**Assessment Guide and Procedures for Faculty**

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**Purpose of course assessment**

Classroom assessment of student learning helps LRSC faculty to obtain useful feedback information on what, how much, and how well their students are learning. This information can be used to help faculty refocus their efforts to make student learning more efficient and effective. Teaching without learning is just talking, so it is important to determine if learning has occurred. As an integral component of the accreditation process, it is vital that LRSC faculty provide evidence student learning has occurred in their courses specific to the course objectives and general education goals of the college. It may be evident that there is need for improvement in the delivery of the instruction. Therefore, this process can provide the guide for improving student learning. According to the Higher Learning Commission, “a focus on achieved student learning is critical not only to a higher education organization’s ability to promote and improve curricular and co-curricular learning experiences and to provide evidence of the quality of educational experiences and programs, but also to fulfill the most basic public expectations and needs of higher education.”

**Procedure for completing the course assessment checklist (page 4):**

1. At the beginning of the course, choose one general education goal and one course objective to assess. Type these in the space provided on the checklist. Also determine if this will be the start of a new process of teaching/method of assessment (opening the loop) or an assessment of something done previously (closing the loop).
2. Determine the appropriate method to assess student learning. A list of possible tools/methods is provided in this document along with a brief description of each. Use the examples or samples methods as the guide.
3. Instructors are encouraged to address different course objectives and general education goals over a period of years.
4. To determine the sample quantities required for the assessment follow these guidelines:
* The instructor should include enough samples to be representative of the class population.
* A suggested acceptable sample quantity will be four (4) or twenty percent (20%) of the class, whichever is greater.
* The evidence should include student samples that represent all grade categories.
1. Instructors must eliminate from the samples all names or recognizable marks that would indicate a student’s identity if the samples are included. All student samples submitted shall be graded or evaluated by the instructor and have those grades or comments clearly marked on the samples. . If only data is included, a sample of the assessment is to be provided.
2. The Assessment Committee encourages using multiple methods of assessment done over multiple times throughout the course. Sample assessments are provided for use as a guide. The method of assessment must measure the course objective and be appropriate to the General Education Goal. Indicate which of the following forms of assessment was utilized during this process by selecting the appropriate box on the checklist.
* Essay writing
* Class Projects
* Student Portfolios
* Student self-evaluations
* Peer evaluations
* Concept maps
* Competition results
* Pre/post course exams
* Threaded discussions
* Other creative method of assessment: [Provide brief description] \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
1. Provide a written summary of the process indicating how student learning was determined and the rationale for the method of assessment chosen.
2. Complete the assessment questions and determine if there are areas for improvement. Provide any reflection on the questions that were answered NO.
3. Discuss in the space provided any changes that will be implemented or if changes were made from a previous assessment, how the changes that were implemented in the course affected student learning. Note: opening the loop and closing the loop.

**Criterion for a quality course assessment**

General Education Goals

* *Meets expectations* – an appropriate LRSC General Education goal to be assessed from the LRSC catalog (pertaining to the course) is listed in the space provided.
* *Partially meets expectations* – [one of the following]: the general education goal is not provided, is listed improperly, or is not appropriate.
* *Does not meet expectations* - [more than one of the following]: the general education goal is not provided, is listed improperly, or is not appropriate.

Course Objectives

* *Meets expectations* – an appropriate and measureable objective is provided.
* *Partially meets expectations* – a measurable objective is provided but is not appropriate for the submitted assessment.
* *Does not meet expectations* – an appropriate measurable objective is not provided.

Adequate Sample Size

* *Meets expectations* – The sample size has enough samples to be representative of the class population, with a minimum quantity of four (4) or twenty percent (20%) of the class, whichever is greater. The evidence should include student samples that represent all grade categories.
* *Partially meets expectations* – N/A
* *Does not meet expectations* – the sample size is not at the minimum quantity

Student names removed (if samples are provided)

* *Meets expectations* – all remnants of student names are removed. A code for identification that is untraceable to the student can be utilized for tracking.
* *Partially meets expectations* – identification of a student is possible but not obvious
* *Does not meet expectations* – names or traceable identification are visible or not removed

Method of Assessment

* *Meets expectations* – an appropriate method is selected for the type of assessment completed. The type of assessment must fit the method of collecting data and be implemented properly. See assessment examples for a guide.
* *Partially meets expectations* – the type of method selected is not appropriate for the assessment completed
* *Does not meet expectations* – an assessment method is either not present or does not measure student learning

Summary of Assessment

* *Meets expectations* – a detailed description of the assessment process is typed providing a concise overview with the outcomes indicated. Data is provided in a manner that is easily interpreted and accurate.
* *Partially meets expectations* – the description lacks a few components of the process or the data provided is difficult to interpret.
* *Does not meet expectations* – either no summary or data is provided.

|  |
| --- |
|  |
| **Course Name, Number, & call #** | **Semester (F,S,Sum)/Year** | **Instructor Name** |
|  |  |  |
| **Location:** [ ] on-campus**;** [ ] off campus | [ ] Dual credit**;** [ ] Launch**;** | [ ] GFAFB |
| **Open Loop:** |[ ]  **Close Loop:** |[ ]  **Number of Students:** |  |
| **Instructor** **Check Off** | Required Items | **Committee****Check Off** |
|[ ]  **1) The LRSC General Education Goal from the syllabus to be assessed is** Click here to enter text. | [ ] **Meets expectations**[ ] **Partially meets expectations** **(see explanation #1 below)**[ ] **Does not meet expectations** **(see explanation #1 below)** |
|[ ]  **2) The course objective from the syllabus to be assessed is** Click here to enter text. | [ ] **Meets expectations**[ ] **Partially meets expectations** **(see explanation #2 below)**[ ] **Does not meet expectations** **(see explanation #2 below)** |
|[ ]  **3) Adequate Sample Quantity (See #4 in the procedure instructions)** | [ ] **Meets expectations**[ ] **Partially meets expectations** **(see explanation #3 below)**[ ] **Does not meet expectations** **(see explanation #3 below)** |
|[ ]  **4) A summary of the information/data is provided below in the summary of assessment (#1). If the actual assessments are included, all student names are eliminated from attached samples and replaced with a unique identification code.**  | [ ] **Meets expectations**[ ] **Partially meets expectations** **(see explanation #4 below)**[ ] **Does not meet expectations** **(see explanation #4 below)** |
| [ ]  Essay writing[ ] Class Projects[ ] Student Portfolios[ ] Student self-evaluations[ ] Peer evaluations[ ] Concept maps[ ] Competition results[ ] Pre/post course[ ] Threaded discussion[ ] Other creative method of assessment: [Provide brief description- use summary space if needed.] \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  | **5) Method of Assessment is applicable to determine student learning, the method is indicated (see examples provided) Refer to quality assessment guidelines for information regarding a quality course assessment.** | [ ] **Meets expectations**[ ] **Partially meets expectations** **(see explanation #5 below)**[ ] **Does not meet expectations** **(see explanation #5 below)** |
| [ ]  | **6) Instructor summary details the overall process of the assessment.**  | [ ] **Meets expectations**[ ] **Partially meets expectations** **(see explanation #6 below)**[ ] **Does not meet expectations** **(see explanation #6 below)** |
| For Committee Use Only |
| Explanation of required items that did not meet the expectations: |
| Reviewed by:  |  |  |  |
| Date:  |

1. Summary of Assessment and Sample. Include data in the discussion.

2. After reviewing your particular assessment, respond to the following questions. Then review your responses and reflect on whether you should consider making any changes to the assessments you use in a class in order to more effectively meet the needs of a diverse group of students. Please note that assessments can be used for differentiation of student learning in terms of how students learn and how your course delivery affects student learning. It can also serve as a means of helping students understand the expectations of the course. Using an ongoing assessment plan, the data obtained can serve as the educators’ starting point for teaching and point for each student to assume increasing responsibility for their own success as learners. The information can then drive improvement of student learning.

The questions to review your submitted assessment for effectiveness are:

1. Does the assessment clearly measure the learning objective that the students need to achieve? [ ] Yes; [ ] No
2. Is the assessment measuring something that the students expect to be measured? [ ] Yes; [ ] No
3. Is this the right type of assessment to use to measure this learning objective? [ ] Yes; [ ] No
4. Does the assessment measure a fair representation of the components of the learning objective? [ ] Yes; [ ] No
5. Does the assessment measure the most important components of the learning objective rather than immaterial or tangential components? [ ] Yes; [ ] No
6. Is the assessment appropriate for all the students who will use it? [ ] Yes; [ ] No
7. Does the assessment make clear what students must do to provide a high quality response? [ ] Yes; [ ] No
8. Will the results of the assessment provide you with the information you need to determine how to refine and revise your instructional plans for the near term? [ ] Yes; [ ] No
9. Will the results of the assessment provide students with the information they need to see where they are proficient and where they need to improve? [ ] Yes; [ ] No

The information above was developed from: Sousa, D. A., & Tomlinson, C. A. (2011). *Differentiation and the brain: How neuroscience supports the learner-friendly classroom*. Bloomington, IN: Solution Tree Press.

For ANY of the above answers that are NO, please indicate how you plan to change to accommodate it in the future. Please provide the question number for which you are providing the information.

3. (If opening the loop) what changes would I make to improve student learning the next time this course is offered? (If closing the loop) How did the implemented changes improve student learning?

**LRSC Philosophy of General Education**

I. **An educated person must have a critical appreciation of society and of self. This includes some understanding and experience in thinking about moral and ethical problems which enable an educated person to make discriminating moral choices—**personal/interpersonal skills.

1. To understand how a human being behaves individually and how one is linked to one’s social and natural environment— *know thyself*

2. To understand the complexities and uncertainties of personal and social environments, to understand how individuals may be changed and controlled by their environments, and to develop skills to change and control environments— *personal change and growth*

3. To apply knowledge gained in the educational process and use that knowledge in everyday living—*apply knowledge to the real world*

4. To develop skills for designing and evaluating a personal mental and physical health program—*mental and physical wellness*

5. To recognize the importance of leisure and develop the use of leisure for positive life changes—importance of leisure

6. To develop the ability to make responsible decisions based upon understanding and experience in discussing moral and ethical problems in society—*values and ethics*

7. To develop work habits and ethics necessary to function effectively in the workplace—*work-related skills*

II. **An educated person must be able to think, speak and write effectively—** *communication/thinking skills*.

1. To develop a working knowledge of the English language to communicate effectively by writing and speaking clearly and concisely—*present ideas*

2. To develop the skills necessary to gather, integrate, synthesize, and analyze written and oral information in a critical manner—*rational/critical/higher-order thinking*

3. To use information objectively for solving problems and arriving at alternative solutions—*problem-solving skills*

4. To develop the critical listening and reading skills needed to interpret the messages of speakers and authors— *reading/listening critically*

5. To nurture creative thinking and intellectual curiosity through opportunities and incentives and to encourage attempts at different, divergent solutions to open-ended questions, problems, and situations—*creativity/intellectual curiosity*

6. To conceptualize links between events, entities, and ideas and the large context in which they occur—*integrate ideas of the world*

III. **An educated person must have an understanding of other cultures to enable one to conduct life with reference to the wider world within which one lives—**global/multi-cultural experiences.

1. To gain knowledge of Western and non-Western cultures and other times in order to better understand the world and its people—*the world/Eastern/Western civilizations*

2. To recognize that world events are interdependently linked, are affected by the social environment, and are influenced by institutions created within an interactive society, and to understand that impact on one event has ramifications for other events and for the whole—*understand world events from differing disciplines*

3. To nurture a philosophy that asserts the dignity of humanity while understanding the value of world diversity in race, ethnicity, and culture—*global culturalism*

4. To encourage development of a working knowledge of a second language—*communication and understanding*

IV. **An educated person must have an appreciation for and an informed acquaintance with the arts and humanities. Experiencing the aesthetics of literature, the arts, and history will provide enrichment in a variety of diverse fields and life experiences—***aesthetic/intellectual experiences*.

1. To develop a knowledge of and appreciation for human accomplishments in art, music, literature, and history—*appreciation for the arts and humanities*

2. To understand the connectedness and inter-dependency between events, entities, and ideas and the large context in which they exist—*inter-disciplinary understanding*

3. To understand literary concepts presented through literary works in the humanities, history, and English—*understanding literary concepts*

4. To develop a consciousness of history and an understanding of the common heritage of Western civilization—*understand social, economic, and political structures*

5. To foster an understanding of the benefits and responsibilities of living in a democratic society—*citizenship/leadership*

V. **An educated person must have an informed acquaintance with and an appreciation for science and mathematics and their contributions to society—** mathematics/sciences applications.

1. To develop a conceptual understanding of mathematics and a practical knowledge of mathematical application—*numerical*

2. To understand and appreciate the natural physical environment of the planet Earth, thus promoting an ethic of stewardship and ecology—*environment*

3. To gain knowledge of the properties of the universe for understanding and application— *physical*

4. To foster an attitude of intellectual inquiry and methodology which will expand one’s view of the universe and the place of humanity within it—*scientific method/inquiry*

5. To provide a general knowledge of the human body and its systems—*biological*

VI. **An educated person must be literate in current and future technologies—** *technology/computers/information applications*.

1. To explore the nature, role, and impact of technology on the environment and society—technology literacy

2. To develop a working knowledge of computers and computer programs and their functions—computer literacy

3. To apply current technologies to access and utilize information—application of technology

4. To develop the skills necessary to locate and gather information from both print and non-print resources—library/information literacy

VII. **An educated person must have a continued commitment to life-long learning—***life-long learning experiences/skills*.

1. To develop a pattern of intellectual curiosity and inquiry which promotes life-long learning—*value of life-long learning*

2. To nurture and promote the ability to adapt to an ever-changing society— *adapt to the future*

3. To develop an interest in serving the community—*community service*

**Example Assessment Techniques**

\*\*\*Please note that the following sample assessment techniques are only suggestions and can be used by the faculty member as guidelines or as a way to promote an individual method for assessment.

**Essay Writing**

The use of writing to assess learning is a useful tool for assessment. In this technique, the student will complete a writing assignment that is evaluated by the instructor through the use of an established rubric. This technique should utilize a pre-evaluative assignment, like a pre-test, that the students are provided feedback for improvement. Any additional essay assessments can then be evaluated using the same process.

*Effectively Utilizing Essay Writing Assessments*

The teacher should select the course objective that applies to the assessment as well as the LRSC General Education Goal. The general procedure for using essay writing as an assessment of student learning consists of providing the students with the opportunity to write an essay following the guidelines established by the teacher/educator. After completion of the writing, the pre-established rubric is used to evaluate the effectiveness of the writing. The essay is returned to the student for feedback purposes. This type of assessment may be used as an assignment in the course; it is the decision of the faculty member. Later in the course, additional assignments or assessments are gathered to demonstrate progression of the student.

A sample rubric is provided for an example in the space below. Clear and concise instructions for the assignment or assessment should be provided to the students to reduce confusion of the expectations. After the students have completed the tasks, evaluate the writing using the established rubric. Provide a score for the writing with some way to identify the student. Once all the writing essays are completed and evaluated, gather the data to be analyzed. Use some form of statistical analysis for comparison. Possible calculations include percentage change, difference from the mean with standard deviations, or use of a t-test. Provide a conclusion summarizing the assessment and the outcomes.

|  |  |
| --- | --- |
| **Sub-score** | **Description** |
| 1 | The writing has a pattern of errors that may significantly interfere with meaning, for example: sentence fragments, sentence splices, subject/verb agreement, plurals, inaccurate or missing words, punctuation, and/or spelling. |
| 2 | The writing may have numerous errors that distract the reader, but they do not usually interfere with meaning (e.g. sentence fragments and splices, punctuation, missing words, spelling, etc.) |
| 3 | Some errors in grammar, usage, and mechanics may be apparent, such as a few words spelled inaccurately, missing apostrophes and commas, etc., and they may distract and occasionally interfere with meaning. |
| 4 | A few errors in grammar, usage, and mechanics may be apparent, such as occasional spelling inaccuracies, missing commas, etc., and they rarely distract or interfere with meaning. |

*Conventions:*

*Style:*

|  |  |
| --- | --- |
| **Sub-score** | **Description** |
| 1 | Weak control of language is apparent: sentence structures are often flawed and incomplete, as several sentences may be fragmented and confusing; word choices are simple and may be incorrect, imprecise, or vague. Words may be inaccurate or missing. |
| 2 | A control of language is apparent: more than one sentence may be fragmented or confusing; a few words may be inaccurate or missing, but word choice is usually appropriate; phrasing may be vague or repetitive. |
| 3 | A competency with language is apparent; sentences are clear, correct, and somewhat varied; word choice is appropriate and accurate. |
| 4 | Language use is interesting and engages the reader: a command of the language is apparent; sentences are varied in length and structure; word choice is varied, specific, and precise. |

*Content:*

|  |  |
| --- | --- |
| **Sub-score** | **Description** |
| 1 | Support for ideas is extremely minimal or absent; specific details are lacking or not relevant; the writer does not adequately engage in the topic. |
| 2 | Only a little support is provided for the position taken; a few reasons may be given without much elaboration beyond one or two sentences for each reason; a main impression may be one of rather simple and general writing. |
| 3 | Support for the position is somewhat elaborated and detailed in well-developed paragraphs; specific examples may be given, but they are sometimes not well-selected. Development may be a bit repetitious. |
| 4 | Support for the position is elaborated in well-developed paragraphs; relevant, specific details and varied examples, sometimes from personal experience, are used. Development is clear, precise, and thorough. |

*Organization:*

|  |  |
| --- | --- |
| **Sub-score** | **Description** |
| 1 | Organization may lack clear movement or connectedness; paragraphs may not be used; transitional words or phrases are rarely or awkwardly used; may lack introduction, body, or conclusion. |
| 2 | Organization is clear enough to follow without difficulty; the introduction and conclusion, if present, may be undeveloped; transitions may be lacking, confusing, or predictable (e.g. “first,” “second,” etc.); the overall effect may be one of “listing” with several supporting ideas given but with little or no elaboration. Paragraphs may be overly long or too short, reflecting a lack of structure or a lack of development. |
| 3 | Organization is generally clear; introduction and conclusion are appropriate; some transitions show relationships among ideas and are usually appropriate. |
| 4 | Organization is unified and coherent; introduction and conclusion are developed; ideas show a progression or appropriate transitions show relationships among ideas. |

*Focus:*

|  |  |
| --- | --- |
| **Sub-score** | **Description** |
| 1 | The writing is not sufficient to maintain a point of view with any clarity or consistency. Focus is unclear due to one or more of the following reasons: the response is too short to provide sufficient evidence of focus; there is a lack of a main idea; digressions; or confusing language. |
| 2 | The main idea(s) and point of view are generally maintained. The writer maintains a general focus on the stated position; digressions usually led back to the stated position. |
| 3 | The main idea(s) and point of view are maintained. The writer maintains a generally clear focus on the stated position; minor digressions eventually lead back to the stated position. |
| 4 | The main idea(s) and point of view are well maintained throughout the writing. The writer maintains a clear and consistent focus on the stated position. |

*Instructor Comments:*

**Class Project**

The use of project-based assessment techniques has continued to grow within education curriculums as resources and concepts beyond traditional testing applications have evolved. There can be extensive value to the student's overall learning process with the addition of project-based learning to supplement standard curriculum material. Often the project-based component of a lesson plans can help to make the concepts relatable for students.

Assignments that compile into a project-based assessment are also a technique option for educators looking to review the ability of students to be creative, diverse and authentic with their course work and the experience gained throughout the time frame of the class. Learning is guided by much more than study skills and the completion of worksheets and lesson plans. The ability of teachers to apply additional assessment techniques to determine the level of understanding of a topic can be highly beneficial to the overall development of a student.

*Effectively Utilizing Project-Based Assessments*

Project-based assessments are an opportunity to utilize and measure the higher order thinking skills of students. A project-based assessment will apply multi-faceted skills to be encompassed into a cumulative project. This can be a singular project at the end of a grading period or it can be done at designated intervals throughout the marking period. The intent is to design the project-based assessment to encompass the lesson plans, teacher worksheets and any additional teacher resources which will ultimately provide a physical example of what was has been learned and what can be applied by the student.

The criteria for the project-based assessment can be as specific or as generic as a teacher designates. A field trip that relates to the course work is potentially a project-based assignment but its effectiveness as an assessment opportunity would require a more direct correlation. Developing rubrics to define the class structure and curriculum design can be an effective means of applying project-based learning skills. Worksheets can help guide a student throughout the process during the semester.

*Procedure*

* Determine the course objective to be assessed and match it with the general education goal established by LRSC.
* Provide the students with the template and expectations of the project. A rubric will be helpful to provide the guidance and expectations. Provide the students with any information or materials necessary to effectively complete the project.
* Following completion of the project, gather the materials and categorize any results so a comprehensive summary can be performed.
* Write a comprehensive summary of the assessment explaining the process, results, and interpretation.
* Submit the assessment to the appropriate committee or person.

**Student Portfolio**

A portfolio is a collection of documents representative of a student’s best work over a period of time. It is a learner-focused assessment that is up to the student to determine what should be included to provide evidence of their learning. Faculty can use the portfolio to assess the progress of a student over a period of time. Student portfolios could contain sample items that illustrate a progression of skills from only one course or they could be a compilation of skills acquired throughout their college years that would accompany the student when job hunting.

Portfolios assignments used as a method of assessment should include the following requirements from the faculty for the students:

1. Compile a list of criteria of what to include in the portfolio, how to label it, and how it will be graded for the students. Provide a grading rubric to serve as the guide for completion of the portfolio.
2. Instructions for a method of organization that would include a table of contents or labeling
3. Instructions for attractive assembly that may include a binder and clear protector sheets or digital assembly
4. A list of required materials that will illustrate skills desired in the student’s area of study or in areas that will increase their chances of obtaining a future job may be included in the assignment such as:
	1. Student profiles where they assess themselves and determine goals
	2. Sample assignments that show increased proficiency
	3. Certification scores
	4. News articles of achievements that may give evidence that skills learned were applied outside the classroom
	5. Commendations
	6. Honors achieved in and out of school
	7. Relevant courses successfully completed
	8. Resumes and cover letters
5. Instructor comments on material that is included

**Self-reflection/self-evaluation**

Student self-reflection is an assessment technique where students provide personal feedback regarding their learning experience. When completed properly, it can provide valuable information about the quality and appropriateness of student learning. Implementing this technique multiple times throughout the course will generate the most effective summary of student learning. This technique can be completed after chapters, units, and at the end of the course. Planning the assessment should be based on the selected course objective. The students should complete the self-reflection on their learning multiple times during the course.

*Procedure*

* Select the course objective to be assessed
* Determine which general education goal is appropriate for the assessment
* Determine how many self-reflections will be completed throughout the course and plan accordingly. Having multiple times is most appropriate. For example, the students can complete two chapter self-reflections on their learning and a final course reflection on what they have learned. Provide the students with appropriate starter questions to be used as a guide for them to answer. Their answers should be geared toward the chosen course objective.
* Gather the assessments and categorize any themes or concepts that have emerged.
* Provide a written summary of the process and conclude how well the process went in relation to the students reflections.
* Submit the completed checklist and summation to the appropriate committee or person.

*The following is an example of a self-reflection assessment.*

Please select the best answer from the choices offered and provide an explanation for your selection.

1. Before taking this course/section I knew \_\_\_\_\_\_\_\_\_ about [*course topic/concept*]
2. Quite a bit
3. Some things
4. Very little
5. Absolutely nothing

Explanation:

1. The lab based approach providing engaging opportunities for effective learning is \_\_\_\_\_\_\_\_\_\_.
2. The best way for me to learn because
3. A good way for me to learn but I learn best using \_\_\_ because
4. Not a good way for me to learn because

Explain:

1. This year in the lab your instructor relied significantly less on algebra as a way of teaching hydraulic power concepts that he did in the past. I believe this is a ­­­­­­\_\_\_\_\_\_\_\_ approach.
2. Good
3. OK
4. Poor

Comments

1. This class relies heavily on student participation in groups. I find this to be a \_\_\_\_\_\_\_\_\_\_ way of learning hydraulic concepts.
2. Very helpful
3. Moderately helpful
4. Not helpful

Comments

**Peer evaluations**

Using student evaluations of their peers’ activities, assignments, or other methods can be an important part of learning and assessment. According to Suski (2009), peer evaluations help the students being evaluated by adding the insight of their fellow students from a different perspective from the instructor. The evaluations can motivate students to participate and to help to improve critical thinking skills. For course objectives that include the development of interpersonal skills, collaboration, or leadership building, peer evaluations can improve the opportunities for students.

Peer evaluations should be used with caution and should have a detailed framework, like a rubric, for the evaluators to follow. Significant biases may be present since it is obvious which are positive and negative. The student may evaluate their peer poorly because of a disliking or more positively because of a friendship.

A suggested procedure to complete a peer evaluation is to select the course objective and the general education goal to be assessed at the beginning of the semester. Provide the students with the expectations of the assignment and the tool or rubric that will be used in the evaluation. The assessment should be completed multiple times throughout the course to gather data to demonstrate student learning has occurred. After each evaluation, provide opportunity for the students to gain an understanding of the concept or topic evaluated and to understand the areas of improvement. Provide them with any feedback for them to improve on their learning. At the end of the semester, gather the completed assessments and provide a summary of the individual students learning and overall student learning using an appropriate statistical calculation. An appropriate statistical calculation could be use of a percentage of the score that has changed. Write up the summary and complete the checklist that will be turned in to the LRSC assessment committee.

Suskie, L. (2009). *Assessing student learning: A common sense guide* (2nd ed.). San Francisco, CA: Jossey-Bass.

**Concept maps**

Concept maps can be used as an assessment to determine student learning through students demonstrating the connection of concepts. By providing several concepts maps of concepts specific to the course, an assessment of student learning can be determined. A concept map is a special form of a web diagram for exploring knowledge and gathering and sharing information. Concept mapping is the strategy employed to develop a concept map. “A concept map consists of nodes or cells that contain a concept, item or question and links. The links are labeled and denote direction with an arrow symbol. The labeled links explain the relationship between the nodes. The arrow describes the direction of the relationship and reads like a sentence” (citation from http://www.graphic.org/concept.html).

*Sample procedure for Concept Map Assignment Expectations: (provided by Dr. Betsy Bannier)*

Each student will develop a comprehensive, *computer-generated* concept map. This map should connect the most important concepts in textbook chapters 1 – 10 with the water-related concepts included in our first nine “Building Connections” activities. Basically, your job is to visually show how each of our main course concepts (both within and beyond the textbook) all fit together.

Your map should be placed in the Concept Map drop box by the due date. **Please make sure your maps are saved as .jpg files** – (.isf or .cmap files may not open on some computers) If you are using Inspiration (see below), simply click on “export” to export your map as an “image file” – this is a .jpg file.

Steps to completing this assignment:

1. Read the resources listed below. Be sure to spend an adequate amount of time with each website.
2. Click on "Betsy's Sample Concept Map" to see a concept map that I developed for a different course. Feel free to use this CMap as a general example, but do not feel obligated to "mimic" it exactly. Please note that this is an individual assignment, not a "group" assignment. Each student's concept maps should be unique.

**Concept Mapping Resources**

*Directions***:** Everyone should visit link 1 to gain a general understanding of what concept mapping is, how to create a concept map, and the reasons for creating and using concept maps. Then, everyone will need to *download concept mapping software to use for this assignment*. Two options are provided below (you only need to download *one* form on concept mapping software, not both!). Link 2 will direct you to *free* software. Link 3 will direct you to *a free 30 day trial* of a different software package. Please investigate both Link 2 and Link 3 before making your decision about which software to download! Questions? Just ask!

1. The following website also provides a clear explanation of how to develop a concept map. In addition, this website shows you several *examples* of concept maps. Finally, the website contains links to *other* websites that you may want to investigate: <http://www.graphic.org/concept.html>

2. Free Concept Mapping Software Link! When you visit the following site, click on Downloaded and follow the instructions that appear. Pros and Cons: Some people say that this software is not as easy to use or as fancy as Inspiration concept mapping software. However, it is absolutely free – you may download it for free, with no time limit on its use!

<http://cmap.ihmc.us/>

3. Free 30 Day Trial of Inspiration software! When you visit the following site, simply follow the given directions. Pros and Cons: Inspiration is powerful software, and is easy to use. Because it is so popular for concept mapping, Inspiration can only be used free for 30 days. After 30 days, if you wish to continue using the software, you will need to pay a fee.

<http://www.inspiration.com/>

**Competition Results**

Using national or state competition results can be utilized for an assessment of student learning. These competition results can be used if they are directly related to the course objective being assessed. The standardized competition provides the structure for the assessment and can be reviewed with the student to determine the learning that has occurred. Competitions can provide the students with an engaging experience to improve skills specific to the course, leadership, and an opportunity to experience industry driven competencies.

To complete the assessment using competition results, the course objective and general education goal should be identified. Preparation and documentation of the experience will assist in the assessment of student learning. A student may complete a self-reflection of their learning to contribute to the assessment. Following the completion of the competition, a summary sheet may be included demonstrating the achievement of any competency levels. The instructor should complete the assessment checklist and include any data that pertains to student learning.

**Pre- /post- method of assessment**

Use of the pre- /post- method of assessment can be an effective way to measure student learning objectives. The general purpose of this method is to determine an initial level of student knowledge or understanding of a concept specific to the course as indicated by a course objective then throughout the course additional measurements are conducted. After completion of the assessment, the data is then analyzed to determine if a significant change has occurred in student learning. Utilizing multiple methods and multiple collections is the most effective way to collect data regarding student learning. Create a timeline where data is collected throughout the semester and administer the pre-post exams over the length of the course using different techniques. For example, a pre course assessment can be administered the first weeks of a course then re-administered at the end. During the course, several chapter or unit pre-post assessments can also be given. The data can then be accumulated and evaluated for learning.

In the following paragraphs, a general description of this type of method is given. It is intended to serve as a guide and is not the only way to complete this type of assessment. The instructor is encouraged to create their own plan that fits their students’ needs as well as their own.

Procedure:

1. Identify an appropriate course objective to assess. This should be completed in the first few weeks of the course. Use the assessment checklist as the guide.
2. Develop an assessment exam that will appropriately identify student learning for the listed course objective. The exam can be: (a) a writing assignment where the student must synthesize or discuss concepts related to the objective, (b) a set of problems to be solved, (c) several multiple choice questions, or (d) self-reflection of the course or concept. Note that any appropriate testing method may be chosen by the instructor but it is not simply a chapter test or exam. However, if several chapter assessments are completed this would be appropriate.
3. Administer the assessment to the students during multiple times throughout the course. Plan for at least three times throughout the course making sure that the assessments measure the course objective that was indicated.
4. Gather the data and perform an analysis of the results. Appropriate analyses include percentage change, *t*-test, correlations, or analysis of variance. Contact the assessment chair if there is a need for further instruction on the use of any of these statistical analysis techniques.
5. Complete the assessment checklist following the directions provided. An interpretation and explanation of the process is expected. Include samples of the assessments or if the actual assessments are included, remove all identification specific to students. The assessment data should be provided in table or graph form.

**Sample Pre-/Post- Assessment.**

Course name: Math XXX

General Education Goal: V. *An educated person must have an informed acquaintance with and an appreciation for science and mathematics and their contributions to society- mathematics/sciences applications.*

Course objective: *Following completion of this course, the student will be able to: analyze and interpret data utilizing the appropriate statistical testing method*.

Data:

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Student**  | **Exam #1-Pre** | **Exam #1- Post** | **Exam #2-Pre** | **Exam #2- Post** | **Exam #3-Pre** | **Exam #3-Post** |
| 1 | 6 | 12 | 7 | 18 | 5 | 18 |
| 2 | 8 | 13 | 8 | 17 | 5 | 18 |
| 3 | 8 | 14 | 9 | 16 | 5 | 19 |
| 4 | 9 | 15 | 10 | 15 | 5 | 19 |
| 5 | 10 | 16 | 11 | 14 | 5 | 20 |
| 6 | 11 | 17 | 12 | 13 | 5 | 20 |
| Average Score | 8.67 | 14.5 | 9.5 | 15.5 | 5 | 19 |
| Total possible  | 20 | 20 | 20 | 20 | 20 | 20 |
| Average % | 43.3% | 72.5% | 47.5% | 77.5% | 25.0% | 95.0% |
| Percentage Change | 29.2% |  | 30.0% |  | 70.0% |
| t-test |  | 3.58239E-07 |  | 0.011093408 |  | 2.27431E-07 |
| t-test interpretation | p<.001 |  | p<.05 |  | p<.001 |

Interpretation of the results:

The above results indicate there is improvement of student scores. The students improved their test scores for each of the statistics exams. The group improved their overall scores at a significant level as indicated by the *t*-test and increase in the average percentage. The *t*-test results indicate there is a significant change in the scores of the groups for each exam as indicated. The probability levels demonstrate there is a low probability of error that the occurrence of these scores is by chance alone.

**Threaded Discussion**

A threaded discussion includes asynchronous posts, made by students, to an online discussion board. Topics for threaded discussions are assigned by the instructor and students can be divided into groups for interactive exchange. The instructor should decide early in the course what the topic will be for discussion. The assessment should be able to indicate if the course objective identified is measured so selecting an appropriate topic and course objective is vital.

A threaded discussion post can be an ideal method of demonstrating student progress throughout a course. Once the course is completed, review the students threaded discussion posts comparing posts from early and later in the course. Identify aspects of qualitative improvement using an established rubric appropriate for evaluating the threaded discussion (an example is provided). This will provide a robust snapshot of student understanding of the material at a given point in the term. Complete the assessment checklist and provide the components necessary for the assessment.

| Does not meet standards |  | Meets standards |
| --- | --- | --- |
|  | Includes posts from at least two time points |  |
|  | Includes samples from the required number of students |  |
|  | Posts demonstrate improvement in student understanding related to the course objective indicated |  |
|  | Posts demonstrate improvement in student understanding related to the general education objective indicated |  |