METHODS TO ASSESS STUDENT LEARNING OUTCOMES (SLOs)
In Academic and Student Services Programs

Classroom *and* programmatic assessment are *both* critical processes in serving CBU students. Here is a brief summary chart identifying the basic differences between course and program assessment:

BASIC DISTINCTIONS BETWEEN COURSE AND PROGRAM ASSESSMENT		
Issue	Course Assessment	Program Assessment
Focus	Individual students in the course; individual performance/achievement	All students in the program; aggregated performance/achievement
Scope	A specific course	A program with multiple activities, courses, etc.
Purpose	Student feedback; course improvement	Program improvement evidenced by increased student learning
Methods	Numerous	Numerous
Precision	Semi-formal process	Formal, structured process
Responsibility	Usually the individual course instructor; sometimes multiple instructors teaching the same course	Shared by all leaders/faculty/staff involved in the program
Duration	Length of course	On-going, continual

Imbedded or Ancillary Methods

All assessment methods can be classified and used as either embedded or ancillary assessment. ***Embedded assessment*** uses program "measurement" strategies included as part of the requirements within existing courses, internships, or other learning experiences. In effect it is "double-duty" assessment—a method (i.e., "critical assignment") used to measure a course objective or objectives while at the same time, when all students' results are aggregated, provides evidence (data) for a program SLO. One caveat is worth mentioning: multiple sections of the same course must all use the same "critical assignment" and grade the assignment in the same manner; a rubric is a very helpful tool in this regard. Embedding program assessment methods in existing courses and activities is highly recommended because doing so saves time and energy.

Measurement strategies *in addition to or outside* existing course requirements, internships, or other learning experiences are called ***ancillary assessment***. Think of them as being "additional duty" assessment. For example, a program may establish an SLO that is best measured by a national licensing test or a Major Field Test. Students are asked to take the exam on their own time and at their own expense and then report their scores back to the program director. Scores are aggregated and represent accomplishments across all students completing the exam. This data provides evidence on whether or not the SLO is being achieved. The biggest challenge in using ancillary methods is adequate student participation. Students may react negatively when asked to do extra-curricular requirements at their own expense.

Direct or Indirect Methods

Direct methods are strategies that ask students to demonstrate their learning by producing work, performances, or products which evaluators can assess to determine the students' learning level(s). ***Indirect methods*** are measures to ascertain perceptions, what the students think or "feel" about their learning and/or the educational environment and services. Perceptions from faculty, intern supervisors, employers, etc., are useful in assessing SLOs.

While both direct and indirect methods are valuable tools, the priority is using direct methods. Having students demonstrate their learning is far more informative than merely asking them what they think or how they feel about

their learning. Even so, indirect methods are extremely useful in ascertaining student satisfaction with curricular and co-curricular experiences.

Sources for Finding Methods

- ❑ Use ideas provided by professional associations and organizations.
- ❑ Look at other programs/departments at CBU and other universities.
- ❑ Consult published resources. For example: Dunn, D. S., Mehrotra, C. M. and Halonen J. S. (2004). *Measuring Up: Educational Assessment Challenges and Practices for Psychology.* APA: Washington, DC.
- ❑ Ask a professional reference librarian.
- ❑ Be creative; devise new, original methods suited to a particular SLO.

Criteria for Selecting Assessment Methods

When selecting *ANY* assessment method, here are some questions to consider carefully:

1. *Does it "fit" the student learning outcome it is designed to measure?* Not all assessment methods are suitable for every academic discipline or student learning outcome. Likewise, not all methods are suitable for the various levels of learning intended by the SLO.

2. *Did the faculty or student services staff participate in selecting the method and are they willing to participate in its use?* The best assessment methods are those selected by the people charged with implementing the methods.

3. *How much time is required to complete the assessment method?* Determine how this affects faculty, staff, and students' schedules. Methods that require lengthy time commitments are frequently avoided by students.

4. *Is the method used at one point in time or utilized with students over several points in time (longitudinal method)?* Commonly called a "pre-test/post-test" strategy, the test (paper, observation, skill demonstration, etc.) is administered early in the program and then again just prior to graduation or program completion to determine amount of improvement, if any.

5. *When, where, and how is the assessment administered?* Attention to small details makes for large success. Be as specific as possible when planning and implementing the assessment method.

6. *How frequently is the assessment administered; each semester, yearly, every other year, etc.?* It may be desirable to assess some SLOs each and every year, but is not necessary to assess every SLO every year. Frequency is a judgment call.

7. *Are there financial costs? If yes, are departmental and/or university resources available?* Some methods, like published tests are expensive, but well worth the investment in some cases. Methods such as licensing exams are usually paid for by the individual students.

8. *Does the department faculty/staff have the skills and/or knowledge necessary to use the method and analyze the results?* Selecting an unfamiliar assessment method requires training in its use and/or securing assistance from someone who does know how to utilize the method.

9. *Most importantly... WHO is responsible to make certain the assessment is accomplished?* When a task is everyone's responsibility, often it becomes no one's responsibility.

ASSESSMENT METHODS

This section briefly *introduces* many proven assessment methods. If a particular method seems appropriate to your assessment needs, you are wise to acquire additional information on how to correctly plan and implement the method(s).

DIRECT METHODS TO ASSESS LEARNING

1. Capstone or Senior-level Course/Projects

Description: A general strategy rather than a specific method; a specific course in which students have the opportunity to display their curricular and co-curricular skills and knowledge acquired while completing their major(s); permits faculty/staff to directly evaluate students' achievements or accomplishments based on stated outcomes students are expected to acquire during their studies; usually limited to seniors as a concluding course prior to graduation; assignments within the capstone courses become the instruments for assessing student learning outcomes.

Strengths: A single, focused course can assist students in completing culminating assignments useful for assessment and other purposes; can be used to collect data on student learning across different arenas such as their major, general studies, student services, departmental outcomes, etc.

Weaknesses: Devising an effective capstone course/project can be challenging especially in cases where learning outcomes are difficult to measure; relying on a single course to accomplish all assessment is risky and perhaps unrealistic; evaluating assignments is often too subjective.

2. Case Studies or Simulations

Description: Contrived situations or "games," often based on real situations or facts, which permit students to apply and demonstrate their skills and knowledge in predetermined situations.

Strengths: Provides a practical and in-depth way to observe (measure) acquired skills, knowledge, attitudes, etc.; flexible application to specific student learning outcomes; many skills can be evaluated concurrently; often fun for the students.

Weaknesses: Very time consuming; easy to become unproductive "play"; may be more expensive than course-embedded assessment methods (some commercially produced case studies and simulations are expensive to purchase); requires a considerable amount of time to plan, implement, and analyze.

3. Written Assignments

Description: A common and useful method to measure students' ability to think critically, organize thoughts, and present logical arguments in a written format; may be an imbedded assignment, a capstone project, or an independent project (i.e., senior thesis); best when writing topics and standards are established prior to completing the assignment, thus allowing for comparison and common evaluation criteria.

Strengths: Assessment can take place over a period of time; unobtrusive; a functional skill required by all educated persons; nearly all student learning outcomes are related in some manner to writing skills.

Weaknesses: Relevance may vary depending on the major/department (i.e. not as relevant if hands-on-performance is more appropriate); if dealing with a large number of students, the assessment may be very costly in terms of human and time resources; subjective evaluation may be unreliable among various raters.

4. Local Test Instruments

Description: Customized instruments created by a department or in some cases the institution, to assess stated student learning outcomes (not usually course examinations developed by one professor).

Strengths: Directly connected or geared to the specific outcomes in question; student performance can be identified, measured, and evaluated based on local standards; can be helpful in clarifying the student learning process; greater control over interpretation and use of results; potentially useful in overall program evaluation.

Weaknesses: Developing a "local" exam as an assessment method is time-consuming and expensive; requires committed individuals who are willing to lead and coordinate the different development stages; internal use only; usually not comparable to state or national norms; requires someone who is knowledgeable about measurement to insure accurate, valid, and reliable results.

5. Guided Observations

Description: A general method whereby "professional observers" (faculty members, etc.) see and listen to one or a group of students involved in some activity directly related to one or more learning outcomes; also used to explore how and why student learn; may be used in different environments such as classrooms, public presentations or meetings, internships, special programs, etc. If more than one observer, then "inter-rater reliability" is required and facilitated by using a common rubric or standard.

Strengths: Provides a forthright, first-hand method to assess students' behavior, skills, and/or attitudes; the interaction between researcher and participants can allow for further insight into learning accomplishment.

Weaknesses: Cannot be generalized; obtrusive, student may not act "normally" because they know they are being observed; results are less dependable especially if observers are inexperienced; privacy or legal issues may surface; difficult, but not impossible, to aggregate and summarize observed behaviors or actions.

6. Oral Exams

Description: Evaluates students' level of knowledge through face-to-face dialogue between one student or a small group of students and faculty member(s).

Strengths: Locally developed, allows for greater depth and scope through probing and clarification techniques; allows for interpretation of non-verbal communication; less likely for miscommunication or misunderstanding; less chance for error caused by the participant guessing (multiple choice examination); useful for assessing a students' level of content knowledge, communication, and/or analysis skills

Weaknesses: Time-consuming; responses from students may be more reserved than when written; social pressure may influence student performance; although initial questions are standard for all participants, additional probing questions may not be and therefore reduce validity; requires well-trained facilitators.

7. Portfolio Evaluations

Description: Hard-copy or electronic collection of student work*;* demonstrates student growth over time; the work collection may include research papers; reports, tests, exams, tapes, journals, self-evaluations, etc.; individual students build their own portfolios and assessment-related products are aggregated for This information may be gathered from in-class or as out-of-class assignments; yields information such as student learning; Information about the students' skills, knowledge, development, quality of writing, and critical thinking; a student portfolio can be assembled within a capstone course or in a sequence of courses in the major.

Strengths: Unobtrusive; learning collected over time; finished portfolio is an asset to students in applying for jobs or graduate school; allows for greater communication and interaction between students and faculty; multiple areas can be measured simultaneously; portfolio work is more likely to represent the student's actual ability and knowledge,

more so than a test; excellent control over interpretation and using the results; allows students to concentrate on performance than time constraints; results allow for more interaction between department members; using student portfolios also gives faculty the ability to determine the content and control the quality of the assessed materials.

Weaknesses: Time and logistics; can be costly; requires a high level of commitment of both faculty and students; collection of portfolios and grading can be challenging; student work may also involve plagiarism.

8. Pre-test/Post-test Evaluations

Description: Test or similar measurement tool is given to students at the beginning of a course or program; then the tool is administered a second time at the end of a course or just prior to graduation to determine if improvements were made by the students; used to identify needed changes in content or procedures.

Strengths: Facilitates studying student learning over time (longitudinal); results are often useful for determining where skills and knowledge deficiencies exist; if done correctly, provides excellent evidence for learning.

Weaknesses: Often time consuming and requires functional knowledge on how to conduct "quasi-experiments."

9. Reflective Essays

Description: A written assignment utilizing predetermined topics and/or questions; used to measure students' knowledge and attitudes toward specific topics and issues related to a departmental student learning outcome(s); can be utilized within courses, internships, and other learning settings.

Strengths: Students are able to take part in the assessment process by providing their opinions and viewpoints in a prose format; essays provide direct evidence to support claims about student learning; useful in determining areas of deficiency and where improvements in the curriculum are needed.

Weaknesses: Little useful information is gained if questions or topics are not well-developed; additional time and a consistent standard are needed to evaluate the essays; lack of truthfulness on the students' part is always in question because there is a tendency for students to write what they think is the "correct" answer or what they speculate the professor wants to hear.

10. Standardized (Published) Test Instruments

Description: Commercially available tests and examinations (e.g., the GRE, ETS Major Field Tests, etc.) used to measure student competencies under controlled conditions; national standards are used as comparative tools in areas such as passing rates, acceptance into graduate or professional school, and overall student achievement when compared to other institutions.

Strengths: Tests are immediately available and less demanding to develop than local test instruments; can be compared to state or national norms; less likely to contain subjective variables; reduced time demand for faculty; helpful resource for determining if state or national standards are being met; most effective when used to measure level of group performance, when external date is needed and/or a large number of participants; nationally developed tests are devised by experts in the discipline; the ability to compare your outcomes with national outcomes.

Weaknesses: Unrepresentative student samples can result in inaccurate data; results may not yield locally relevant information; multiple choice exams can lead to high degree of error (guessing answers); misinterpretation of results by inside and outside officials; potentially ineffective for measuring individual students or as a basis for program evaluation; forced responses does not allow for honest opinions or perceptions; need to know what is to be measured before selecting or administering a given standardized test; can be costly to administer and score.

INDIRECT METHODS TO ASSESS LEARNING

1. Alumni Survey

Description: A mailed, e-mail, or telephone questionnaire used to acquire feedback from individuals who graduated from the specific major or program; seeks to measure students attitudes and opinions related to their education and whether or not they felt they were well prepared; provides information on the types of jobs or graduate degrees students obtained once leaving college; responses may suggest need changes, improvements, expansion and/or developing existing and/or potential programs.

Strengths: Useful in generating data about student preparation for professional work, program satisfaction, and curriculum relevancy; provides departments with a variety of information that can highlight program areas needing attention. In most cases, alumni surveys are a relatively inexpensive way to gather data and for reestablishing relationships with individuals that want to help the program continually improve.

Weaknesses: Developing an effective survey is time-consuming and not easily accomplished; response rate is often poor and unrepresentative; alumni directory may be out-dated or inaccessible; no assurance survey responses are truthful.

2. Curriculum Analysis

Description: Systematically reviewing syllabi, exams, textbooks, and other pertinent documents and information to determine if learning outcomes are being addressed; examines the sufficiency of instructional materials; provides documentation on whether or not course objectives support departmental student learning outcomes; facilitates sequencing courses and other experiences required for the major, department, or general studies.

Strengths: Straight forward method to determine and track what is taught in the curriculum; affirms learning outcomes are being addressed; exposes underdeveloped or undeveloped areas.

Weaknesses: Very time-consuming for large departments; no guarantee that curricular documents reflect accurately what is actually taking place.

3. Employer Survey

Description: A mailed, e-mail, or telephone questionnaire used to acquire feedback from employers to determine if graduates (now employees) possess job knowledge and skills taught to students are being used and if other skills valued by employers need to be included; information collected allows departments to adjust curriculum, outcomes, program, etc; requires careful planning and organization.

Strengths: Direct feedback from the "field," from employers; information from an external source that reflects whether or not graduates obtained and are practicing the stated student learning outcomes; allows faculty/staff to review the relevance; can be applied to internships or service; responses are often useful to help students discern the relevance of educational experiences and programs

Weaknesses: Poorly structured surveys can result in sloppy, unusable data; changes in a program, course, curriculum, etc. may need more detailed information than what is provided by survey responses; cost of printing and distributing surveys; evaluating results can be time-consuming; difficulty in determining who and how many to survey; employer information might be inaccessible or out-dated; low response rate may call into question any results; surveys are voluntary and can lead to under or overgeneralizations.

4. Focus Groups

Description: Small group structured discussions where a trained facilitator provides the topics and monitors the discussion; the purpose to collect information on a specific or focused topic related to the department's or major's stated student learning outcomes; used to examine and explore attitudes or opinions and identify the program or

major's strengths and weaknesses; participants (usually graduating seniors) respond to the others' comments by supporting, disagreeing, or building on what is said; usually recorded, transcripts are later analyzed for central themes.

Strengths: More students interviewed in less time; allows for discussion and interaction among participants; can be used in conjunction with other assessment methods or independent; flexibility; low cost; quick results; interaction can generate more discussion and therefore more information; data are the participants' actual responses; allows students to verbally state their opinions; can provide the basis for identifying questions or themes needed to design a survey questionnaire for late use.

Weaknesses: Students can influence one another's responses and skew the results; requires careful planning; difficult to gather participates; data quality is dependent on the participants and the facilitator's skills; results are often difficult to analyze and use.

5. Student Interviews

Description: Interviews with individual students structured with open or closed-ended questions or completely open-ended using no pre-determined set of questions.

Strengths: Individualization; allows for probing; permits exploring particular issues of concern; used to develop a survey; immediate feedback; useful in evaluating outcomes attained other than knowledge (similar to oral examinations).

Weaknesses: Very time consuming; often intimidating to students; nonrandom selection of students can generate biased or unrepresentative results; answers depend on how well the questions are worded; students may attempt to provide "correct" answers rather that express their true opinions and attitudes.

6. Student Surveys

Description: A mailed or telephone questionnaire used to acquire feedback from students who are asked to respond to open and/or closed-ended questions or statements on topics related to stated student learning outcomes; may produce important curricular and co-curricular information about student learning and educational experiences; students are asked to reflect on what they have learned as majors in order to generate information for program improvement.

Strengths: Acknowledges student opinions; efficient way to poll numerous students at one time; can provide a one-stop method to gather information on multiple student learning outcomes; done properly, results are representative.

Weaknesses: Results may not be representative; poorly written questions can skew the results or fail to produce the desired/needed information; return rates are unpredictable and may invalidate the survey.

7. Transcript Analysis

Description: Examine existing data—student transcripts, etc.—to identify what courses students take, the order in which the courses are completed, and the performance levels (grades); analysis depends on the specific information available and why the data are used.

Strengths: Uses existing student database, no further assessment procedures are required; unobtrusive; provides ancillary information on student learning outcomes.

Weaknesses: Non-curricular, outside influences are not documented on transcripts; can be very time consuming.

8. Records

Description: Keeping records or observing students' use of facilities and services (e.g. Logs maintained by students or staff members documenting time spent on course work, interactions with faculty and other students, internships, nature and frequency of library use, computer labs, etc.); data can be correlated with test scores and/or course grades to demonstrate student learning outcomes.

Strengths: A useful method to document student activities that are related directly to student outcomes; fairly easy to accomplish; excellent method to support requests for additional resources; provides value information related to decision making about continuing, deleting, or adding new academic services.

Weaknesses: Potential inaccuracies in record keeping and potentially misinterpreting existing records.