Assessment in Departments and Programs at BU: Time-Efficient, Useful, and Acceptable to NEASC

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Definition

Assessment of student learning is the systematic gathering of information about student learning and the factors that affect learning, undertaken with the resources, time, and expertise available, for the purpose of improving the learning.

The Three Basic Steps of Assessment

1. Articulate learning goals
   "When students complete this [course, major, gen-ed program] we want them to be able to…."
2. Gather information about how well students are achieving the goals and why
3. Use the information for improvement

The End of Assessment is Action

The purpose of assessment is informed decision-making, including the use of information about student learning.

What NEASC Requires (www.neasc.org)

> 4.44 The institution implements and supports a systematic and broad-based approach to the assessment of student learning focused on educational improvement through understanding what and how students are learning through their academic program and, as appropriate, through experiences outside the classroom. This approach is based on a clear statement or statements of what students are expected to gain, achieve, demonstrate, or know by the time they complete their academic program. The approach provides useful information to help the institution understand what and how students are learning, improve the experiences provided for students, and assure that the level of student achievement is appropriate for the degree awarded. Institutional support is provided for these activities.

4.45 The institution's approach to understanding student learning focuses on the course, program, and institutional level. Data and other evidence generated through this approach are considered at the appropriate level of focus, with the results being a demonstrable factor in improving the learning opportunities and results for students.

The Basic, No-Frills Department/Program Assessment Plan

1. **Learning goals** (at the end of the program, students will be able to…)
2. **Two measures:**
    a. **One direct measure** (direct means student performance is directly evaluated, as in tests, exams, projects, interactions with clients, etc.).
        i. Review of end-point senior or grad student work by faculty. Grades will not suffice as a measure. Describe the student work that was analyzed and the criteria that were used.
        ii. If students take a licensure or certification exam, this can be added as a second direct measure
    b. **One indirect measure** (indirect means an intervening step, such as asking students what they thought they learned, or tracking their career or their acceptance into further education)
        i. My preference: student survey, interviews, and/or focus groups asking three questions:
            1. How well did you achieve each of the following departmental learning goals [use scale such as "extremely well, very well, adequately well, not very well, not at all"]
                [list each department goal, with scoring scale for each]
            2. What aspects of your education in this department helped you with your learning, and why were they helpful?
            3. What might the department do differently that would help you learn more effectively, and why would these actions help?
        ii. Second choice: Alumni surveys
        iii. In some fields, job placement rates will be important
3. **ACTION**.
    a. I suggest an annual meeting: set aside at least 2 hours to discuss ONE of your degree programs.
    b. Put the annual meeting in place NOW, without waiting for the perfect data.
    c. At the meeting, consider whatever data you have about learning, no matter how incomplete or inadequate.
    d. Outcomes of the meeting:
        i. ONE action item to improve student learning, with a timeline and assignment of responsibility
        ii. ONE action item to improve the quality of data, if needed, with a timeline and assignment of responsibility
    e. Keep minutes of the meeting
        i. To serve as your own record and reminder
        ii. To document for accreditors that assessment is taking place

More help: Barbara E. Walvoord. *Assessment Clear and Simple*. 2nd ed. Jossey-Bass, 2010. Chapter 1 (pp. 1-26) on assessment basics; Chapter 3 (pp. 59-79) for Departments and Programs.

OPTION E1: PART A. INVENTORY OF EDUCATIONAL EFFECTIVENESS INDICATORS

Sample: Political Science (completed by Walvoord as an example)

CATEGORY	(1) Have formal learning outcomes been developed?	(2) Where are these learning outcomes published? (please specify) Include URLs where appropriate.	(3) Other than GPA, what data/evidence is used to determine that graduates have achieved the stated outcomes for the degree? (e.g., capstone course, portfolio review, licensure examination)	(4) Who interprets the evidence? What is the process? (e.g. annually by the curriculum committee)	(5) What changes have been made as a result of using the data/evidence?	(6) Date of most recent program review (for general education and each degree program)
List each degree program: 1. Undergraduate	Yes	xxx.xx.edu	1. Faculty review of senior student research projects 2. Annual survey of seniors asking about their learning, the factors that helped them, and suggestions for change.	Undergraduate Studies Committee meets annually to review evidence and take action or make recommendations to the department	In 2009, evidence indicated students weak in ability to construct a research question. Courses in sophomore and junior years were amended to offer practice and feedback in that area.	2007
2. Ph.D.	Yes	xxx.xx.edu	1. Faculty review of qualifying exams and dissertation 2. Graduate school conducts exit exams and report to department 3. Graduate school survey on job placement	Graduate studies committee meets as above.	Graduate studies committee prepared online resources for students to learn about career options outside college/university teaching.	2007

OPTION E1: PART A. INVENTORY OF EDUCATIONAL EFFECTIVENESS INDICATORS

Sample: Chemistry (Completed by Walvoord as an example)

CATEGORY	(1) Have formal learning outcomes been developed?	(2) Where are these learning outcomes published? (please specify) Include URLs where appropriate.	(3) Other than GPA, what data/evidence is used to determine that graduates have achieved the stated outcomes for the degree? (e.g., capstone course, portfolio review, licensure examination)	(4) Who interprets the evidence? What is the process? (e.g. annually by the curriculum committee)	(5) What changes have been made as a result of using the data/evidence?	(6) Date of most recent program review (for general education and each degree program)
List each degree program: 1. Undergraduate	Yes	xxx.xx.edu	1. American Chemical Society standardized test administered to all majors. 2. Faculty review of senior student research projects 3. Annual survey of seniors asking about their learning, the factors that helped them, and suggestions for change.	Undergraduate Studies Committee meets annually to review evidence and take action or make recommendations to the department	In 2009, ACS exam showed weakness in two areas. One course was changed to emphasize those 2 areas more strongly.	2008
2. Ph.D.	Yes	xxx.xx.edu	1. Faculty review of qualifying exams, dissertation, publications, and post-doc placements 2. Grad Student organization conducts survey and makes recommendations.	Graduate studies committee meets as above.	In response to graduate student organization suggestions, changes were made in first-semester teaching, lab, and research responsibilities for new grad students.	2008

Example: Master's Degree

Student Learning Outcomes

Most graduate programs have versions of these three outcomes:

1. Conduct original work in the field (for master's with thesis) or complete a substantial project related to the field
2. Demonstrate ability to carry out professional responsibilities in an ethical manner
3. Master and be able to apply concepts, information, and methods in the field

Make these field-specific. For example, master's in marine science/oceonography: Students completing the M.S. Degree in Marine Science will demonstrate the ability to formulate a significant scientific problem, design an approach to solving the problem, and support the proposed research with appropriate and in-depth oceanographic or other scientific background. Students should integrate core interdisciplinary concepts of Marine Science/Oceanography into their research proposal.

Measure	Goal	Use
Student thesis or other substantial project, evaluated by the faculty who oversee the student's work. These faculty submit an analysis of strengths and weaknesses for the students under their supervision, using a set of criteria developed by the department.	1, 3	Aggregated results are presented to the department for action at the annual assessment meeting.
Internship or practicum supervisor reports, aggregated.	2, 3	As above
Graduate student exit interviews	1, 2, 3	As above

Example: Theater Majors

1.Learning Goals:

All theater majors should be able to:

1. Apply fundamental critical thinking skills to the analysis and interpretation of dramatic literature with particular attention yo acting, designing, or technical production. Such skills to include close reading of dramatic texts, analysis of genre, written and verbal presentations, and cross-cultural and cross-period research and analysis. Students must use both verbal and non-verbal aspects of communication in the presentation of resulting creative works.
2. Select and use, with safety and efficiency, the tools and equipment basic to theatre production technology including those required for both set and costume construction.
3. Communicate to an audience through at least one of the components of theatrical art: acting, designing, stage managing, or technical production.
4. Function effectively as a member of a theatre production team in the preparation of regularly scheduled public productions.

2.Gathering and Using Information about Student Achievement of the Goals

Measure	Goal	Use
Capstone Senior Project. Every senior student makes 10-12-minute presentation of work in his/her area (e.g. acting, design/production) before the entire faculty.	1, 3	Following each round of senior project presentations, faculty each complete evaluation in his/her own discipline, shared with other faculty and with the student. Faculty award grades. When significant number of student fail to pass or overall quality is low, faculty hold separate meeting to identify causes and take action.
Student Acting Auditions presented by each acting- emphasis student before members of acting faculty.	1, 3	Acting faculty meet following the auditions to consider quality of student work and make needed changes.
Production and Design Gateway Assessment through final exams in	1, 2, 3	Faculty in Production/Design track student performance on these exams and make adjustments as needed

Measure	Goal	Use
Scenography and Costume.		
Performance Gateway Assessment through performance at middle and end of first two semesters.	1, 3	Faculty in Performance view the assessment and take notes, guided by competencies stated in the acting curriculum documents. When a significant number of students are found to be unprepared for promotion through these gateway courses, faculty consider causes and takes action.
Theatre Productions. Each major participates in at least one production of a live theatre performance for the public. Students are evaluated by faculty in their discipline at the end of each scheduled production on their ability to work effectively as a team member and communicate with the audience through their chosen medium. Faculty in all the disciplines collaborate to reach composite understanding of the student's overall performance and the performance of the students as a group.	1, 2, 3, 4	When a negative pattern emerges, faculty meet to diagnose any problems in curriculum, course sequencing, and/or instruction methods.
Exit Surveys and Interview. All graduating seniors are encouraged to meet with the chair for an exit interview. Students are asked to share their general impressions about the program.	1, 2, 3, 4	Results from interviews are shared with full time faculty at each annual faculty retreat.

3.Examples of Change Based on Assessment Information

- Acting faculty concluded that many seniors were failing to organize their senior projects to best reflect their actual skills. Faculty reconstructed the course so that it is now under the guidance of a single instructor (as opposed to individual academic advisors), and guided by a more detailed syllabus with progressive deadlines to keep students on track.
- In the acting auditions, in 2008, faculty noted that many first year students were performing poorly in the area of audience communication, referred to as “poise, clarity and brevity of introduction.” The following year, the instructors for Craft of Acting I adjusted their lesson plans to include exercises addressing this specific issue at the end of the semester prior to auditions. Acting faculty have since noted a substantial improvement in first year students’ auditions in this area.
- In 2007, in evaluating the student productions, design/production faculty pointed out that otherwise strong student designers sometimes failed to act as good team members because they had varying notions of their duties and expectations. Faculty responded by researching other university theatre department guidelines for student designers and developing their own. These universal guidelines have greatly improved communication and resulted in much better teamwork among production/design students.

4.Recommendations for Changes to the Assessment Process

To make the interview data more clear and specific, we intend to begin asking standardized questions.

Appendix A: Rubrics

Example: Rubric for Senior Biology Scientific Report

by Virginia Johnson Anderson, Towson University, Towson, MD

Assignment: Semester-long assignment to design an original experiment, carry it out, and write it up in scientific report format. This is the major assignment in this course, titled "Scientific Research." The course was instituted recently as a result of employer feedback that students were insufficiently prepared to really understand and carry out the scientific method. The goal of the course is to prepare students to conduct original scientific research and present it orally and in writing. There were no resources to make this a lab course, so the students had to conduct research outside the lab. Most student graduates will be working with commercial products in commercial labs in the area, e.g. Noxell. In the assignment, students are to determine which of two brands of a commercial product (e.g. two brands of popcorn) are "best." They must base their judgment on at least four experimental factors (e.g. "% of kernels popped" is an experimental factor. Price is not, because it is written on the package).

Rubric for Written Scientific Report

Title

5 - Is appropriate in tone and structure to science journal; contains necessary descriptors, brand names, and allows reader to anticipate design.

4 - Is appropriate in tone and structure to science journal; most descriptors present; identifies function of experimentation, suggests design, but lacks brand names.

3 - Identifies function, brand name, but does not allow reader to anticipate design.

2 - Identifies function or brand name, but not both; lacks design information or is misleading

1 - Is patterned after another discipline or missing.

Introduction

5 - Clearly identifies the purpose of the research; identifies interested audiences(s); adopts an appropriate tone.

4 - Clearly identifies the purpose of the research; identifies interested audience(s).

3 - Clearly identifies the purpose of the research.

2 - Purpose present in Introduction, but must be identified by reader.

1 - Fails to identify the purpose of the research.

Scientific Format Demands

5 - All material placed in the correct sections; organized logically within each section; runs parallel among different sections.

4 - All material placed in correct sections; organized logically within sections, but may lack parallelism among sections.

3 - Material place is right sections but not well organized within the sections; disregards parallelism.

2 - Some materials are placed in the wrong sections or are not adequately organized wherever they are placed.

1 - Material placed in wrong sections or not sectioned; poorly organized wherever placed.

Materials and Methods Section

5 - Contains effective, quantifiable, concisely-organized information that allows the experiment to be replicated; is written so that all information inherent to the document can be related back to this section; identifies sources of all data to be collected; identifies sequential information in an appropriate chronology; does not contain unnecessary, wordy descriptions of procedures.

4 - As above, but contains unnecessary information, and/or wordy descriptions within the section.

3 - Presents an experiment that is definitely replicable; all information in document may be related to this section; however, fails to identify some sources of data and/or presents sequential information in a disorganized, difficult pattern.

2- Presents an experiment that is marginally replicable; parts of the basic design must be inferred by the reader; procedures not quantitatively described; some information in Results or Conclusions cannot be anticipated by reading the Methods and Materials section.

1 - Describes the experiment so poorly or in such a nonscientific way that it cannot be replicated.

Non-experimental Information

5 - Student researches and includes price and other non-experimental information that would be expected to be significant to the audience in determining the better product, or specifically states non-experimental factors excluded by design; interjects these at appropriate positions in text and/or develops a weighted rating scale; integrates non-experimental information in the Conclusions.

4 - Student acts as above, but is somewhat less effective in developing the significance of the non-experimental information.

3 - Student introduces price and other non-experimental information, but does not integrate them into Conclusions.

2 - Student researches and includes price effectively; does not include, or specifically excludes, other non-experimental information.

1 - Student considers price and/or other non-experimental variables as research variables; fails to identify the significance of these factors to the research.

Designing an Experiment

5 - Student selects experimental factors that are appropriate to the research purpose and audience; measures adequate aspects of these selected factors; establishes discrete subgroups for which data significance may vary; student demonstrates an ability to eliminate bias from the design and bias-ridden statements from the research; student selects appropriate sample size, equivalent groups, and statistics; student designs a superior experiment.
4 - As above, but student designs an adequate experiment.
3 - Student selects experimental factors that are appropriate to the research purpose and audience; measures adequate aspects of these selected factors; establishes discrete subgroups for which data significance may vary; research is weakened by bias OR by sample size of less than 10.
2 - As above, but research is weakened by bias AND inappropriate sample size
1 - Student designs a poor experiment.

Defining Operationally

5 - Student constructs a stated comprehensive operational definition and well-developed specific operational definitions.
4 - Student constructs an implied comprehensive operational definition and well-developed specific operational definitions.
3 - Student constructs an implied comprehensive operational definition (possible less clear) and some specific operational definitions.
2 - Student constructs specific operational definitions, but fails to construct a comprehensive definition.
1 - Student lacks understanding of operational definition.

Controlling Variables

5 - Student demonstrates, by written statement, the ability to control variables by experimental control and by randomization; student makes reference to, or implies, factors to be disregarded by reference to pilot or experience; superior overall control of variables.
4 - As above, but student demonstrates an adequate control of variables.
3 - Student demonstrates the ability to control important variables experimentally; Methods and Materials section does not indicate knowledge of randomization and/or selected disregard of variables.
2 - Student demonstrates the ability to control some, but not all, of the important variables experimentally.
1 - Student demonstrates a lack of understanding about controlling variables.

Collecting Data and Communicating Results

5 - Student selects quantifiable experimental factors and/or defines and establishes quantitative units of comparison; measures the quantifiable factors and/or units in appropriate quantities or intervals; student selects appropriate statistical information to be utilized in the results; when effective, student displays results in graphs with correctly labeled axes; data are presented to the reader in text as well as graphic forms; tables or graphs have self-contained headings.
4 - As 5 above, but the student did not prepare self-contained headings for tables or graphs.

3 - As 4 above, but data reported in graphs or tables contain materials that are irrelevant. and/or not statistically appropriate.
2 - Student selects quantifiable experimental factors and/or defines and establishes quantitative units of comparison; fails to select appropriate quantities or intervals and/or fails to display information graphically when appropriate.
1 - Student does not select, collect, and/or communicate quantifiable results.

Interpreting Data: Drawing Conclusions/Implications

5 - Student summarizes the purpose and findings of the research; student draws inferences that are consistent with the data and scientific reasoning and relates these to interested audiences; student explains expected results and offers explanations and/or suggestions for further research for unexpected results; student presents data honestly, distinguishes between fact and implication, and avoids overgeneralizing; student organizes non-experimental information to support conclusion; student accepts or rejects the hypothesis.
4 - As 5 above, but student does not accept or reject the hypothesis.
3 - As 4 above, but the student overgeneralizes and/or fails to organize non-experimental information to support conclusions.
2 - Student summarizes the purpose and findings of the research; student explains expected results, but ignores unexpected results.
1 - Student may or may not summarize the results, but fails to interpret their significance to interested audiences.

Student Scores on Rubric for Science Reports

Trait	Year 1	Year 2
Title	2.95	3.22
Introduction	3.18	3.64
Scientific Format	3.09	3.32
Methods and Materials	3.00	3.55
Non-Experimental Info	3.18	3.50
Designing the Experiment	2.68	3.32
Defining Operationally	2.68	3.50
Controlling Variables	2.73	3.18
Collecting Data	2.86	3.36
Interpreting Data	2.90	3.59
Overall	2.93	3.42

(From Walvoord and Anderson, *Effective Grading: A Tool for Learning and Assessment*, 1998, pp. 197-201, 147).

Example: Rubric for Evaluating Student Literary-Critical Essays

Note: such a rubric may be developed for use by all faculty teaching the gen-ed literature course, or faculty may be free to develop their own rubrics, perhaps using this as a guideline, or faculty may be asked to incorporate one or two common items into their own rubric.

5	4	3	2	1
Thesis: The thesis of the paper is clear, complex, and challenging. It does not merely state the obvious or exactly repeat others' viewpoints, but creatively and thoughtfully opens up our thinking about the work.	The thesis is both clear and reasonably complex.	The thesis of the paper is clear. It takes a stand on a debatable issue, though the thesis may be unimaginative, largely a recapitulation of readings and class discussion, and/or fairly obvious.	Thesis is relevant to the assignment. It is discernible, but the reader has to work to understand it.	Thesis is irrelevant to the assignment and/or not discernible.
Complexity and Originality: The essay is unusually thoughtful, deep, creative, and far-reaching in its analysis. The writer explores the subject from various points of view, acknowledges alternative interpretations, and recognizes the complexity of issues in literature and in	The essay is thoughtful and extensive in its analysis. It acknowledges alternative interpretations and recognizes complexity in literature and in life. Some other	The writer goes somewhat beyond merely paraphrasing someone else=s point of view or repeating what was discussed in class. AND/OR the essay does not integrate other relevant works we have read.	Writer moves only marginally beyond merely paraphrasing someone else's point of view or repeats what was discussed in class.	The paper is mere paraphrase or repetition.

5	4	3	2	1
life. Other works we have read and ideas we have discussed are integrated as relevant. The essay shows a curious mind at work.	works are integrated as relevant.			
Organization and Coherence: The reader feels that the writer is in control of the direction and organization of the essay. The essay follows a logical line of reasoning to support its thesis and to deal with counter-evidence and alternative viewpoints. Sub-points are fashioned so as to open up the topic in the most effective way.	As for "5" but sub-points may not be fashioned to open up the topic in the most effective way.	The reader feels that the writer is in control of the direction and organization of the essay most of the time. The essay generally follows a logical line of reasoning to support its thesis.	The essay has some discernible main points.	The essay has no discernible plan of organization.
Evidence, Support: The writer's claims and interpretations are richly supported with evidence from the works we have read, secondary sources, and sensible reasoning.	As for "5" but the writer may briefly drop into mere plot summary	The writer's claims and interpretations about the works are generally backed with at least some evidence from the works. The writer may briefly drop into mere plot summary	The writer's claims are sometimes backed with evidence and/or the paper drops often into mere	The paper is primarily plot summary.

5	4	3	2	1
The writer assumes the reader has read the work and does not need the plot repeated, but the writer refers richly and often to the events and words of the literature to support his/her points.			plot summary.	
Style: The language is clear, precise, and elegant. It achieves a scholarly tone without sounding pompous. It is the authentic voice of a curious mind at work, talking to other readers of the literary work.	The language is clear and precise.	The language is understandable throughout.	The language is sometimes confusing. Sentences do not track.	The language is often confusing. Sentences and paragraphs do not track.
Sources: The essay integrates secondary sources smoothly. It quotes when the exact words of another author are important, and otherwise paraphrases. It does not	As for “5" but sources may occasionally be quoted with no contextual explanation	The essay does not just string together secondary sources, but uses them to support the writer’s own thinking.	The essay strings together secondary sources.	There is no use of secondary sources.

5	4	3	2	1
just string together secondary sources, but uses them to support the writer's own thinking. Each source is identified in the text, with some statement about its author; there are no quotes just stuck into the text without explanation.	AND/OR writer may use direct quotation and paraphrase in less than optimal ways.			
Grammar, Punctuation: There are no discernible departures from Standard Edited Written English (ESWE)	There are a few departures from ESWE	There are no more than an average of 2 departures from ESWE per page in the critical areas listed below.	There are more than 2.	Some portion of the essay is impossible to read because of departures from ESWE.

Critical Areas:
-Spelling or typo
-Sentence boundary punctuation (run-ons, comma splices, fused sentences, fragments)
-Use of apostrophe, -s, and -es
-Pronoun forms
-Pronoun agreement, and providing antecedents for pronouns
-Verb forms and subject-verb agreement
-Use of gender-neutral language
-Capitalization of proper nouns and of first words in the sentence

Example: Rubric for Journals in English Literature

Assignment: Journals are to record students' questions about the literature and to consider how the literature relates to their own lives and values.
To achieve a C or above, the journal must be handed in on time, must contain the required number of daily entries, and each entry must be at least 250 words.
The faculty member collects and grades the journal entries periodically throughout the course; thus each grade reflects a number of journal entries.
The faculty member grades the journal entries on only two criteria: posing questions and connecting the literature to the students' own lives and values.

Posing Questions

1. The journal entries do not pose any questions and/or or they do not address the literature.
2. The journal entries pose at least one question that relates to the literature, but the question(s) raised are only factual or obvious questions that have simple answers. If the student attempts to answer the question, the answers are brief and limited.
3. As for 2 above, but at least once, the writer wrestles with the question for at least a couple of paragraphs, exploring possible meanings, answers, implications, and relating the discussion to the work of literature. The writer's response shows recognition that more than one interpretation may be valid, and that more than one literary-critical lens may be useful.
4. The journal contains two or more entries where the writer poses and wrestles with a question as in 3 above.
5. The journal entries contain more than three entries that pose questions as for 4 above, and/or at least one question is addressed in several pages of unusually creative musing that address larger issues, extending the discussion to related areas, bringing in other readings, noting underlying assumptions, employing and evaluating more than one literary-critical lens, addressing multiple possible interpretations, or in other ways deepening the inquiry, showing a curious mind at work.

Connecting Literature to Students' Own Lives and Values

1. Journal entries merely summarizes the literature AND/OR merely reflect on the student's own life and values, but make little or no explicit connection between the two.
2. Journal entries summarize the literature AND reflect on the student's life and values. In at least one instance, the entry makes a connection between the two, but the connection is abbreviated, or it uses the literature in a simple way to draw "lessons" to apply to the student's own life.
3. One entry makes thoughtful links between the literature and the student's own life and values. It recognizes the complexity both of the literary work and of life and values.
4. More than one entry does as in 3 above.
5. All of the entries do as in 3 above. The students' musings are rich and deep, showing a thoughtful, reflective mind at work.

Example: Analysis of Student Work by a Faculty Team

Department of Finance, Seattle University:

A committee of faculty examined student senior assignments, in which seniors were asked to write a letter of advice to a hypothetical client—a couple where the wife was retiring and wanted to know whether to invest her lump-sum retirement payout in an annuity or in stocks and bonds.

The faculty members identified four concerns about the student work:

- Random rather than purposeful application of finance tools and methodologies
- Failure to address the client's problem and provide the requested financial counsel
- Inability to translate finance concepts and methods into lay language
- Failure to construct rhetorically useful graphics.

Bean, J. C., Carrithers, D., and Earenfight, T. "Transforming WAC Through a Discourse-Based Approach to University Outcomes Assessment." *WAC Journal*, 2005, *16,* 5-21.

Carrithers, D., and Bean, J. C. "Using a Client Memo to Assess Critical Thinking of Finance Majors." *Business Communication Quarterly*, 2008, *71*(1):10-26.

Carrithers, D., Ling, T., and Bean, J.C. "Messy Problems and Lay Audiences: Teaching Critical Thinking within the Finance Curriculum." *Business Communication Quarterly*, 2008, *71*(2):152-170.

Short summary in Walvoord, B. E., and Anderson, V. J. *Effective Grading: A Tool for Learning and Assessment in College* (2nd ed.). San Francisco: Jossey-Bass, 2010, pp. 175-178.

Appendix B: Data for Presentation to Department Annual Meeting

A Department of Economics

Measures

- **Direct: Analysis of the senior capstone research** projects (written papers plus oral presentations). Three faculty examined a sample of written papers and attended oral presentations for a sample of senior students. These faculty produced written analyses of the student work, using the learning goals as criteria. These analyses were submitted to the assistant chair.
- F**ocus groups of current students**, who met for an hour with the assistant chair
- **Alumni Survey**, conducted by the department under the leadership of the assistant chair, asking alumni to
    - Rate how important each of the learning goals were to them in their careers. 5 = essential; 4 = very important; 3 = important; 2 = slightly important; 1 = not important
    - Rank how well they had achieved this goal during their major. 7^{th} = highest; 1^{st} = lowest.

Goals, Assessment Methods, and Findings

Goal: Critical thinking (analytical) and communication skills, to enable undergraduate students to think and communicate like economists (in other words, to become skilled in the logic and rhetoric of economics)

Sub-Goals/Objectives	**Alumni Survey: Importance (5 = Essential; 1 = not important)**	**Alumni Survey: Achievement (7^{th} = highest)**	**Analysis of Capstone Student Projects**	**Focus Groups Current Students**
A. Mathematical Methods: The use of mathematical	4.33 Very important	2^{nd} of 7 objectives.	None included math.	Amount of math varies among classes. Maybe calculus should be required.

Sub-Goals/Objectives	Alumni Survey: Importance (5 = Essential; 1 = not important)	Alumni Survey: Achievement (7^{th} = highest)	Analysis of Capstone Student Projects	Focus Groups Current Students
methods to represent economic concepts and to analyze economic issues		Low		
B. Theoretical Models: To represent economic relationships in terms of theoretical models	4.33 Very important	3rd of 7 objectives. Low	Models used in papers and presentations with reasonable success.	Achievement is enhanced by having TA sessions. Theory course is good foundation if taken before other courses.
C. Gather Data: To gather economic data pertinent to economic theories in order to analyze economic questions	4.17 Very important.	5th of 7 objectives. High	Students showed an ability to collect data but over-relied on the web	Library research used in a few classes only.
D. Statistics: To use statistical methods to analyze economic questions	3.83 Very important	6^{th} of 7 objectives. High	Little evidence of statistical methods	Limited exposure. Complaint about book used.

Sub-Goals/Objectives	Alumni Survey: Importance (5 = Essential; 1 = not important)	Alumni Survey: Achievement (7^{th} = highest)	Analysis of Capstone Student Projects	Focus Groups Current Students
E. Software. To use statistical computer software to analyze economic issues	3.33 Important	7^{th} of 7 objectives. Highest	Little evidence of use	Concern that software used in career will be different
F. Writing. To express economic ideas succinctly and professionally in writing	4.17. Very important	4^{th} of 7 objectives. Medium	Writing skills of students generally acceptable, but not "very good" or "excellent"	Writing required more than speaking. In particular, research papers required in 588 and 575
G. Oral. To express economic ideas succinctly and professionally orally	4.5. Very important/ essential	1st of 7 objectives. Lowest.	Presentations revealed a lack of training in how to present, as well as nervousness.	Most courses do not involve oral communication, although it would be useful after graduation in the workforce. One idea was a sequence of courses in communication as part of the Arts and Sciences college requirements. More discussion and presentations were advised.

Resources

- Walvoord, B. E. *Assessment Clear and Simple: A Practical Guide for Institutions, Departments, and General Education*. 2nd ed. Jossey-Bass, 2010. In 79 pages plus appendices, I try to give institutions, departments, and gen ed programs all they will need.
- Palomba, C. A., and Banta, T.W., eds. *Assessing Student Competence in Accredited Disciplines: Pioneering Approaches to Assessment in Higher Education.* Sterling, VA: Stylus Publishing, LLC, 2001. At 350 pages, it gives more extensive details on many of the subjects covered in Walvoord.
- Banta, T.W., Jones, E.A., and Black, K.E. *Designing Effective Assessment: Principles and Profiles of Good Practice.* San Francisco: Jossey-Bass, 2009.
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