Walvoord, 2004). When handed out before the assignment begins, a rubric can serve as a working guide for students to think about the criteria on which their work will be judged. Also, rubrics can be useful for tracking each student's progress and achievement when similar repetitive assignments are used in a course.

II. Why use Rubrics?

There are a number of reasons that rubrics are useful. First, many educators are uncomfortable making subjective judgments about the quality of students' work. Well-constructed rubrics reflect specific criteria and precisely define the requirements for meeting those criteria (Andrade, 2005). Secondly, rubrics can help improve student performance by defining quality performance. Thirdly, when students receive rubrics beforehand, they understand how they will be evaluated and can prepare accordingly (Weimer, 2002). Rubrics help students judge the quality of their own work and therefore help increase their knowledge and performance. Fourth, rubrics alleviate the burden of teacher assessments by reducing the amount of time spent grading each assignment. Students will clearly see where and why points were deducted from their final grade without the instructor writing extensive, time-consuming explanations. Finally, when it is easier and takes less time to grade, more instructors will be willing to assign projects that will significantly enhance student's ability to apply their classroom learning to real world situations and data.

III. Potential Assignments Graded Using Rubrics

The types of finance assignments in which using rubrics might be a useful way to evaluate the performance of students include, but are not limited to:

- Individual homework assignments
- Performance in simulation exercises
- Class participation
- Team projects like case presentations
- Term papers/projects

IV. Examples of a Rubrics Used in Finance Courses

To understand rubrics, a good place to begin is with an example from a basic corporate finance course. The project is called a Financial Analysis and has students apply information they have learned in the course to the analysis of a for-profit corporation of their choosing. They are warned to avoid picking regulated financial institutions, regulated utilities, and very diverse companies that would make comparisons to industry averages difficult or relatively meaningless. As you can see in evaluation form shown in Figure 1, students are asked to overview the company, do both cross-sectional and trend ratio analysis, analyze the Statement of Cash Flows, offer an opinion of the company's future growth plans, and offer a brief summary and conclusions of their significant findings about the company. To prevent students from simply cutting and pasting Internet information, a strict page limit is enforced which forces students to write the paper themselves in order to cover the required topics and meet the page limit. Besides the content described above, a good share of the points on the project are from the ability to write well and to present data in an attractive format that is easy for the reader to understand. The rubrics used in the evaluation of the project are shown in Table 1.

Figure 2 shows an evaluation form/rubric from a bank simulation exercise called the

Stanford Bank Game that is used in a commercial bank management course. In this evaluation form, the rubrics are very straight forward and are contained right on the evaluation form. Rather than the instructor filling the rubric out, students are required to evaluate themselves and their teammates. The form is part of the final report that students hand in at the end of the simulation. Each student puts a completed form in a sealed envelope and includes it with the group report that is handed in at the end. When students submit this form, it becomes clear to the instructor which members of the simulation team performed effectively in the exercise (and hopefully got the most out of the learning experience). This survey is handed out at the beginning of the course so students know what they need to do during the simulation in order to effectively support their team. The instructor uses this information to help determine a student's class participation grade for the course.

V. Assessment

Although not a major focus of this paper, Figure 1 gives a hint as to the usefulness of rubrics in assessing student's understanding and performance in an introductory corporate finance course. Note that the figure divides the various dimensions of the paper into two parts. The first is the ability to convey content in understandable, professional way. The various items included evaluate both the understanding of various topics covered in the course as well as the student's ability to convey their understanding in an effective way. The second section evaluates the student's ability to write and clearly present data. The subscores of the two sections would effectively assess the student's understanding of the material and the student's proficiency in writing reports. Well constructed rubrics can perform the dual function of grading students and assessing programmatic goals (Weimer, 2002).

VI. How to Create an Original Rubric

It does take some time to learn how to create original rubrics. Once this process has been done several times, it becomes much easier to do. Especially with large sections and/or repetitive assignments, the ultimate time savings can be substantial. The following is a ten step process for developing a rubric (Drewes-Stoen&Wright, 2006):

Step 1: Determine the concepts to be taught. What are the essential learning objectives?

Step 2: Select the appropriate type of rubric for your purpose. Types of rubrics include:

- numerical point scale - the more points the better the performance (more problems worked, more relevant references found, etc.)
- holistic rating scale - summary evaluation (useful for a term project)(White, 1994)
- analytical rating scale - levels of performance in a variety of aspects of the assignment (useful for grading improvement during a course)
- checklist - did they forget anything? (yes or no)

Step 3: Choose the criteria to be evaluated. Analyze the performance task and list the knowledge, skills, and qualities that an individual who has attained the desired outcome will possess. Identify the evidence to be produced (Broad, 2003). Develop a grid by putting these elements in the first column. Try to include as many dual purpose items as possible, ones that

evaluate student performance and assess programmatic goals.

Step 4: Determine how many levels of performance are desired. Try to avoid an odd number so that there is no A middle or neutral ranking. Use descriptive, rather than neutral terms. (Examples: rarely, seldom, novice, usually, veteran, distinguished, attempted, admirable, proficient, mastered, awesome, accomplished, professional, etc.)

Step 5: Write the standards for judging performance for each of the levels in each category. Start with the desired level of achievement and then identify lower levels of achievement (see Table 1).

Step 6: Collect student and expert samples. Use what you learn to distinguish effective work from ineffective work.

Step 7: Use the information learned in step 6 to modify the standards and eliminate overlapping descriptions between levels as much as possible.

Step 8: Conduct a pre-test of your assessment tool. Make sure that by using the instrument you can reliably and accurately make judgments on student performance. Revise the rubric as needed.

Step 9: Consider weighting the rubric. An analytical rubric may contain certain aspects of the assignment as being more important than other aspects. Use weights to put more emphasis on the more significant aspects of the assignment. (See item number 2 in Figure 1)

Step 10: Share the rubric with students when the assignment is made. This will allow the students to learn what is expected of them. Students will gain a sense of responsibility for their own learning.

VII. Analytic vs. Holistic Rubrics

Analytic rubrics are used with formative assessments where students can use the feedback to do a better job on the next assignment. Students can see how their performance is rated with regard to each of the descriptors identified in the criteria. The descriptors associated with the qualitative rubrics provide students with an opportunity to see what they must do to move up to the next level. When students have a good idea about how to improve, students are typically more motivated to improve their work and achieve a higher level of performance (Carrithers, Ling & Bean, 2008).

Holistic rubrics are typically used for summative (final) assessments where students have no chance to go back and improve performance. These are used to make a single judgement about the quality of a student's work. While they provide the student with some insight as to strengths and weaknesses of their submitted work, these are not as detailed and as time consuming to create and score as analytical rubrics (Carrithers & Bean, 2008).

VIII. Reliability and Validity

For an evaluation measure to be considered reliable, there needs to be a consistency of scores among raters or within the same rater over a period of time. A greater degree of reliability occurs when the standards are clear and examples for each level of performance are collected and analyzed. Referring to these examples often helps ensure scoring consistency over time (Harrison, et al., 2001).

Validity occurs when an instrument measures what it is intended to measure. The attributes being measured should be meaningful for students and focus on important aspects of the skill or knowledge being taught. Explicit standards help increase the validity of your instrument. Validity is especially important if you are going to use the results for assessment purposes. Since assessment information is used to modify and improve programs, the validity of the assessment is essential.

IX. Summary and Conclusions

Rubrics can be very helpful tools to quickly grade assignments, provide students with information to understand their grades and make future improvements, and to assess the achievement of teaching objectives. The attributes of a good rubric include:

1. They address all relevant content and performance objectives
2. They define standards and help students achieve them by providing criteria with which they can evaluate their own work
3. If done well, they are easy to understand and use
4. They provide all students with an opportunity to succeed at some level
5. They yield consistent results, even when administered by different scorers.

When pedagogical considerations demand assignments from students and time pressures make it challenging to offer feedback to larger classes, rubrics can be a way to provide helpful feedback to students in a time-effective way. When blank rubrics/evaluation forms are handed out before the assignment is due, students are given helpful information about the aspects of the project that will be graded. It also serves as a checklist to make sure that important topics are not overlooked in the typical rush to complete the work that too often characterizes student work. The push by many universities to achieve and maintain higher levels of accreditation make the use of rubrics even more useful. The ability to meet teaching responsibilities and collect relevant assessment information at the same time, make rubrics a very timely and effective tool for teaching college courses in finance and other disciplines.

Figure I
Financial Analysis Project Scoring Sheet
Finance 360 - Corporate Finance
Performance

| Content of Paper | Needs | | | | | |
|----------------------------------|--------------------|----------------|---|---|---------------------|----|
| | <u>Improvement</u> | <u>Average</u> | | | <u>Professional</u> | |
| 1. Company Overview | 0 | 1 | 2 | 3 | 4 | 5 |
| 2. Industry Ratio Comparisons | 0 | 2 | 4 | 6 | 8 | 10 |
| 3. Ratio Trend Analysis | 0 | 1 | 2 | 3 | 4 | 5 |
| 4. Cash Flow Statement Analysis | 0 | 1 | 2 | 3 | 4 | 5 |
| 5. Future Capital Needs Analysis | 0 | 1 | 2 | 3 | 4 | 5 |
| 6. Summary and Conclusions | 0 | 1 | 2 | 3 | 4 | 5 |
| 7. Bibliography/Citations | 0 | 1 | 2 | 3 | 4 | 5 |
| 8. Overall quality of analysis | 0 | 1 | 2 | 3 | 4 | 5 |

Form of paper

| | | | | | | |
|--|---|---|---|---|---|---|
| 9. Spelling/Punctuation | 0 | 1 | 2 | 3 | 4 | 5 |
| 10. Professional appearance | 0 | 1 | 2 | 3 | 4 | 5 |
| 11. Ratio Calculation and Presentation | 0 | 1 | 2 | 3 | 4 | 5 |
| 12. Academic tone/Grammar | 0 | 1 | 2 | 3 | 4 | 5 |
| 13. Overall quality of presentation | 0 | 1 | 2 | 3 | 4 | 5 |

Additional Comments: Paper Grade = 30 + _____ = _____ points

Table I
Financial Analysis Assignment Rubrics

| Criteria | Needs Improvement | Average | Professional |
|--------------------------------------|--|---|--|
| 1. Overview | Incomplete or non-existent information | Covers what company does and where they do it | Covers what company does, where they do it, and provides some supporting data |
| 2. Ratio cross-sectional comparisons | Minimal or missing data and analysis | Reasonable analysis but various requirements are not met. | Covers calculated ratios, comparison ratios, and offers plausible explanation of comparison results |
| 3. Ratio trend comparisons | Missing or very minimal discussion of ratio trends | Limited discussion of ratio trends | Discussed ratio trends for an appropriate number of ratios |
| 4. Cash Flow Statement analysis | Did not address any of the three questions | Missed addressing one or two of the questions | Addressed all three questions concerning the statement |
| 5. Future capital needs analysis | Did not address future capital needs | Covered only one of the two issues | Offered informed opinion about the future growth plans and potential source of funds to accomplish corporate goals |
| 6. Summary and conclusions | Incomplete or non-existent summary and conclusions | Provided miscellaneous facts and no summary statement | Identified key findings and expressed informed judgment about the likelihood of future corporate success |
| 7. Bibliography | Does not meet the minimum standards for research sources | Meets minimum standards for research sources | Exceeds the minimum number of citations in proper academic form |
| 9. Spelling and punctuation | Numerous problems with spelling and word usage | Some errors in spelling and proper word usage | No spelling errors and uses proper words (ex. there-their, effect-affect, etc) |
| 10. Professional appearance | Identifies you as someone who is not | Identifies you as a new college grad that | Look of the paper identifies you as a up and coming |

| | | | |
|---|---|--|--|
| | serious about their professional reputation | needs additional training | professional |
| 11. Calculations/Data Presentation | Does not meet minimum data documentation requirements | Meets minimum data documentation requirements | Meets all data documentation requirements, well organized, and easy to read and understand |
| 12. Tone/Grammar | Seldom uses proper academic tone and good grammar | Uses proper academic tone and grammar much of the time | Consistently uses proper academic tone and good grammar |
| 13. Overall Quality of writing and presentation | Paper is generally poorly written--writing center help or additional course work is recommended | Paper is generally well written but has significant problems in places | Paper is well organized, clearly written, and easy to understand |

Figure II

Example Rubric for Teamwork in Simulation Exercise

Evaluator=s Name: _____

Class: Finance 404 - Commercial Bank Management
Stanford Bank Game

| Person Being Evaluated | Performance Aspects | | | | | | Total Points |
|------------------------|---------------------|---|---|---|---|-----|--------------|
| | A | B | C | D | E | F | |
| Yourself | | | | | | N/A | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |

Points: 3 = Always, 2 = Usually, 1 = Sometimes, and 0 = Seldom

Performance Aspects:

- A. Attendance at team meetings.
- B. Contribution of ideas.
- C. Contribution to getting things done.
- D. Was well-prepared for meetings.
- E. Showed leadership when needed
- F. Overall desirability to work with this person again.

Comments:

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