

Using Grading Forms to Track Assessment of Learning Outcomes:
As easy as 1 – 2 – 3

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Summary

As universities respond to calls for greater transparency and accountability, there is a top-down call for assessment of learning outcomes. There is also a bottom-up focus on assessments as instructors seek to continually improve their classes. Whether the focus is top-down or bottom-up, there is a need to close the loop in assessment practices which include the discovery, or confirmation and continual improvement of student learning. The additional improvements may be changes to instruction, course design, curriculum, program, or even the assessment practices themselves.

Where are you in this journey? Perhaps you have developed learning outcomes for your program or course and now want to know whether and to what extent students have achieved them.

This presentation will demonstrate how Grading Forms (a kind of rubric) may be used in a course to make tracking student performance easier. With Grading Forms, instructors can more easily respond to calls of "show me the data" on students' learning.

Background and Definitions

Definitions used in this paper

Assessment: A process of collecting and reporting data to determine how well students are achieving intended learning outcomes and to inform changes in courses or programs to improve student (learning) success. At the course and program levels, assessment indicates how well each component meets its goals or outcomes. (Ferris State University [FSU], 2008)

Learning Outcomes: Statements of how and what knowledge, skills, and behaviors students are expected to demonstrate at the module, course, or program level. (FSU, 2008)

Typically, if a business did not provide a cost effective product or service the customer wanted, the customer would go elsewhere. The public wants to hold educational institutions accountable in a similar manner. Potential students and their families are asking what they will get for their tuition dollars. Government agencies, with shrinking budgets, are asking what they will get for their financial support of public education. This paper will focus on one specific measure of accountability, namely assessment of learning outcomes. A wealth of information is available regarding the topic of student learning and assessment: “What students learn during the undergraduate years in postsecondary education has been the focus of a large body of inquiry for the past 30 years” (Flowers, Osterlind, Pascarella & Pierson, 2001).

Traditional measures which many institutions have used to demonstrate accountability include graduation rates, job placement rates, student satisfaction, and alumni feedback. While these data may be useful, the question of what students have learned is not answered in them. Asking students if they learned will not provide the actionable information needed: “Learners' self-assessment of how much they learned is highly associated with their prediction of the usefulness of what they have learned” (Van Buren & Erskine, 2002).

The University of Northern Colorado's Monfort College of Business (MCB) took an innovative approach to demonstrate student learning, using pre- and post-percentiles on standardized tests to express value-added improvements. As reported in their 2004 Malcolm Baldrige National Quality Award application, “In FY99, the average ACT for new MCB freshmen was 22.4, which translates into the 67th percentile (U.S.). MCB's *value added* in student learning is evident when compared to the 89th percentile this group earned on the ETS [Educational Testing Service] exam. The entering class of Fall 2000 earned an average ACT score of 23.2 (72nd percentile) and later performed in excess of the 90th percentile (interpolated at the 93rd percentile) on the ETS exam” (Monfort College of Business, 2004).

Accrediting bodies are facilitating the move toward more accountability: “Accountability did sharpen a bit when the discussions turned to the role of accreditation and providing information about student learning outcomes” (CHEA, 2003). The wording will be different for various accrediting bodies, but what follows is a sample with emphasis added: “Core Component - 3a The organization's goals for *student learning outcomes* are clearly stated for each educational program and make *effective assessment possible*” (Higher Learning Commission, 2003).

Confirmation of student learning is seen as an important piece to demonstrate what a school has accomplished. The public expects products and services to continually improve; why shouldn't education continually improve? Benjamin and Hersh (2002) asserted that “the development of direct measures of student learning is the missing but essential ingredient needed to improve the quality of American higher education.”

People may choose to be part of the process or let someone else develop the methods. Klein (2005) observed that “more than 40 states have created some form of accountability or statistical reporting system and more than half of those have formal report cards that characterize

learning outcomes, including more than 200 performance indicators that were directly or indirectly tied to student learning.”

Substantial efforts are also being coordinated by organizations other than accrediting bodies. The Voluntary System of Accountability is a collaborative effort among the American Association of State Colleges and Universities (AASCU), the National Association of State Universities and Land-Grant Colleges (NASULGC), and the public higher education community.

The minimum components of public accountability that would be included are:

1. The full set of student and parent information measures agreed upon;
2. Student engagement with campus measures-NSSE or CIRP or other measure selected; and
3. Core learning outcomes measures: Use of one of the three or four outcomes tests (CLA, MAP, CAAP, and GRE) agreed upon for the experimental period. (McPherson, 2006)

The College Portrait, the web template designed to communicate the Voluntary System of Accountability data to the public, is intended to assist prospective students and their families, but there are numerous secondary customers. (AASCU & NASULGC, 2008)

Assessment of learning outcomes is a topic that will continue to generate dialogue and actions and, if done properly, should be effective: “In the future envisioned by the committee, educational assessments will be viewed as a facilitator of high levels of student achievement. They will help students learn and succeed in school by making as clear as possible to them, their teachers, and other education stakeholders the nature of their accomplishments and the progress of their learning” (Pellegrino, Chudowsky & Glaser, 2001).

Using Grading Forms

The process of collecting, analyzing, and acting upon data is time consuming. The use of grading forms helps to minimize the clerical task but still produces useful information. An example and screen shots will demonstrate the following three steps.

1. Identify the learning outcomes and associated assessment for the class
2. Create a Grading Form that will be used to score the assessment.
3. Using the (automatically generated, if applicable) Column Statistics for the Grading Form, add the data point to the graph. Is the trend going up, down or staying the same? What actions will you take based on the data?

An example is provided below:

Step 1. Identify the learning outcome and associated assessment.

Learning outcome: Describe the characteristics of effective leadership systems

Assessment: Identify strengths and areas for improvement in the leadership portion of a Baldrige case study.

Step 2. Create a Grading Form that will be used to score the assessment. The number of criterion (rows) and indicators (columns) may be varied. (See Figure 1 as one example of a Grading Form used in a graduate level class. Undergraduate level classes may have different Performance Indicators.)

Objective/Criteria	Performance Indicators			
	Need Improvement	Meet Expectations	Above Expectations	Exceptional
Identified Process – Strengths Integrates characteristics of effective leadership systems; organizational values, and effective strategies for deploying them throughout an organization.	(3 points) Identified some activities where the applicant had a systematic approach or deployment.	(7 points) Identified some significant activities where the applicant had a systematic approach or good deployment.	(8 points) Student was able to identify some processes that were defined and deployed.	(10 points) Student was able to identify the key processes that were well defined and deployed.
Identified Process – Opportunities for Improvement Selects areas needing improvement in approach or deployment.	(3 points) Identified some activities where improvement was needed in approach or deployment.	(7 points) Identified some significant activities where improvement was needed in approach or deployment.	(8 points) Student was able to identify some processes that needed improvement in approach or deployment.	(10 points) Student was able to identify the key processes that needed improvement in approach or deployment.
Identified Results – Strengths Select key performance indicators that predict and assess organizational success in the context of the Baldrige criteria.	(3 points) Identified some activities where the applicant had positive results.	(7 points) Identified some significant activities where the applicant had positive results.	(8 points) Student was able to identify some processes that had positive results.	(10 points) Student was able to identify the key processes that had positive results.
Identified Results – Opportunities for Improvement Selects areas needing improvement in results.	(3 points) Identified some activities where improvement was needed in approach or deployment.	(7 points) Identified some significant activities where improvement was needed in results.	(8 points) Student was able to identify some processes that needed improvement in results.	(10 points) Student was able to identify the key processes that needed improvement in results.
Summary Summary is well thought out and includes all key points.	(2 points) There is some linkage between comments and summary.	(5 points) Key points were addressed.	(6 points) Summary conveyed an understanding of the applicant and some processes.	(7 points) Summary conveyed an understanding of the applicant and the key processes.
Spelling & Grammar Correct spelling, punctuation and grammar are used.	(0 points)	(0 points) There were two or more spelling, grammar and sentence construction problems; or use of slang.	(2 points) One error in grammar, punctuation or sentence structure; or use of slang.	(3 points) No errors in grammar, punctuation or sentence structure; with no use of slang.
				Maximum points 50

Figure 1. Grading Form Case Study: Example of a Grading Form used in a Graduate level class

When asked if learning outcomes are met, some instructors claim that is done by giving grades. For example, all students may have earned a passing grade on an assignment, as shown in Figure 2, but the grade alone doesn't provide the needed insight: Numerous students may not have done well on one or more aspects of the assignment. Using the Grading Form allows the student and instructor to see this. The grading form should be shared with students in advance of working on an assignment to provide clarity about how the assignment will be graded.

Case Study Pts	38	38	38	40	42	42	42	43	44	45	45	45	45	46	46	46	47	48	50	50
%	76	76	76	80	84	84	84	86	88	90	90	90	90	92	92	92	94	98	100	100

Figure 2 .Grades for Case Study Assignment

If the grading form is used manually, then tally marks or a count of how many times a check mark appeared can be made. Statistics may then be computed from the tally. Please see the appendix for an example of manual use of a Grading Form. Alternately, if a learning management system such as Blackboard or Desire2Learn is used, then the statistics may be readily available. In this example, Blackboard Vista is being used. In this program, Column Statistics for the Grading Form are obtained in the grade book. A user may click on the down arrow to the left of the grade book column of interest to obtain a drop down menu and select Column Statistics, as shown in Figure 3.

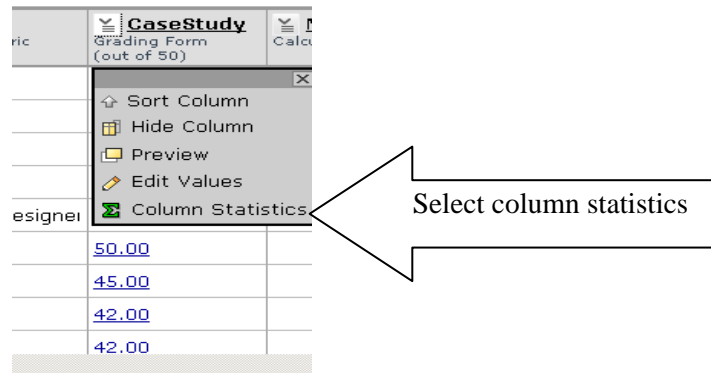


Figure 3. Select Column Statistics

Summary statistics and a tally broken down by each criterion in the Grading Form will be given, as shown in Figure 4. The number of students is provided as “Count,” along with summary statistics at the top, including the average of 44.1 points. The tabular part of the page shows the number and percentage of students who scored in each box. For example, for Criteria “Identified

Process, Opportunities for Improvement,” 7 (35%) met expectations; 10 (50%) were above expectations; and 3 (15%) were exceptional.

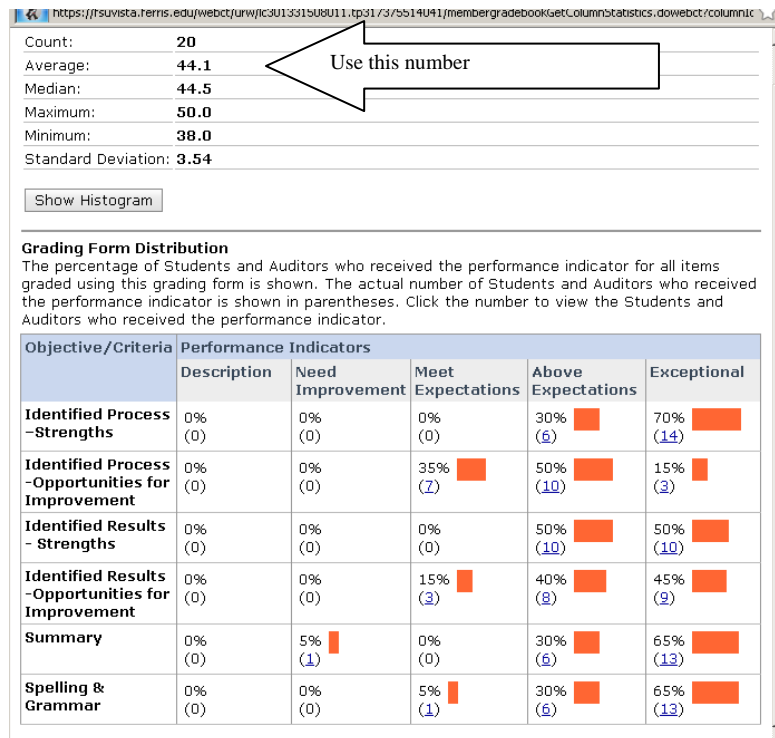


Figure 4. Summary statistics and tally

Step 3. The average of 44.1 points is then added to a Microsoft Excel chart of past averages, as shown in Figure 5. For each time the class is offered, a new data point is calculated. The assignment has been modified over time and the maximum points varied, so the results have been standardized to a 50-point scale. This method is not perfect, but it does provide an indication of patterns. In the example above, students have had a harder time identifying opportunities for improvement than finding strengths.

S 2006	W 2007	F 2007A	F 2007B	W 2008	F2008
48	45	45	42	42	44

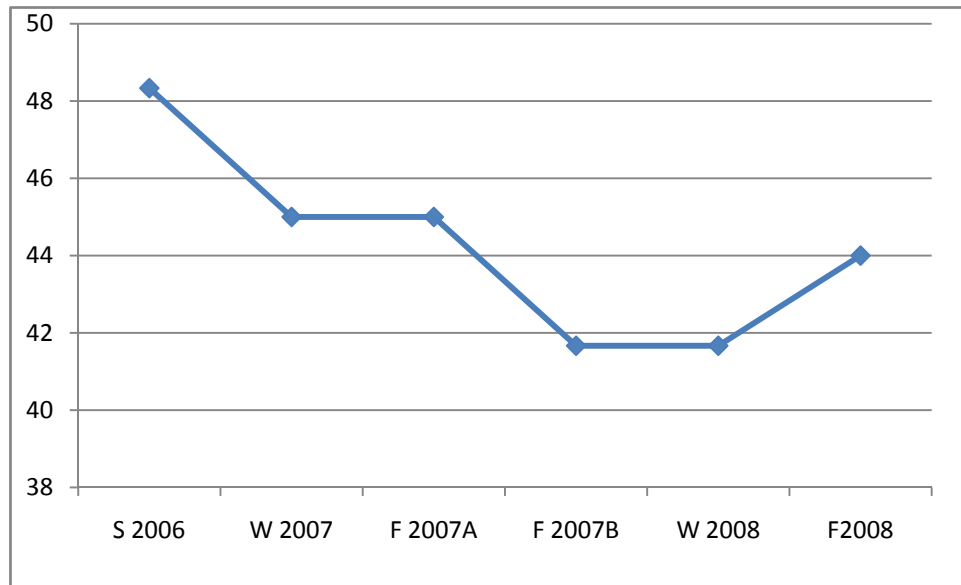


Figure 5. Historical data for Learning Outcome 1 of MBA625, which asks the student to describe the characteristics of effective leadership systems

Figure 5 shows that, in the fall semester of 2007, two sections of the class were offered. The Boxplot shown in Figure 6 displays this more effectively. This graph could be created in Excel, but it would require entering placeholder data for those semesters that had only one section. Instead the plot was created in SPSS. Whether the quick and easy graph of Figure 5 is used or the more accurate and sophisticated graph of Figure 6 is used, a graph is recommended to display trends.

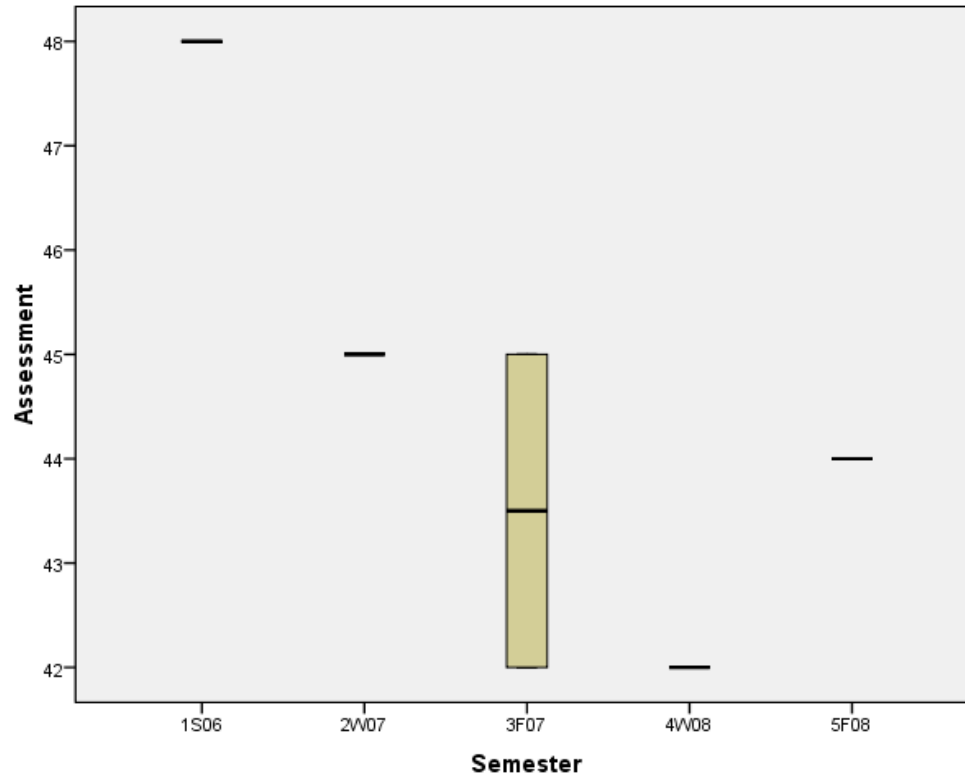


Figure 6. Boxplot of figure 5 data to more accurately display the results from two course sections in one semester.

The grading form includes a place for the instructor to provide written comments to students, along with the points received. For instructors who receive and return work electronically, the comments are equivalent to the ones written on the student’s paper; however, in this method, they are provided in the grading form. Sometimes this method requires copying a sentence from the student’s paper and pasting it in the comment section to make detailed comments. Otherwise, references can be made to specific parts of the assignment, for example, the introduction; then, instructor comments follow.

Additional Example

In this next example, Figure 7, every student earned a passing grade, but an area needing improvement is clearly documented—namely, “critical thinking.” This example highlights why grades alone do not provide the necessary insight: Continual improvement of student learning. The Grading Form is shared with students along with the assignment to provide additional clarity before the assignment.

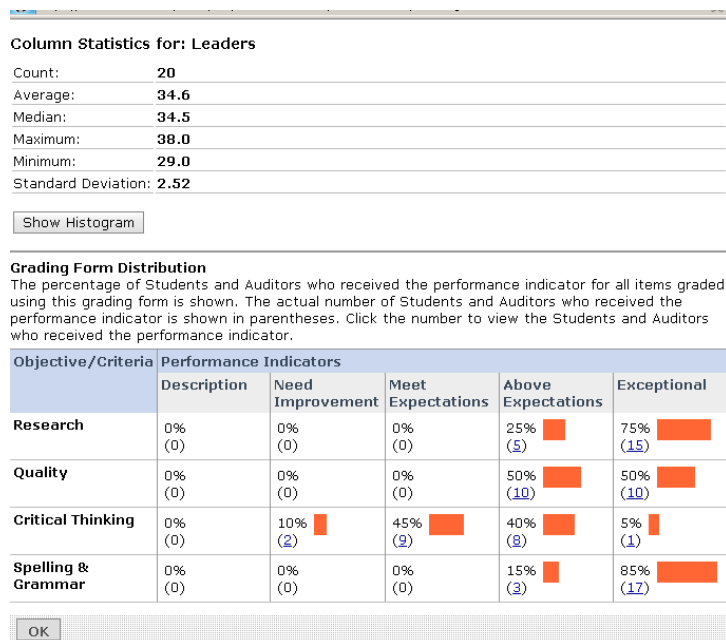


Figure 7 Example in which all grades were passing but there is an area for improvement

Conclusion

Using Grading Forms can help to minimize the clerical task of tracking assessment to demonstrate that a learning outcome has been met. The following three steps were used:

1. Identify the learning outcomes and associated assessment for the class
2. Create a Grading Form that will be used to score the assessment.
3. Using the (automatically generated, if applicable) Column Statistics for the Grading Form, add the data point to the graph. Is the trend going up, down or staying the same? What actions will you take based on the data?

Data are available to demonstrate how students are doing, but such data should be collected with the aim of guiding decisions. Once information is gathered, the instructor must decide what action to take, if any, based on the data. From the tally sheet in Figure 4, the criterion that is the lowest is “Identified process – opportunities for improvement”. This is an area in which the learning outcomes could be improved.

I have found Grading Forms to be useful not only for tracking assessment of learning outcomes, but to help me be more objective in my grades. I would like to thank Dr. Gregory Wellman, College of Pharmacy and Bill Knapp, FCTL at Ferris State University, for showing me how easy it is to create and use grading forms.

Works Cited

- American Association of State Colleges and Universities (AASCU) and the National Association of State Universities and Land-Grant Colleges (NASULGC), (2008 Jan 1). About the college portrait. Retrieved December 27, 2008, from http://www.voluntarysystem.org/index.cfm?page=about_cp
- Benjamin, R and Hersh, R. H., (2002). Measuring the difference college makes: The RAND/CAE value added assessment initiative. *Peer Review*. Winter/Spring, 7-10.
- Council for Higher Education Accreditation (CHEA), (2003). Is accreditation accountable? The continuing conversation between accreditation and the federal government. *CHEA Monograph Series, 1*,
- Ferris State University (FSU). (2008, Sept 8). Glossary. Retrieved October 9, 2008, from the Assessment Support Web site at <http://www.ferris.edu/htmls/administration/academicaffairs/assessment/glossary.htm>
- Flowers, L., Osterlind, S. J., Pascarella, E. T., and Pierson, C. T., (2001). How much do students learn in colleges? *The Journal of Higher Education*. 72, 565-583.
- Higher Learning Commission, (2003). Retrieved December 27, 2008, from Handbook of Accreditation Web site: http://www.ncahlc.org/index.php?option=com_content&task=view&id=37&Itemid=116
- Klein, S.P., Kuh, G., Chun, M., Hamilton, L., Shavelson, R., (2005). An approach to measuring cognitive outcomes across higher education institutions. *Research in Higher Education*. 46(3), 251-276.
- McPherson, P., Shulenburg, D., (2006 Aug 1). Toward a voluntary system of accountability program (VSA) for public universities and colleges. *National Association of State Universities and Land-Grant Colleges*, Retrieved December 27, 2008, from http://www.voluntarysystem.org/docs/background/DiscussionPaper3_Aug06.pdf
- Monfort College of Business (2004). Baldrige National Quality Program. Retrieved October 9, 2008, from the Recipient Application Summaries Web site: http://www.quality.nist.gov/PDF_files/Monfort_Application_Summary.pdf
- Pellegrino, J. W., Chudowsky, N., and Glaser, R., (2001). *Knowing what students know: The science and design of educational assessment*. Washington, DC: National Academy Press.
- Van Buren M., Erskine, W., (2002). Learning outcomes report. *American Society for Training & Development (ASTD)*. Retrieved Dec 22, 2008, from <http://www.hrewcorp.com/articles/2002LearningOutcomesReport.pdf>

Appendix

Below is an example that has been done manually by creating the framework in Excel and entering the frequency for each box. The count and percentages were done by using the functions feature of Excel.

CASE STUDY						
		Need Impr	Meet Expect	Above Expect	Exceptional	
	pts.	3	7	8	10	Count
	%			30%	70%	
Identified Process - Strengths				6	14	20
	pts.	3	7	8	10	
	%		35%	50%	15%	
Identified Process - Opportunities for Improvement			7	10	3	
	pts.	3	7	8	10	
	%			50%	50%	
Identified Results - Strengths				10	10	
	pts.	3	7	8	10	
	%		15%	40%	45%	
Identified Results - Opportunities for Improvement			3	8	9	
	pts.	2	5	6	7	
	%	5%		30%	65%	
Summary		1		6	13	
	pts.	0	0	2	3	
	%		5%	30%	65%	
Spelling & Grammar			1	6	13	