Ocean County College

Learning Assessment Committee

Tools and Techniques for General Education Assessment

An Overview and Bibliography

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## NJCC Goal Categories

* **Written and Oral Communication (Communication)**
  + Students will communicate effectively in both speech and writing
* **Quantitative Knowledge and Skills (Mathematics)**
  + Students will use appropriate mathematical and statistical concepts and operations to interpret data and to solve problems
* **Scientific Knowledge and Reasoning (Science)**
  + Students will use the scientific method of inquiry, through the acquisition of scientific knowledge
* **Technological Competency (Technology)**
  + Students will use computer systems or other appropriate forms of technology to achieve educational and personal goals
* **Society and Human Behavior (Social Science)**
  + Students will use social science theories and concepts to analyze human behavior and social, economic, and political institutions, and to act as responsible citizens
* **Humanistic Perspective (Humanities)**
  + Students will analyze works in the fields of art, music, or theater; literature; philosophy and/or religious studies; and/or will gain competence in the use of a foreign language
* **Historical Perspective (History)**
  + Students will understand historical events and movements in the World, Western, Non-Western, or American societies and assess their subsequent significance
* **Global and Cultural Awareness**
  + Students will understand the importance of a global perspective and culturally diverse peoples
* **Ethical Reasoning and Action**
  + Students will understand ethical issues and situations
* **Information Literacy**
  + Students will address an information need by locating, evaluating, and effectively using information
* **Independent/Critical Thinking**
  + Students will demonstrate independent/critical thinking in the humanities, natural sciences, and social sciences

## Assessment Tools[[1]](#footnote-1)[[2]](#footnote-2)

* **Locally Developed Tests**
* **Standardized Tests**
* **Course-Embedded Assessment**
* **Portfolios**
* **Capstone Experience Course**
* **Performance Assessment**

## The Case for Assessing General Education

If used appropriately, assessment of general education can be a meaningful and valuable component of institutional accountability. Assessment of General Education Learning Outcomes can also be a mechanism for transformation as part of institutional self-reflection. It can answer questions such as:

1. Are students learning what they should be learning?
2. Which teaching, curricular, and co-curricular approaches are working well, and which approaches need to be modified?
3. What additional education experiences should be furnished to students, and how should our existing experiences be reorganized?
4. Is our process for assessing General Education working effectively?

Jeremy Penn responds to some of the most common critiques:[[3]](#footnote-3)

* **General Education Learning Outcomes Cannot be Assessed with Existing Tools**
  + Some existing measures exist; the *Mental Measurements Yearbook* can be used to search for tools. The VALUE project developed rubrics that are free to use or adapt.
* **General Education Learning Outcomes Cannot be Taught**
  + Some view that academic abilities such as critical thinking and quantitative analysis cannot be taught. Others contrast that time and not innate ability is the most essential element related to student success.
* **Results From Assessment of General Education Learning Outcomes Are Never Used for Anything**
  + Reasons cited include lack of a shared vision, failure to clearly define outcomes, failure to gather meaningful data, distrust in quality of measures, and lack of faculty involvement. Bresciani cites case studies of success.[[4]](#footnote-4)
* **Assessment of General Education Learning Outcomes is a Threat to Academic Freedom**
  + Assessment of General Education is seen as an external intrusion into curriculum. Course level grading may not be the best way to gather evidence on student achievement of general education learning outcomes.

## Locally Developed Tests

**Description**

Tests developed by faculty that can align precisely with campus general education outcomes. Because they can be scored by faculty they can include authentic assessment, performance assessment, questions that reveal depth of understanding, and can be conducted as oral interviews. A number of different formats are commonly used: completion, multiple-choice, matching, and true-false. These objective questions typically assess recall and recognition, i.e. surface level learning, and not deeper understanding.[[5]](#footnote-5)

Competence Interviews (oral exams) can be used to assess Gen Ed Learning Outcomes. Interviewers can ask questions to determine the depth of student understanding. Calder and Carlson recommend *think alouds* to assess understanding, arguing traditional written exams and competence interviews overestimate the learning of more fluent students and underestimate less fluent ones.**[[6]](#footnote-6)**

**Advantages**

* They are more readily accepted by faculty
* There is a greater likelihood of faculty using the results
* They are often easier to fit for local curriculum/program
* Can utilize objective and essay questions, performances, and oral exams allowing exploration of a variety of learning outcomes
* Competence interviews allow faculty to assess depth of understanding, oral communication skills, critical thinking, and problem solving.
* Graded components of courses increase student motivation

**Disadvantages**

* Time and effort of faculty to construct a reliable, valid, and unbiased test
* Lack of external credibility
* Lack of opportunity to make comparisons of student performance outside the institution
* Locally developed tests have unknown reliability and validity
* Competence interviews require development of interview protocol and training

**Recommendations**

* A test blueprint should be created before writing questions and faculty should determine the knowledge, skills, or values to be addressed; their priority on the exam; and appropriate depth of understand.
* Test developers should verify exam questions align with learning outcomes and consider the curriculum that students have experienced.
* The test might be invalid if students have not been given the opportunity to practice and develop the skills, knowledge, and values the test is measuring.
* Exams will more clearly target learning outcomes when students are required to develop complex answers. Faculty should consider asking students to respond to case studies or other tasks.
* Pilot exams and scoring guides should be created before implementation

**Example of Campus Use**

Mesa Community College uses locally developed tests by comparing results from incoming freshmen to students completing general education requirements. Faculty volunteers were recruited and courses with a large share of beginning students or completing students were targeted. All assessments were administered by faculty in regular class sessions during Assessment Week.

“Faculty followed a standard protocol for the assessment. Students were informed that the purpose of the assessment is to measure whether education goals are being achieved in order to improve programs and student learning. Students were assured that results are not reported by student or by class but are evaluated across the college. Completed assessments, along with an Assessment Submittal form, were returned to ORP. Faculty were asked to complete the following information on the submittal form: whether they provided an incentive to students, how long it took to administer the assessment, whether they had any problems administering the assessment, and what they would suggest to improve the process. About 41% of the faculty reported they had offered an incentive to students for participating in the assessment.”[[7]](#footnote-7)

## Standardized Tests[[8]](#footnote-8)

**Description**

Professional test publishers such as Education Testing Service and College Board have developed instruments for assessing general education programs. Examples:

* The ETS Proficiency Profile: <https://www.ets.org/proficiencyprofile/about>
* ACCUPLACER: <https://accuplacer.collegeboard.org/professionals>
* ASSET: <http://www.act.org/content/act/en/products-and-services/act-asset.html>
* The California Critical Thinking Skills Test <http://www.insightassessment.com/Products/Products-Summary/Critical-Thinking-Skills-Tests/California-Critical-Thinking-Skills-Test-CCTST>
* The Collegiate Assessment of Academic Proficiency: CAAP; <http://www.act.org/caap/index.html>
* The Collegiate Learning Assessment: CLA; <http://cae.org/participating-institutions/cla-references>
* COMPASS (<http://act.org/compass>)
* The Watson-Glaser Critical Thinking Appraisal (<http://www.thinkwatson.com/assessments/watson-glaser>)

**Advantages**

* They are more likely to be both reliable and valid
* They provide comprehensive coverage of the subject area/domain to be assessed
* The ready availability of such instruments saves time and effort
* Allow for comparability of student performance outside the institution

**Disadvantages**

* There is frequent opposition of faculty to standardized tests
* The reluctance of faculty to use the results
* The possible disparity between test and curriculum
* Most rely heavily on multiple-choice and may not asses depth
* Scores may be too broad to be actionable
* Campuses may find it difficult to motivate students and faculty to take them seriously

**Recommendations**

* Critical reviews of tests are available in the *Mental Measurements Yearbook* published by the Buros Institute.
* Verify that the items and scores are reasonable for the purpose.
* Student Motivation is important; it recommended to use an orientation to convince students of the importance, provide feedback to students on their scores, embed the test in a relevant course, host a lottery to award prizes for specified scores, or provide awards to the class or club with the highest score.

**Examples of Campus Use**

The University of Wisconsin-Green Bay General Education Assessment Program utilized Standardized Testing until 2014. The achievement test was the College BASE (College Basic Academic Subjects Examination), a commercially published, criterion-referenced test battery that measures twenty-two specific skills in English, mathematics, science and social studies.

The entire test includes 180 multiple-choice items. It provides 39 scores including a measure of proficiency in English, mathematics, science and social studies; nine sub scores, called cluster scores, which represent proficiency in specific areas within each curricular area; and 22 skill scores distributed throughout the subject areas.  All students, including transfers, who had earned between 54 and 72 credits at the end of a given semester were required to complete the UW-Green Bay General Education Assessment program. The College BASE was designed to provide students with an assessment of their general education knowledge and skills, independent of course grades.  The test also provided the institution with feedback regarding the general education skills and knowledge of students as they begin their junior year at UW-Green Bay.

**The program consisted of:**

**Orientation Session** (optional). 15-20 minute online tutorial/survey.  During this orientation, the purpose of the General Education Assessment Program and participation requirement was be explained.  Students also completed a survey consisting of a series of questions about the exam and other research information.  
**Testing Session** (required). Up to 2 hours.  During this session, students took the College BASE, a criterion-referenced test that assessed general education knowledge and skills.  Students were randomly assigned to complete two of the four subject area tests - Mathematics, Science, English, and Social Studies.  
**Feedback session** (optional). 15-20 minute online tutorial/survey.  The feedback session provided information about what the scores mean and how students could improve their general knowledge and skills.  Students also completed a survey that included questions relating to their performance on the test. [[9]](#footnote-9)

## Course-Embedded Assessment

**Description**

Course-Embedded Assessment is the use of a course to implement institutional assessment activities. The data can be provided by community-service learning or fieldwork activities, exams and parts of exams, homework assignments, oral presentations, group projects and presentations, and in-class writing or learning journals.

**Advantages**

* Students are motivated because they will be graded or because the activities tie directly into their courses
* Assessment is incorporated into faculty teaching
* Data collection is unobtrusive and requires little additional workload
* Out-of-class assignments allow students to demonstrate learning without time constraints or timed tests
* Faculty developed embedded assessment projects increasing alignment between courses and learning outcomes

**Disadvantages**

* Embedding the same assessment in multiple courses requires coordination
* Faculty must agree on a grading scheme
* Because data can be tied to specific faculty, safeguards must be put in place to guarantee assessment is of the program and not individuals
* Assignments may need development to focus on targeted learning outcome

**Recommendations**

* Assessment should be embedded in more than one course taught by more than one instructor so information can be generalized to the program as a whole
* As with locally developed exams, faculty should pilot-test embedded assignments and scoring guides
* Faculty should review assessment as a group to immediately discuss implications of results

**Example of Campus Use**

University of Akron Wayne College is a two year regional branch that has implemented a course-level embedded outcomes model. Their plan is based on an embedded outcomes model that links *course level student outcomes* to *program learning outcomes* to each of the technical associate degrees or the general education program. The *program learning outcomes* were then linked to *college-level (institutional) learning outcomes.* It is based on two templates that are completed at the beginning and end of every term. (Form A and Form B)

Form A has four columns: “College Level Learning Outcomes,” “Program Learning Outcomes,” “Course Outcomes,” and “Methods of Assessment for the Course Outcomes.” Form A documents that every program learning outcomes is assessed in at least one course; instructors use pretests and posttests, in-class exercises, annotated portfolios, interactive technology, and self-assessment techniques to assess course learning outcomes each semester. At the end of the term Form B summarizes their assessment results and any changes in course structure, teaching methods, or assignments.[[10]](#footnote-10)

A medium sized public university utilized a faculty-driven course embedded assessment process that allowed for flexibility in teaching style. The first step was to transform course objectives to general education learning outcomes; this was done in some cases by rewording objectives and substituting critical thinking for coverage. Instructors were able to cover the same material but now with a focus on critical thinking and the basic skills in the general education outcomes.

All instructors in a course under review were asked to attend a workshop and supply rubrics, general course syllabi, section syllabi, sample tests, etc. Data was reported by the instructors to the General Education Area Committee; this data included a syllabus, assessment data entered into a standard form, rubrics, sample work, and reflections on data analysis results. Student work is assessed as “exceeds expectations,” “meets expectations,” or “does not meet expectations,” based on whether the work would be accepted at the “senior level.”[[11]](#footnote-11)

## Portfolios

**Description**

*Developmental Portfolios* containing work early and late in a student’s academic career are used to document growth. Students are required to organize portfolios around learning outcomes and generally to write a reflective essay on how the works demonstrate mastery. On some campuses, the portfolio is a collection of all general education products without required analysis.

Portfolios may be collected as part of a graded requirement of a capstone course, or they may be collected from a subset of students. Portfolios assessing written communication skills may be developed over a single course or a sequence of writing courses. Hard-copy portfolios are common but *digital portfolios* are increasingly utilized and reduce the need for storage and access problems for assessment teams.

An alternative type is *collective portfolio* in which faculty create a single portfolio by selecting several students’ work relevant to a learning outcome. Rather than many student portfolios, faculty assess evidence from a limited number of students focusing on one outcome. Student-created portfolios require student effort while collective portfolios require no additional time demands. These are a variation on embedded assessment and can provide excellent data on particular outcomes. Sampling must be done carefully however so results can be generalized to the entire program and maintain validity.

**Advantages**

* Requires students to take responsibility for their learning and reflect upon it
* Assembling the portfolio encourages students to monitor their own learning and recognize the impact of their education
* Faculty who review portfolios have insight into student learning, and a window into other instructors’ courses, assignments, and expectations

**Disadvantages**

* Student resentment if instructions aren’t clear or time demands are excessive.
* If portfolios are not graded it may be difficult to motivate students to take the task seriously – but grading takes faculty time.
* Storage for Hard-Copy portfolios.
* Student assistance will need to be incorporated into courses and faculty office hours

**Recommendations**

* Faculty should specify expectations for portfolio content, length, organization, and format; also if evidence can be included from courses outside the general education program or materials in various formats (i.e. audio-visual)
* Determine how and when students will learn about portfolio requirements; expectations for transfer students and lost assignments; when and how to collect portfolios; if graded, how grades are determined; who will have access and how privacy is protected; who owns the portfolios and will they be returned to the students
* Portfolios can be integrated into capstone courses, separate portfolio courses, or senior level courses in a major, or accumulated as routine submissions each semester
* When assessing portfolios use rubrics to focus reviewers on outcomes.
* For a large number of portfolios, consider assessing a sample.
* Use a subset of students and offer incentive such as bookstore credit, tickets, etc.
* Electronic Format reduces storage needs.
* For Collective Portfolio use a random process to select students.

**Examples of Campus Use**

Clemson University has implemented an ePortfolio requirement using Google Sites as its ePortfolio tool and CUePort, a tagging/assessment system developed in-house that allows students to tag evidence to general education competencies. Students were provided with “just in case” learning opportunities such as online tutorials, workshops, mentors, and in-class visits. Faculty buy-in and understanding was encouraged through workshops, brown bag lunches, and visits with student advisors. In a common experience freshmen class the students watch video modules, create the portfolio, and set up a practice artifact.

The assessment plan utilizes multiple sources of feedback and review including self-assessment, peer assessment (formative assessment), and faculty assessment (summative assessment). Each summer faculty members from various disciplines conduct an assessment of portfolios, and each is sent a list of the Gen Ed competencies and asked which they are best suited to assess. This assessment is done on-site due to the benefits of working together and sharing ideas. Participants are encouraged to commit to two summers to have a balance of seasoned and novice assessors. The opportunity for faculty to “read” ePortfolios has provided a better understanding of what students are learning through the curriculum and those faculty who participate have a more favorable view of the ePortfolio and are more willing to integrate it into their courses.[[12]](#footnote-12)

## Capstone Course

**Description**

“In general education, a capstone experience is usually a course or experience where students are required to draw from the knowledge they have gained from a variety of experiences and courses, organize and synthesize the knowledge and skills developed, take and defend positions, both orally and in writing, and perhaps prepare a report that includes data to support recommendations. The development and assessment of a capstone experience is usually a joint effort of the faculty in a program or, in the case of general education, a cross-section of faculty from a variety of disciplines. The capstone experience, including the structure and content, needs to be clearly linked to the purposes and objectives of the program or institution, including general education, and what the students need to have learned in order to graduate from the program or institution.”[[13]](#footnote-13)

**Advantages**

* Help students integrate subfields, skills, and perspectives.
* Creates opportunities for multiple assessments and allows direct faculty analysis of cumulative learning.
* Efficiently and effectively measure student learning; can be used for Major Program assessment
* Students are motivated to complete the work as it is graded
* Can incorporate the course-embedded and/or portfolio assessment tools

**Disadvantages**[[14]](#footnote-14)[[15]](#footnote-15)

* May not allow enough time for students to complete comprehensive projects
* May not produce the data needed if the exercises or projects used by faculty do not link to broad outcomes
* May only allow time for students to address Major Program outcomes
* There is typically no course for remediation or failure
* Requires faculty to depart from specialized agenda and focus on an integrated experience

**Recommendations**

* Team teaching brings opportunities for faculty several times a week to reflect on and discuss student learning
* Students can produce a selected portfolio to reflect on college learning experiences
* Produce a course agreeable to all faculty that meets the objectives of integrating student knowledge.

**Example of Campus Use**

A one credit hour capstone course that can be used as a model with four exercises allowing for multiple forms of assessment. The primary activity is an academic conference in which students resurrect papers and prepare them for presentation. Panel sessions occupy four to eight weeks of the course with the instructor as chair to generate discussion of broader themes. The paper and presentation serve as two artifacts to assess oral communication, written communication, and critical thinking. The students then conduct a peer review of two other papers.

The students then complete a course mapping exercise of their perceptions of where they gained – or were exposed to – instruction to enhance particular skills. There is also an Open-Ended Exit Survey to identify strengths and weaknesses of the program. The final activity requires ‘teaching teams’ to deliver a presentation to small breakout groups of students in an introductory 100 level course.[[16]](#footnote-16)

Highland Community College created a Sophomore Capstone Experience course. They identified five main issues: The Dual Purpose of the Course (Assessment and Student Benefit), the Construction of the Course, the Role of the Instructor, Evaluation of Projects, and the Significance of the Results. The course was an 8-week 2-credit course that was tuition free; there were three sections limited to 12 students and facilitated by two instructors each. The course required students to complete four projects: two in response to prompts, (a film and a short novel), a personal portfolio, and a career project. Students were asked to have at least one oral report, written report, team project, individual project, and one project including numerical support.[[17]](#footnote-17)

Truman State University also utilizes a capstone course.[[18]](#footnote-18)

## Performance Based Assessment

**Description**

Performance Assessment is an assessment method that requires students to perform a task rather than take a test. It is designed to judge the ability to use certain skills or knowledge to demonstrate mastery rather than recall. It is sometimes called *authentic assessment* because it involves real life context. Examples in General Education would be analysis of recordings of speeches, analysis of written prose, essays, term or research papers, responses to case studies, or formal presentations. Some courses will allow for simulations that must be solved using knowledge and skills from the course allowing faculty to assess mastery of course content and general education goals. An example would be to ask students to assume the role of a city council debating a controversial issue; they would be asked to research both sides and give a persuasive speech or write and action plan.[[19]](#footnote-19)

**Example of Campus Use**

Since 1973 Alverno College has used performance based assessment. To earn a degree, they must demonstrate ability-based competency; the general education curriculum provides the opportunity for students to develop and demonstrate eight abilities: communication, analysis, problem solving, valuing in decision-making, effective interaction, global perspectives, effective citizenship, and aesthetic response.

Students engage in assessment through their coursework and sometimes part of the general education curriculum but outside their coursework; some are specific to fields of study, some are designed for all students. Assessments often involve simulation with faculty serving as the primary assessors; additionally 400 members of the professional community serve as volunteer assessors –they participate in a training program designed and implemented by the faculty.

Entering students begin their academic program with a day-long assessment to identify their communication abilities. When faculty design an assessment they clarify which ability is to be demonstrated and to design a stimulus – such as a question or set of instructions. Students then ‘create’ their performances and are asked to judge their performance based on identified criteria. Faculty then judge the performance and give feedback on which criteria were met, which were deficient, and with evidence to clarify why and how. This ability based assessment process generates the evidence that students are learning the abilities.[[20]](#footnote-20)

## Rubrics

**Description**

Rubrics typically have three to five categories and measure student understanding: i.e. ‘novice,’ ‘developing,’ ‘proficient,’ ‘expert,’ – terms such as *average* or *below average* are typically not used. VALUE (Valid Assessment of Learning in Undergraduate Education) is a campus-based assessment initiative sponsored by the AAC&U (Associate of American Colleges and Universities). The VALUE rubrics include: [For Example see Appendix A]

* Inquiry and Analysis
* Critical Thinking
* Creative Thinking
* Written Communication
* Oral Communication
* Quantitative Literacy
* Information Literacy
* Reading, Teamwork
* Problem Solving
* Civic Knowledge and Engagement – Local and Global
* Intercultural Knowledge and Competence
* Ethical Reasoning and Action
* Global Learning
* Foundations and Skills for Lifelong Learning
* Integrative Learning.[[21]](#footnote-21)

**Strengths of Rubric Use[[22]](#footnote-22)**

* Helps faculty clarify their expectations. Faculty may agree students should develop critical thinking and communication skills, but may have different conceptions.
* Assessment is more likely to be reliable, valid, and actionable.
* Complex products or behaviors can be assess efficiently.
* Once criteria for assessing outcomes are clear, faculty can better align their courses to help students meet these expectations.

**Example of Campus Use**

Appalachian State uses the VALUE rubrics by tying them to General Education leaning Outcomes and Components. The specified General Education Goals are:

1. Thinking critically and creatively
2. Communicating effectively
3. Making local to global connections
4. Understanding responsibilities of community membership

These main goals are then tied to one or two Gen. Ed. Learning Outcomes (See 1A and 1B below) and charted to components of the Gen. Ed. Program such FIRST YEAR SEMINAR, FIRST YEAR WRITING, SECOND YEAR WRITING, HISTORICAL AND SOCIAL. These learning outcomes are then assessed using one of the VALUE rubrics.

**2009-2012 General Education Learning Outcomes Selected For Assessment**

|  |  |  |
| --- | --- | --- |
| **GENERAL EDUCATION LEARNING OUTCOME** | **GENERAL EDUCATION COMPONENTS** | **RELATED VALUE RUBRIC** |
| 1A – Recognize, differentiate, and effectively employ appropriate and increasingly sophisticated strategies to collect and interpret information | FIRST YEAR SEMINAR  FIRST YEAR WRITING  SECOND YEAR WRITING  HISTORICAL AND SOCIAL | [Inquiry and Analysis](http://generaleducation.appstate.edu/sites/generaleducation.appstate.edu/files/pdfs/InquiryAnalysisRubric.pdf) |
| 1B- Successfully integrate disparate concepts and information when interpreting, solving problems, evaluating, creating, and making decisions | FIRST YEAR SEMINAR  QUANTITATIVE LITERACY  WELLNESS LITERACY  FIRST YEAR WRITING  SECOND YEAR WRITING  AESTHETIC PERSPECTIVE  [SCIENCE INQUIRY](http://generaleducation.appstate.edu/science-inquiry-assessment) | [Integrative Learning](http://generaleducation.appstate.edu/sites/generaleducation.appstate.edu/files/pdfs/integrativelearningRubric.pdf)    [Science Inquiry Pilot Rubric](http://generaleducation.appstate.edu/science-inquiry-assessment) |

Appalachian state uses the ePortfolio assessment tool with the following process: the ePortfolio coordinator will arrange for samples of portfolios to be reviewed from Rhetoric and Composition (WAC), First Year Seminar, or Capstone programs. Rubrics used in the ePortfolio reviews will be mapped to General Education goals.[[23]](#footnote-23) [[24]](#footnote-24) Twelve other case studies have been made available online by the AACU.[[25]](#footnote-25)

## General Education Alignment Matrix

Well-designed curricula should be a pathway for learning; alignment determines if the pathways students are taking systematically leads to agreed-upon General Education learning outcomes. A *cohesive curriculum* provides students multiple opportunities to synthesize, practice, and develop complex idea and skills by setting a course order through prerequisites. Community colleges only offer lower division courses, but may require a general education capstone course to promote consolidation and integration of learning.

A way to conceptualize this program is through an alignment matrix or curriculum map. Many colleges allow general education courses to be taken in any order without a capstone requirements which makes scaffolding difficult. An alignment matrix will use certain designations to indicate introduction of a learning outcome, development, or mastery.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| *Course* | *GE Outcome 1* | *GE Outcome 2* | *GE Outcome 3* | *GE Outcome 4* |
| Freshman Basic Skills Course 1 | I |  |  |  |
| Freshman Basic Skills Course 2 |  | I |  |  |
| Freshman Basic Skills Course 3 |  |  | I |  |
| Freshman Basic Skills Course 4 |  |  |  | I |
| Sophomore Level Courses | D | D | D | D |
| Capstone Course | M | M | M | M |

I = Introduce; D = Develop; M = Mastery

In General Education Programs where there is little scaffolding and courses work independently, faculty may not be confident in what students already know and they may receive multiple introductions to one outcome, but nothing beyond the introductory level. Students may also only be expected to take one course meeting each outcome, and this course is expected to introduce, develop, and impart mastery.

Creating pre-requisites within the general education program would provide students the opportunity to practice and integrate what they’ve learned. Freshman experience courses might introduce information literacy which can be built upon in subsequent courses. Capstone courses would allow students higher level integration.[[26]](#footnote-26)

## Further Reading

All articles have been hot-linked via an Ocean Connect Page. To Access: log into Ocean Connect, Select the Library Services Tab, on the left hand side will be a link to ‘Learning Assessment Committee.’ All books listed below are on Reserve at the library circulation desk or will be one they become available.

**Books**

Allen, Mary J. *Assessing General Education Programs.* San Francisco: Anker Publishing Company, 2006. *(On Reserve)*

Astin, Alexander and Anthony Antonio. *Assessment for Excellence: The Philosophy and Practice of Assessment Evaluation in Higher Education* *(On Order)*

Banta, Trudy and Borden Victor. *Using Performance Indicators to Guide Strategic Decision Making.* San Francisco: Jossey-Bass, 1994. *(On Reserve)*

Banta, Trudy. *Making a Difference: Outcomes of a Decade of Assessment in Higher Education.* San Francisco: Jossey-Bass, 1993. *(On Reserve)*

Engvall, Robert. *Corporatization of Higher Education: The Move for Greater Standardized Assessment Programs.* Cresskill: Hampton Press, 2010. *(On Reserve)*

Marzana, McTigue, and Pickering. *Assessing Student Outcomes: Performance Assessment Using the Dimensions of Learning Model.* Alexandria: Association for Supervision and Curriculum Development, 1993. *(On Reserve)*

Miller, Imrie, and Cox. *Student Assessment in Higher Education: A Handbook for Assessing Performance (On Order)*

Nichols, James O., and Karen Nichols. *General Education Assessment for Improvement of Student Academic Achievement: Guidance for Academic Departments and Committees.* Agathon Press, 2001. *(On Order)*

Suskie, Linda. *Assessing Student Learning: A Common Sense Guide* *(On Order)*

**Articles**

Basile, Joseph C., II, Nancy J. Thabet, and Charleston. West Virginia State Dept. of Education. "Meeting Educational Needs of Handicapped Students: Special Education Interfacing with General Education." (April 1, 1987): *ERIC*, EBSCO*host*

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Bocala, Candice, et al. "Do States Have Certification Requirements for Preparing General Education Teachers to Teach Students with Disabilities? Experience in the Northeast and Islands Region. Issues & Answers. REL 2010-No. 090." *Regional Educational Laboratory Northeast & Islands* (July 1, 2010): *ERIC*, EBSCO*host*

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Calder, Lendol, and Sarah-Eva Carlson, “**Using ‘Think Alouds’ to Evaluate Deep Understanding,” in** *Proving and Improving. Volume ll: Tools and Techniques for Assessing the First College Year. The First-Year Experience Monograph Series No. 37*, ed. Randy Swing (National Resource Center for The First-Year Experience and Students in Transition, 2004): 35-38 *ERIC*, EBSCO*host*.

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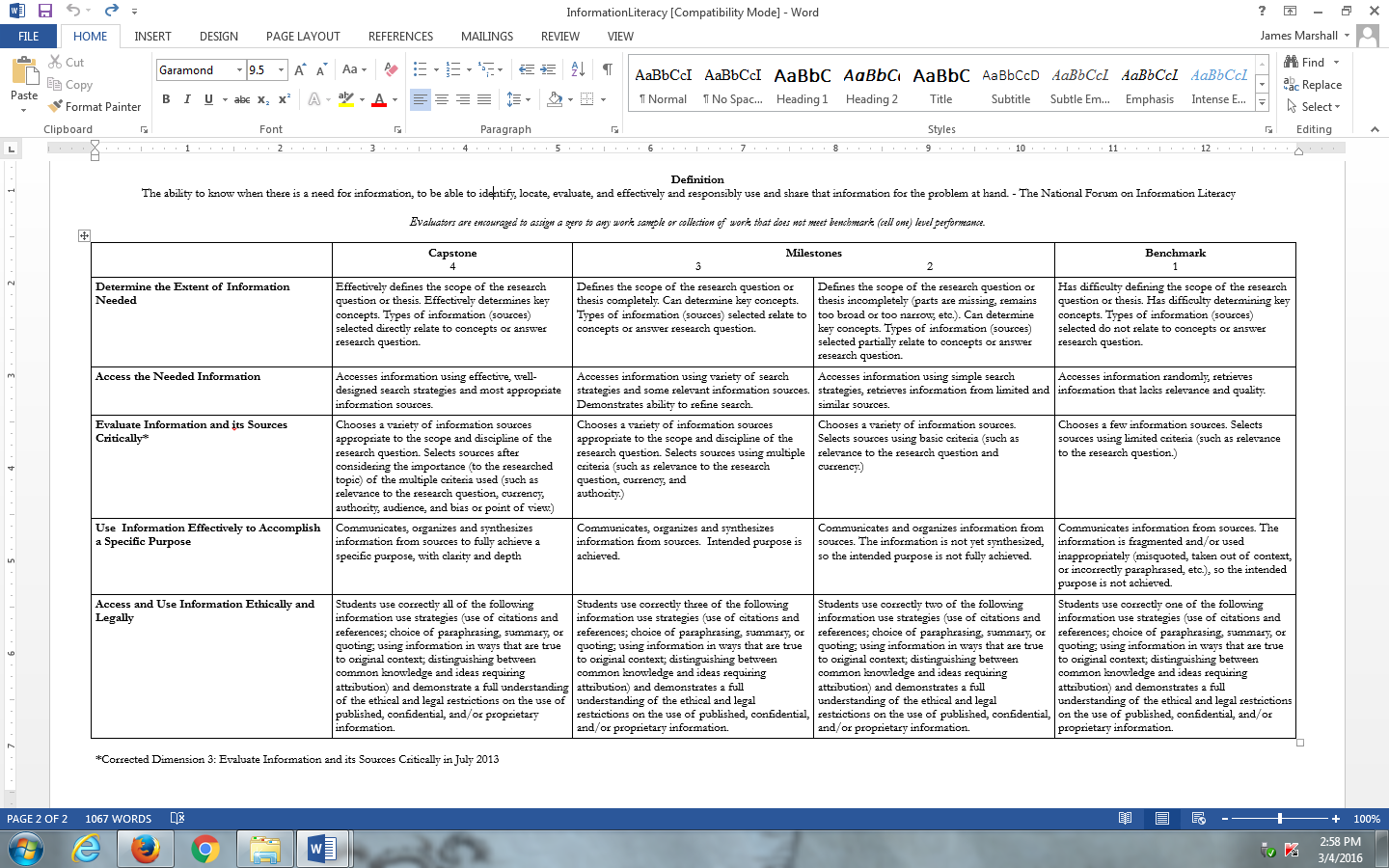
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