Houston, We Have a Problem…Or Do We?

Processes and Strategies for
Successful Program Assessment

Presenting "Constellation" Colleagues

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Session Learning Objectives

- Select and diagram effective assessment processes.
- Identify and describe effective assessment strategies

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Session Learning Objectives

- Analyze excerpts of program assessment plans and propose next steps with justification
- Incorporate processes and strategies learned into future program assessment
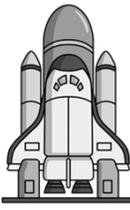
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LET OUR JOURNEY BEGIN…

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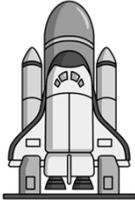Presentation   5

Preparing for Take-Off

- Crew Member Training Exercise

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Preparing for Take-Off

- **Training Tips- Perspective One**
  - **Systems Overview**
  - **Program Assessment-The Basics**

Program Assessment: The Basics- What?

- **Systematic Process Involving**
  - **Collecting and analyzing target data**
    - **At program level**
  - **Determining areas of strength and improvement**
    - **Action plans**

Program Assessment: The Basics- Why and When?

- **Why?**
  - **To evaluate, measure and document**
    - **Academic progress and readiness**
    - **Skill acquisition**
    - **Learning outcomes**
- **When?**
  - **At regularly scheduled intervals**

Program Assessment: The Basics- How?

- **Step #1-- Determination of Program Learning Outcomes (PLOs)**
  - **Statements that identify the knowledge, skills, and/or behaviors that students should be able to demonstrate at the end of the program**

Program Assessment: The Basics- How?

- **PLOs must be focused on learning outcomes (what students learn by doing tasks) *not* on tasks**
- **PLOs should *not* contain pedagogy**
- **PLOs should be measurable and limited to one concept**

Example Potential PLOs

- **Theatre and Dance**
  - **Apply acting theory to characterization**
  - **Perform a wide range of acting styles**
  - **Act with technical and artistic skill**
- **Accounting**
  - **Students will speak persuasively in situation that require the speaker to argue for a recommendation to sell a product of service**

Program Assessment: The Basics- How?

- Step #2– Create a Program Assessment Plan around the established PLOs
  - A matrix format works well
    - A template and partially completed plan with corresponding rubric are located in the handout packet (pages 3-5)

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Example Components of a Program Assessment Plan

- Assessment Mapping/Tool
  - Identification of the course (# and name) in which a corresponding PLO will be assessed (mapping)
  - Identification of the specific component of which a corresponding PLO will be assessed (tool)

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Example Components of a Program Assessment Plan

- Determination of Assessment Measure Category based on assessment tool
  - Direct (D)– preferred measure
    - Writing samples, observations of students
    - Case studies, projects
  - Indirect (I)
    - Self-reported information – surveys

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Example Components of a Program Assessment Plan

- Determination of a Program Target (may also be referred to as a "benchmark")
  - A standard or point of reference against which things may be assessed

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Example Components of a Program Assessment Plan

- Determination of the use of Assessment Data/ Timeline
  - Identification of who is responsible for what part(s) of the plan and the time line for each assessment cycle

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Assessment Rubrics

- Used to collect assessment data
- Allow for data collector to rank the components being assessed
- Assessment Rubrics must be separate from a grading process

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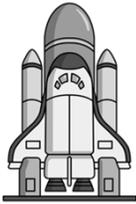Presentation   18

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Preparing for Take-Off

- **Training Tips-Perspective Two**
  - **Systems Overview**
  - **Program Assessment-The Basics**

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Program Assessment

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Program Assessment

- **Institutional Effectiveness - Assessment to determine the extent to which a college or university is achieving its mission.**
- **Program-level Assessment - Assessment to determine the extent to which student in an academic program can demonstrate the learning outcomes for the program**
- **Classroom (Course) Assessment - Assessment to determine the extent to which a specific course is achieving its learning goals, as well as, assessment to improve teaching of specific courses or segments of courses.**

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Program Assessment

- **Mission – A holistic vision of the values and philosophy of a program, department or institution.**
- **Goals, Outcomes (Objectives):**
  - **Program Goals – Statements that describe what the program will achieve.**
  - **Student Learning Outcomes – The knowledge, skills, and dispositions that students should be able to demonstrate upon graduating from a program and/or institution.**
    - **Course Goals – The goals of the course; what the instructor tends to cover and do.**
    - **Course Objectives – Student expectations for the course; what the instructor expects the students to be able to know, to do or to believe by the end of the course.**

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Program Assessment
Assessment Strategies (Measures)

Direct Evidence

A tangible, visible, self-explanatory evidence of exactly what students have and have not learned.

Performance Assessment - The process of using student activities or products to evaluate students' knowledge, skills, and development.

Authentic Assessment - a form of performance assessment in which the activity simulates the contexts, tasks and ways people in "real-life" situations use knowledge and skills.

Indirect Evidence

Evidence that deduces student achievement of learning outcomes through the students' reported perception of their own learning.

- **Quantitative Assessment** – Methods that rely on numerical scores or ratings.
- **Qualitative Assessment** – Methods that rely on descriptions rather than numbers.

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Program Assessment
Assessment Strategies (Measures)

- Formative Assessment – The assessment of student achievement at different stages of a student's academic career.
- Summative Assessment – The assessment of student achievement at the end point of their education.
- Embedded Assessment (Course) – A method in which evidence of student learning outcomes for the program is obtained from assignments in particular courses in the curriculum.
- Add-On Assessment – Assessment strategies beyond course requirements.
- Traditional Assessment – Assessment strategies often completed in a controlled, timed examination setting and are usually designed only to collect assessment.
- Supportive Evidence – Information gathered for the purpose of program evaluation, quality of the curriculum, and/or administrative purposes.

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Program Assessment

- Performance Indicator (Criteria for Success) – A description of an observable and measurable characteristic or change that represents achievement of an outcome. The standard by which student performance is evaluated. Criteria for assigning a score or the dimensions of proficiency in performance used to describe a student's response to a task or judging the results of student learning.
- Benchmarking (Peer-reference or Norm-referenced) – Compares student performance or score against their peers either established by use of its own program or from other institutions.
- Standards-based (Competency-based or Criterion-referenced) – Compares student performance or score against an established standard.
- Best-Practice (Best-in-class) – Compares your results against the best of your peers.
- Value-added (Growth or pre-post) – Compares results against student scores when they started or entered the program to the end of the program or course of study.
- Longitudinal – Compares student performance or scores against peers in prior years.

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Program Assessment

- Scoring Rubric - A determined set of criteria that describes the characteristic(s) of a learning outcome and the level of achievement in each characteristic(s).
- Reliability - the extent to which an experiment, test, or any measuring procedure yields the same result on repeated trials.
- Validity - refers to the degree to which a study accurately reflects or assesses the specific concept that the researcher is attempting to measure.
    - Validity has three components:
        - relevance (direct measurement),
        - accuracy (how precise are the measurements),
        - utility (how clear are the implications for improvement).
- "Close the loop" or "Feedback loop" - Using assessment results for program change and improvement.
- Triangulation - the use of a combination of assessment methods in a study.

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Program Assessment

- WHY ASSESS STUDENT LEARNING OUTCOMES?
    - Focus is on assessing what our students have learned as a result of the educational program.
        - KNOWLEDGE (cognitive – 'stuff in heads')
        - SKILL (psychomotor, behavioral – 'do; physical ability')
        - ATTITUDE (affective, value, dispositions, think – 'habits of mind')

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Program Assessment

- WHAT ARE THE QUESTIONS?
    - Purpose is to obtain information that can be used by program faculty to answer …..
        - Are our students learning what we think is important?
        - Are they learning what they need to succeed in this field or profession?
        - Are we improving our ability to help student learn?
        - Should our curriculum or teaching strategies be modified?
        - Are there other techniques or additional resources that would help our students learn more effectively?

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Program Assessment

- ELEMENTS OF AN EFFECTIVE ASSESSMENT PLAN?
    - a) Decide on your purpose. (Mission)
    - b) Articulate in measurable & observable terms program-level student learning outcomes. (SLO)
    - c) Connect the outcomes to the program. (Curriculum alignment)
    - d) Agree on the strategies (measures), connect with the outcomes, establish your expected level of performance, and collect the evidence. (Strategies; Culture of Evidence)

Programs do not have to measure every outcome every year using all students.

- A multi-year plan to assess specific outcomes on a staggered basis is more effective in terms of the reality of the time available and the capacity of the faculty to process the results and determine how to make improvements.
- Select assessment strategies that will provide the program faculty the most useful and relevant information about student learning and development.
- Choose strategies that match your program's culture or discipline.
- *Remember: The findings you collect must have meaning and value to those who will be asked to make changes based on the findings.*

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Program Assessment

- The evidence you collect depends on the questions you want to answer. Adapted from Volkwein, J. *Program evaluation and assessment: What's the question (1996).*
  - *Does the program meet or exceed certain standards?*
  - *Does the program do a good job at what it sets out to do?*
  - *How can the program experience be improved?*
  - *How does the program compare to others?*
    - Use multiple strategies (measures) to assess learning that allow you to assess the strengths and weaknesses of your program.
- Adapted from OAPA Handbook. *PROGRAM-based review and assessment.* UMASS Amherst.
  - Multiple measures can assess different components of a complex task.
  - No need to design an all-purpose strategy.
  - Greater accuracy is achieved when several strategies produce similar findings or it provides the opportunity to pursue further inquiry when findings contradict each other.

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Program Assessment

- Use results for improvement. (Use & Share Results; Close the loop)
  - Facilitate discussion of curriculum and pedagogy at faculty meetings, committee meetings and retreats.
  - Facilitate discussion about the advising process.
  - Refine current assessment methods, instruments and/or practices.
  - Share results (information) with alumni and review boards.
  - Change course content or design.
  - Change assignments or assignment sequence.
  - Revise examination content and/or structure.
  - Change pedagogy.
  - Change relationships between faculty and students.

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Program Assessment

- WHAT STRATEGIES (MEASURES) HAVE THE POTENTIAL TO PROVIDE MEANINGFUL
- EVIDENCE ABOUT STUDENT LEARNING?
  - It is not just data; it is quantitative and/or qualitative. It is information that supports a claim; answers a question; leads to knowledge; stimulates analysis; suggests action.
  - **Direct Evidence:** Actual student work…
    - Project or activity from the capstone experience
    - Portfolio
    - Standardized tests (e.g. - Major Field Achievement Test, Test of Critical Thinking Ability, Academic Profile, or the Watson-Glasser Critical Thinking Appraisal)
    - Performance on national licensure, certification, or professional exams.
    - Locally developed tests (when validated and authenticated)
    - Essay questions with blind scoring
    - Reflection papers; Journaling
    - Qualitative internal or external juried reviews of comprehensive senior projects; external reviews of exhibitions and performances in the arts
    - External evaluation of performance during internship or student teaching.
    - Oral presentation - live, videotape or audiotape

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Program Assessment

- **Indirect Evidence:** Report of perception about learning…
  - Alumni, employer, and student surveys
  - Instructor/faculty survey
  - Exit interviews
  - Focus groups
  - Graduate follow-up studies
  - External or peer review

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Program Assessment

- **Supportive Evidence:** Typically considered non-measures of learning information; Inputs
  - Enrollment trends; Retention and transfer studies
  - Time to degree
  - SAT, ACT; GRE, GMAT scores
  - GPA
  - Graduation rates and transfer rates
  - Job placement data; Graduate school placement rate
  - Student Publications; Research presentations; Honors
  - Student participation rates in faculty research, publications and conference presentations
  - Curriculum analysis (Course prerequisites; credit hours)
  - Syllabus analysis (Learning experiences)
  - Course taking pattern (Transcript audit)
  - Faculty/student ratios
  - Percentage of students studying abroad
  - Diversity of the student body
  - Program documents, publications and/or website

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Program Assessment

- **How we started**
  - **Single course assessment**
  - **Multiple course consistency**
    - **Pre- post test**
    - **Middle States advisor – program assessment is the important part of assessment**

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Program Assessment

- **New matrix used**
- **Program assessment plans**

Student Learning Outcomes	Area of Development	Assessment Protocol	Time Frame
1. Develop and establish procedures for collecting, processing, and analysis specimens.	This outcome is fully integrated into each Bio/CLS lecture and laboratory course as well as the 7-credit Clinical Practicum. They learn this through lecture, case studies, assignments, laboratory and performance in the clinical laboratories. They achieve this outcome in all bio/cls courses through examinations, psychomotor performance criteria, and practical examinations.	Bio 460 through an oral case presentation and final research poster presentation. Bio 497 through the comprehensive final examination. Bio 497 through a Mock comprehensive registry examination On the ASCP web site. After completion of all Bio/CLS requirements completion of the Board of Certification Examination for Medical Laboratory Scientists (MLS) certification. Achievement is demonstrated on a 70% or higher score on Rubrics for oral presentations and Research Poster presentations. Achievement is demonstrated on score of 60% or higher on their comprehensive examinations. Achievement is demonstrated on passing with a score of 400 on the BOC ASCP MLS examination.	Data will be collected each semester that there are Bio/CLS graduates.
2. Apply scientific principles, such as physiology, immunology, biochemistry, molecular biology, genetics, microbiology, laboratory principles, and methodology to the clinical setting.	This outcome is fully integrated into each Bio/CLS lecture and laboratory course as well as the 7-credit Clinical Practicum. They learn this through lecture, case studies, assignments, laboratory and performance in the clinical laboratories. They achieve this outcome in all bio/cls courses through examinations, psychomotor performance criteria, and practical examinations.	Bio 460 through an oral case presentation and final research poster presentation. Bio 497 through the comprehensive final examination. Bio 497 through a Mock comprehensive registry examination On the ASCP web site. After completion of all Bio/CLS requirements completion of the Board of Certification Examination for Medical Laboratory Scientists (MLS) certification. Achievement is demonstrated on a 70% or higher score on Rubrics for oral presentations and Research Poster presentations. Achievement is demonstrated on score of 60% or higher on their comprehensive examinations. Achievement is demonstrated on passing with a score of 400 on the BOC ASCP MLS examination.	Data will be collected each semester that there are Bio/CLS graduates.

Program Assessment

- **Revised again to include formative and summative assessment**

Program Assessment

Core Learning Outcomes	IDEA objective Student rating	Direct Formative	Direct Summative	Indirect Assessment	Year Assessed
CG: 1 Comprehension : Think Critically and analytical					2014 -2016; 2017- 2018
LO: 1.1 Analyze and solve Complex problems	3. Learning to apply course material to improve thinking, problem solving and decisions	Core science courses Scientific method paper scored with Problem solving rubric 80% of sample reaches target level 2	Evaluation of internship, upper level nursing, ATR and CLS student, student teaching averages 4.5 or above	NSSE Survey of first year and senior students same or better than comparison groups	

Program Assessment

- **Revised again**
- **Includes**
  - **Student learning outcome**
  - **Core Learning outcome**
  - **Related IDEA objectives**
  - **Core mapping Formative Courses**
  - **Summative courses**
  - **Academic year assessed**
  - **Formative assessment**
  - **Summative assessment**
  - **Indirect evidence**

Program Assessment

- **Rubrics used**
- **Interrater reliability**
- **If not within 1 or 2 points a third rater is used**

Slide 43

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Slide 44

Preparing for Take-Off

- Training Tips- Perspective Three
  - A map of courses, outcomes, and assessments

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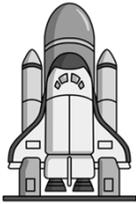
MLS Program outcomes (apply to both undergrad and grad)

1. Establish a personal scientific knowledge base

2. Demonstrate critical thinking and problem-solving skills

3. Perform a full range of laboratory tests with accuracy and precision.

4. Demonstrate appropriate professional behavior.

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Learning outcome	Assessment instruments					
	Micro lab assignment (direct)	Online Exam (direct)	Clin evals (ind)	Capstone project (direct)	Employer survey (ind)	ASCP Exam (ind)
1. Scientific knowledge base		X	X	X	X	X
2. Critical thinking	X			X	X	
3. Perform lab tests	X		X		X	
4. Professional behavior			X	X	X	

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Graduate-specific MLS Program Outcomes

A. Apply systems thinking to MLS practice

B. Incorporate current best evidence

C. Apply principles of quality management systems

D. Practice effectively in Interprofessional teams

E. Promote patient-centered healthcare through diagnostic and therapeutic support.

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Semester	Course	Outcomes			
		Introduce	Reinforce	Mastery	Assess
1. Fall 1					
	MDLS 510 Foundations	3, 4 D			
	MDLS 528 Immunohematology	1 B			
	MDLS 529 Immunohematology Lab	2, 3			
	MDLS 545 Clinical Chemistry I		1 B		
	MDLS 546 Clinical Chemistry Lab		2, 3		
	MDLS 547 Clinical Chemistry II		1 B		
	HLTH 600 Health Policy	D, E			

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4. Fall 2		Introduce	Reinforce	Mastery	Assess
	MDLS 640 Seminar III		4 D		
	MDLS 423 Molecular Techniques		1		
	MDLS 424 Molecular Diagnostics		3 B		
	MDLS 685 Clinical internship			3, 4	3, 4
	MDLS 680 Capstone			2 A, C, D	
	MDLS 686 Comprehensive exam			1	1 E
	HLTH 635 Leadership		D		

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Preparing for Take-Off!

- Assess what you value.
- Value what you assess.

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HOUSTON, WE NOW HAVE LIFT-OFF!

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Attention All Crew Members & Constellation Colleagues

NOW IT'S YOUR TURN…
TIME TO EXPLORE THE GALAXY: BEST PRACTICES

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MISSION ACCOMPLISHED!

AND NOW… FOR "THE REST OF THE STORY"…..

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Thank You! ☺

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