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Introduction: Graduate Program Assessment Guidebook

The goal of this guidebook is to provide an applied description of graduate program assessment at West Virginia University (WVU), including: the vision, principles, and expectations guiding graduate program assessment; basic guidance on assessment processes; example materials and demonstration of assessment of key milestones and programmatic elements; an index of assessment timelines and procedures; and appendices including templates (e.g., rubric-based templates for assessing graduate milestones) and glossaries (e.g., assessment terminology). Based on this broader goal, this guidebook intends to:

1) serve as an assessment resource for individuals new to graduate program assessment as well as those developing graduate programs at WVU, and

2) provide examples highlighting the use of assessment principles and processes with graduate programs at WVU.[1]

This guidebook is broken down into four major sections. In the first section, we overview the purpose and importance of graduate program assessment. In this overview, we highlight key policies and principles that support graduate assessment at WVU and acknowledge features of graduate program degrees that make assessing programs nuanced and, at times, challenging.

In the second section, we describe the major steps in developing and maintaining an assessment plan. This description is based on a provided assessment plan template able to be used by graduate programs at WVU. Each section of the assessment plan is then described – as well as the specific components that contribute to them – and examples of select sections are provided.

In the third section, we describe how assessment results can be used to support program review and improvement and, in particular, the development of an action plan. We also highlight other components of program review, including SWOT analysis and basic ways to leverage assessment to track and examine program recruitment and retention. Because these latter programmatic review processes are broader in scope and are informed by program assessment, they are highlighted rather than described in detail.

The fourth and final section contains appendices that list existing templates (e.g., thesis/dissertation rubric guidelines and template) and other assessment resources able to be used to support graduate program assessment.

[1] This guidebook was drafted by Jake Follmer, Robynn Shannon, and Lou Slimak and is intended to serve as an assessment resource. Examples and suggestions included in this guidebook are illustrative.

Section 1: Purpose and Importance of Graduate Program Assessment

At a broader level, assessment is based on a process of gathering evidence, ensuring that evidence is of sufficient quality to be useful, and using that evidence to inform an understanding of what works and what needs to be improved (Barnacle, 2008; Council of Graduate Schools, 2011; Nichols & Nichols, 2000; Nichols & Nichols, 2005; Suskie, 2018).

Assessment of graduate programs should lead to meaningful action, developed across both shorter- and longer-term cycles, to directly address the strengths, weaknesses, opportunities, and threats indicated by the assessment information obtained. Successful program-level assessment is planned, collaborative, and ongoing, but is implemented in a way that is manageable.

Graduate program assessment directly supports program improvement by: grounding evidence of program quality and effectiveness; promoting program planning, development, and revision; and foregrounding the learning needs and career goals of graduate students. At WVU, graduate program assessment is supported by The Office of the Provost and is a required component of program review.

Assessment of a graduate program is a holistic process that draws on multiple evidence sources – ranging from student learning assessment to measures of student success and program impact – to support a more informed evaluation of the program. Assessment of student learning in a graduate program centers on direct and indirect evidence of student achievement of learning outcomes. Informally, assessment of student learning is based on deciding what students ought to learn and providing evidence that they learn it (Suskie, 2018). Student learning assessment is often broken down into the following key steps: establish clear outcomes for student learning; provide opportunity for students to attain and achieve those outcomes; gather and synthesize evidence of students' learning based on those outcomes; and interpret and use the information to improve student learning. Assessment of student learning can be viewed as a major component of and contribution to program assessment – the processes involved in assessment of student learning provide important information for critically evaluating, refining, and improving a program.

Assessment – whether undergraduate or graduate – is supported jointly by the Associate Provost for Curriculum and Assessment and the Director of Curriculum Development. Both the Associate Provost and Director of Curriculum Development serve as coordinating resources for assessment of learning; additional resources are also available to support these assessment efforts. Importantly, graduate program

assessment also informs broader academic transformation efforts at WVU and, in particular, recently articulated priorities for graduate education[2].

While the assessment of undergraduate programs is often based on established methods, features of graduate degree programs at times require unique assessment approaches that are distinguished from approaches commonly used in undergraduate assessment. As examples of these features, graduate programs:

- vary in size, structure, and models of training
- may or may not be individually accredited
- are often grounded in and aligned with a range of outcomes that are complex (e.g., development of empirical and methodological skills; emphasis on analyzing, evaluating, and creating) and extend beyond traditional learning outcomes (e.g., career outcomes; dissemination of creative or empirical work)
- vary in type and emphasis: some are professionally or practice-oriented, while others are academically-oriented
- are based on a range of programmatic milestones and culminating experiences, including performance- or exhibition-based experiences, theses and dissertations, and practical projects that emphasize the application of knowledge in varied settings

Though some of these features also bear on the assessment of undergraduate programs, the wide range of graduate programmatic structures, experiences, and milestones present unique challenges to key program personnel aiming to assess the quality of graduate degree programs. Based in part on these considerations, graduate assessment plans are likely to contain common components (e.g., curriculum and assessment mapping, formative and summative measures of student learning) but will also be flexible and tailored to the features and outcomes of a given graduate program. Regardless of the structure of these assessment plans, they must ground coherent and useful program decisions and improvement efforts.

The Office of the Provost at WVU acknowledges the rich diversity in graduate programs at West Virginia University, and view our role as supporting faculty and administrative leadership in developing and maintaining assessment plans that are contextualized to their programs and yield meaningful and actionable results. We adopt a view of effective graduate program assessment as being: faculty-driven, student-centered, ongoing, data-based, and improvement-focused. We also emphasize a philosophy that assessment should be meaningful (i.e., program assessment should reflect the interests, knowledge, concerns, and priorities of program faculty), manageable (i.e.,

[2] As of February, 2022.

program assessment should be based on sound and sustainable practices), and – importantly – sustainable.

This broader philosophy of graduate assessment is further based on the commitment to assessment practices that[3]:

- Lead to results that are useful and used.
- Flow from and focus on clear and important goals.
- Are cost-effective, yielding results that are useful enough to be worth the time and resources invested.
- Yield reasonably accurate and truthful results.
- Are valued.
- Yield results that are used in meaningful ways to improve teaching and learning. This can only happen if assessment practices focus on clear and important goals and yield reasonably accurate and truthful results. And using assessment results to inform meaningful decisions is the best way to show that assessment work is valued.
- Are sustained and pervasive. This can only happen if assessment practices are cost-effective and are valued.

In accord with this philosophy, graduate program assessment at West Virginia University is based on several assumptions, principles, and expectations:

- The development and maintenance of academic quality and graduate assessment plans reflect shared responsibilities of core graduate faculty contributing to graduate programs.
- Graduate programs – and assessment plans that support them – are based on well-defined and clearly articulated learning outcomes.
- Assessment plans supporting graduate programs are regularly reviewed and are grounded in clear and clearly articulated evidence.
- Approaches to assessing students' knowledge, skills, beliefs, or dispositions are based on a range of measures – direct and indirect – to support triangulation and complementarity as well as trustworthiness of the findings obtained.
- Graduate assessment plans gather meaningful information about the full range of programmatic experiences required of a graduate degree program, including, as applicable, core coursework and curricular experiences, key milestones and culminating activities (e.g., performances, theses, dissertations), and applied or practicum experiences (e.g., teaching apprenticeships).
- Graduate assessment plans serve to support broader program review efforts, including recruitment goals and processes and program viability.

[3] These principles are articulated here (as written by Lou Slimak): https://undergraduate.wvu.edu/assessment.

- Graduate assessment plans emphasize the analysis of post-graduate outcomes to describe and contextualize the academic and professional achievements of program completers
- Graduate assessment plans are crafted with an explicit focus on program development and improvement, and to align with the broader University mission, vision, and values as well as strategic initiatives.

Section 2: Developing and Maintaining a Graduate Assessment Plan

An assessment plan is a detailed description of the methods and processes used to guide assessment, analysis, and summary of student learning and program impact. While there is some variation in the way assessment plans are structured, they typically contain (some version of) the following sections and emphases:

- Description of the program:
  - summary of the program's mission and goals, its structure, format, and requirements, its alignment with the University's mission and aims, and its contribution and value
- Articulation of program learning outcomes:
  - description of learning outcomes guiding implementation and assessment of the graduate program (i.e., behaviors that evidence the acquisition of desired knowledge, skills, beliefs, or dispositions);
  - as described in Appendix A and articulated by the UAC, these learning outcomes guide evaluation of whether students are achieving the educational objectives of a graduate degree program
- Delineation of curriculum and assessment mapping:
  - a representation (usually a chart or table) depicting the alignment between the curriculum and program learning outcomes;
  - explicitly identifies program points (e.g., courses, milestones) during which students are introduced to, develop, and master the learning outcomes guiding the graduate program;
  - can be expanded to identify points along the curriculum during which program assessments are offered, and the criteria by which those assessments are evaluated
- Description of assessment methods and measures:
  - a detailed explanation of: the direct (i.e., those that require demonstration of knowledge, skills, competencies, etc.) and indirect (i.e., those that obtain reports of or reflections on outcomes) measures used to collect information about student learning and the broader impact of the program
  - measures described are explicitly aligned with each program learning outcome as well as any related program outputs (e.g., dissemination of empirical works, placement rates and summaries) that complement traditional learning assessment
- Description of assessment cycles and procedures:
  - summary of the timeframes for collecting, analyzing, and reviewing assessment data;
  - used to situate a description of the shorter- and longer-term cycles (i.e., plan, assess, analyze, act) guiding assessment of the graduate program as a whole

- Description of the review and use of assessment data:
    - a summary of who will receive and review major assessment findings (and when);
    - implications for use and incorporation of assessment results (e.g., curricular revisions) are explicitly described;
    - involvement of a range of stakeholders (e.g., faculty, program committees, students, accrediting bodies) in assessment review is indicated

Collectively, these sections provide a holistic and program-centered description of the process and cycles of assessment that equip you to:

- articulate the goals and outcomes guiding your program
- identify where, when, and how these outcomes are being assessed (and met)
- explain your use of measures – both direct and indirect – to capture information about students and your program, including:
    - mastery of key knowledge and skills
    - dispositional characteristics (e.g., values)
    - reflections on and ratings of student learning, satisfaction, and program features
    - longer-term program outcomes and outputs (e.g., employment or placement information)
- plan for the collection, analysis, and reporting of varied sources of assessment information
- determine and explain when and how assessment information will be used, as well as how and with whom it will be shared

More fundamentally, the sections that make up the overall assessment plan position you to tell the story of your program – its context, strengths, and achievements as well as its areas of need.

While there is flexibility in the format and structure of the assessment plans able to be used by graduate programs at WVU, examples of plans and templates are available on the Provost's Office website (Student Learning Assessment).

In the subsections that follow, major components of an assessment plan are summarized and applied to the assessment of example graduate degree programs at WVU. These examples are meant to be illustrative rather than exhaustive; provided templates and materials will need to be contextualized to the features of your graduate program. Where applicable, for each major assessment component described, expectations for completion specific to graduate program assessment, key contacts available for support at WVU, links to associated resources, and worked examples demonstrating use of the component are provided.

2a. Assessment Component: Program Mission and Description

The program mission and description provide an overview of and context for your program. Together, these components tell the reader about your program, what it aims to do, the contribution it provides, information about its structure and delivery, and information about the marketing of the program. They also signal the assessment of any unique features of your program, including program outputs. In short, program assessment should reflect the nature of your program as articulated in your program mission and description. In the context of the assessment plan, the program mission and description may be separate or combined sections.

The program mission and description sections are typically completed by addressing – whether implicitly or explicitly – the following questions:

- What is the purpose of the program?
- What is the program's focus?
- What is the market for the program?
- How does the program target and address that market?
- How is the program delivered?
- Is the program specially accredited, or does it meet or contribute to broader accreditation standards?
- Are there other external indicators of program quality?
- What are the features, components, and experiences of the program?
- What are the program's strengths?
- What makes the program stand out among its peer programs?
- What milestones or major program experiences have been identified and implemented to support students' mastery of program outcomes?
- What does the program expect for its students once they have completed the program?

For many programs, these sections will have been completed or have likely existed for some time. As with other components of a broader assessment and review plan, the program mission and description should be reviewed regularly to ensure that they: 1) are current and reflective of the program and 2) align with broader University mission, values, and strategic initiatives.

Example program mission and description statements based on programs currently or previously offered at WVU are included here. Note that these statements reflect select portions of larger program mission and description sections.

Master of Arts in Literacy Education:

- "The nationally recognized WVU Literacy Education online master's program prepares candidates to be certified as Reading Specialists (Pre-K-Adult)."

Master of Arts in Instructional Design and Technology:

- "The Master of Arts Program in Instructional Design and Technology is an online graduate program designed for the individual who wants to apply cutting edge instructional technologies and sound design strategies in any learning setting, including public schools, higher education, and corporate and nonprofit institutions."

Master of Arts in Communication Studies:

- "The M.A. program in Communication Studies with an emphasis in Theory and Research is intended to qualify students to assume a variety of professional roles in educational, industrial, and government institutions; teach the subject matter at the college level; or undertake advanced training toward a doctorate in Communication Studies."

Master of Science in Wildlife and Fisheries Resources

- "The Wildlife and Fisheries Resources Program at WVU is dedicated to developing the next generation of young fisheries and wildlife professionals."

- **Expectations for use:** Expected
- **Key contacts:** Robynn Shannon, Director of Curriculum Development
- **Associated resources:** Assessment Plans and Reports section of Student Learning Assessment
- **Suggested timing for review and revision:** Annual or Biennial

2b. Assessment Component: Learning Goals and Outcomes

As described in other WVU-based resources, learning outcomes describe what students will know (knowledge), be able to do (skills), or be like (dispositions) by the end of a course or academic program. There are many resources available to help you create effective learning outcomes. These resources will largely provide similar guidance but may at times differ in styles of or approaches to writing outcomes. In general terms, effective program learning outcomes:

- Are written clearly, concisely, and explicitly
  - Each outcome should focus on a key knowledge area, skill, or disposition
  - Don't overload outcome(s) with multiple attributes or with complex or ambiguous language
- Focus on appropriate and observable knowledge, skills, and dispositions
  - Outcomes are aligned with the level of learning expected in the degree
  - Outcomes reflect the nature and rigor of graduate study
  - Outcomes focus on specific knowledge, skills, and dispositions that can be readily assessed and for which specific evidence can be obtained to determine the degree to which those outcomes have been met
- Are achievable and manageable
  - Outcomes are crafted to shape students' learning, development, and mastery across their completion of the program
- Reflect the full scope and sequence of the program
  - Outcomes characterize the whole of what students are to gain from completing the program, from mastery of introductory or core coursework to the completion of capstone and other milestone requirements
- Inform the implementation of learning and related program-based activities
  - Outcomes should be aligned with and addressed by learning activities and assessments that thread throughout students' program experiences
- Are regularly reviewed and revised
  - Outcomes can (and should) change to reflect improvements in or changes to the program, or to better articulate what you intend students to have achieved after completing the program

In addition, learning outcomes – whether course- or program-based – should be clearly communicated to students. In other words, learning outcomes should be developed with the learner in mind. Another way of saying this is that the student should be able to understand why the outcome is important (i.e., why meeting the outcome is meaningful in terms of the program's mission goals), what activities provide information about that outcome, and how their performance on that particular outcome will be assessed.

Practically speaking, the learning outcomes used to guide your program and its assessment plan should also be consistent and consistently communicated, in both the

curriculum inventory management (CIM) system and the catalog as well as in any materials that describe or promote the program.

In addition to these considerations, additional guidelines for writing learning outcomes are provided by the WVU Teaching and Learning Commons (see below for the link to these guidelines).

Examples of master's program learning outcomes based on programs currently or previously offered at WVU include:

- Identify an ethical dilemma and propose a solution
    - Program: M.Acc.
- Use business analytics to synthesize data trends and competitive drivers
    - Program: M.S., Business Data Analytics
- Integrate and apply the functional areas of business to experiential business problems
    - Program: M.B.A.
- Apply iterative design process to solve real world problems
    - Program: M.S., Design and Merchandising
- Construct an integrated evidence-informed theoretical framework appropriate to the level and context of practice situations
    - Program: M.S.W.

Examples of doctoral program learning outcomes based on programs currently or previously offered at WVU include:

- Critique and assess peer-reviewed literature and apply research findings to the resources and management of their emphasis area
    - Program: Ph.D., Forest Resources Science
- Organize and assess a community engagement project
    - Program: Ph.D., Human and Community Development
- Apply sociological theories and methodological skills to evaluate social issues and develop a research program
    - Program: Ph.D., Sociology
- Apply responsible research practices to the conduct of their experiments
    - Program: Ph.D., Biomedical Sciences

- Apply theories and methodologies to address fundamental questions in health-specific issues related to exercise physiology
    - Program: Ph.D., Exercise Physiology
- Disseminate research findings through appropriate peer-reviewed publications and presentations, and to other public health community audiences
    - Program: Ph.D., Public Health

- **Expectations for use:** Expected
- **Key contacts:** Robynn Shannon, Director of Curriculum Development; Lou Slimak, Associate Provost for Curriculum and Assessment
- **Associated resource:**
    - Writing Effective Learning Outcomes (Teaching and Learning Commons)
- **Suggested timing for review and revision:** Annual or Biennial

2c. Assessment Component: Curriculum Mapping

Curriculum mapping is a way of representing the alignment between program experiences (e.g., courses, practicum, milestones, apprenticeships, etc.) and the learning outcomes guiding the program. Curriculum mapping serves several functions. First, it allows for an understanding of which program experiences address specific learning outcomes. Relatedly, it also allows for an examination of any gaps in the curriculum or program components that leave specific outcomes unaddressed or under-addressed. At a more holistic level, curriculum mapping helps faculty to understand students' development and progression through a program as well as where – and when – students master the specific knowledge types, skills, and dispositions emphasized in a program. It also helps faculty assess coherence and cohesion of program curriculum.

Specific to program assessment, curriculum mapping helps program personnel identify and summarize what assessments are being used to address and inform reporting on learning outcomes, where and when those assessments are implemented and, possibly, basic information about thresholds or criteria for performance on those assessments. As a result, curriculum mapping can take on a few different forms: a standard map depicts alignment between program components and learning outcomes while an expanded map also summarizes key information about assessments used to address those learning outcomes. For this reason, curriculum (and assessment mapping) is particularly useful as a means of describing assessment cycles and procedures (summarized next in Section 2e).

Example 2c.1 (below) presents a standard curriculum map applied to a doctoral program with an academic focus. Like many doctoral programs, this example program sequences students' learning opportunities across conceptual core coursework, research methodology coursework, applied experiences (in this programmatic example, referred to as teaching and research apprenticeships), and milestone requirements (i.e., comprehensive examination, dissertation proposal, dissertation defense). While other programs will likely vary in the timing (e.g., before core coursework completion) and type (e.g., qualifying paper) of these milestone requirements, much of the purpose and intention of these experiences are similar.

In the particular example highlighted in Example 2c.1, the learning outcomes are listed in the left-hand column, while the specific program experiences are listed across the map. This formatting decision is largely arbitrary (e.g., learning outcomes could also have been listed across the map). A system of I-introducing, R-reinforcing, M-mastering was applied to specific program experiences to depict students' development in skills across their engagement in the program. This system could also have varied (e.g., introducing, developing, capstone) but the larger thrust is to show when, where, and how students develop across the program.

2c.1: Example Curriculum Map (Part 1): A Doctoral Program with an Academic Focus

Learning Sciences and Human Development Ph.D. Program: Curriculum and Assessment Map: Standard												
Program Outcomes	**Program Experiences**											
	Conceptual Core Courses				**Research Methodology Core Courses**			**Apprenticeship Experiences**		**Major Program/Milestone Requirements**		
	LSHD 701	LSHD 702	LSHD 703	LSHD 704	EDP 614	EDP 618	SCFD 715	Teaching	Research	Comprehensive Examination*	Dissertation Proposal	Dissertation Defense
PLO1. Be a reflective, ethical, and effectual professional	I	I	R				R	R		R	M	M
PLO2. Critically evaluate scholarship, policy, and practice in order to promote equity, access, and social justice		I	R		R		R	R		M		
PLO3. Apply research and theory to timely issues			I	I		R			R		M	M
PLO4. Create original research that advances the field			I	I					R		M	M

Notes. I=Introducing the outcome. R=Reinforcing the outcome. M=Mastering the outcome.
*Passing of the comprehensive examination constitutes admission to candidacy in the program.

Only core coursework and experiences – those completed by all students in the program – are listed in the map. Based on this example, each of the four core program learning outcomes are addressed – to varying degrees – across students' programmatic experiences. Critically, one course (LSHD 701) appears to address only one outcome (PLO1), and there appears to be more limited opportunity for students to demonstrate mastery on one outcome (PLO2). Further analysis might show that there is less opportunity for students to be introduced to PLO2, while there is also less opportunity for students to develop or reinforce skills specific to PLO4.

This mapping allows faculty to understand alignment at the level of the learning outcome (i.e., within-learning outcome) and at the level of the course/program experience (i.e., within-experience). Typically, initial or foundational program experiences serve to introduce learning outcomes, while later or culminating program experiences serve to provide students with mastery opportunities on those outcomes. Note, however, that this may not always be the case depending on the nature of the learning outcome. Further, in initial drafting of a curriculum map, complex outcomes may only be developed or reinforced by the time students complete a program. On the other hand, it might be the case that – upon initial mapping – simpler outcomes may be developed or reinforced in initial courses. Either of these (relatively simple) examples might suggest a larger need to evaluate the appropriateness and sequencing of program learning outcomes.

A curriculum map should be co-developed and reviewed by all individuals involved in a particular graduate program. At a minimum, faculty involved with and overseeing (e.g., teaching, coordinating) specific course components of the program (e.g., the instructor of LSHD 702 in the example above) should provide input in identifying and corroborating both the alignment between program and outcome and the developmental level addressed by these experiences. Regardless, faculty input is critical for the success and accuracy of this mapping work.

A standard curriculum map such as the one depicted in Example 2c.1 can be used to inform a variety of programmatic questions and analyses that help faculty critically evaluate and improve their offerings. These include:

- Are there gaps in where and how learning outcomes are addressed?
    - Is each learning outcome supported by (at least) one program experience?
    - Does each program experience support (at least) one learning outcome?
- Is there sufficient opportunity for students to be introduced to each learning outcome (particularly those that are more complex)?
- Is there sufficient opportunity for students to develop and demonstrate mastery of each learning outcome?

- Do the learning outcomes 'make sense'?
    - Do they support students' development – across the program – in the way intended?
    - Do they capture and emphasize the full range of knowledge, skills, and dispositions important to the program?
- Do program experiences (e.g., courses, apprenticeships) align with program learning outcomes?
    - Is there opportunity to develop or revise a common learning activity, embedded in a course, practicum, or apprenticeship, to meaningfully inform analysis of a particular learning outcome?
    - Is there opportunity to make broader revisions to program experiences to improve instruction or augment coverage of a particular learning outcome?

Curriculum mapping also affords a broader analysis of the program curriculum. These curricular questions overlap with those listed above, and include considerations such as:

- Is the curriculum focused, streamlined, and consistent?
- Does the curriculum demonstrate what is sometimes referred to as "appropriate, progressive rigor"? (Suskie, 2018)
- Is there opportunity to revise, trim, add, or augment coursework to better support students' learning – and attainment of learning outcomes?
- Does the program conclude with a meaningful and integrative culminating experience (e.g., master's project or thesis, dissertation, performance, etc.) that indicates students' progression in knowledge, skills, or dispositions?
    - Is that culminating experience assessed in a way that yields meaningful and trustworthy information about student learning?
- Are features of the curriculum and the learning outcomes communicated clearly to students?
    - Do syllabi openly present the alignment between any key learning activities and program outcomes that are supported?
    - Do students understand the importance of as well as when and how they are being assessed on the program learning outcomes?

In addition to this more standard presentation of curriculum mapping, faculty can opt to develop and present an extended version that includes key program assessment information. Example 2c.2 provides a snippet of assessment mapping embedded within the larger program curriculum map. Specifically, it presents assessment mapping for two select courses (701 and 702) that contribute to the conceptual core portion of the program curriculum.

2c.2: Example Curriculum and Assessment Map (Part 2): Summarizing Program Assessment Information Through Curriculum Mapping

Program Outcomes	**Program Experiences: Learning and Program Activities Aligned with Key Outcome Areas**	
	Conceptual Core Courses (Select)	
	LSHD 701	**LSHD 702**
PLO1. Be a reflective, ethical, and effectual professional	**Level:** Introducing **Key Activity**: Personal Theory(s) of LS&HD **Description**: Develop representations of major theories in LS&HD that demonstrate the meaning and utility of the theory. **Timing**: Fall semesters (odd): Fall, 19; Fall, 21 **Criterion**: 85% performance (34 pts), assessed on a 10-item analytic rubric, 4 points per rubric item, 4 levels per rubric item	**Level:** Introducing **Course Activity**: Literature Review **Description**: Compose a literature review for a (possible) future empirical inquiry. Demonstrate how you are developing a new topic of inquiry by building from a range of existing literature. **Timing**: Spring semesters (even): Sp, 20; Sp, 22
PLO2. Critically evaluate scholarship, policy, and practice in order to promote equity, access, and social justice		**Level:** Introducing **Key Activity**: Inquiry Dissection and Reflection **Description**: Describe a topic of interest, list topics and sub-topics related to your inquiry, articulate connections between your topic and its associated topics, cite at least one major work representing each topic. Then, create two representations that demonstrate and describe the connections among these areas of inquiry. **Timing**: Spring semesters (even): Sp, 20; Sp, 22 **Criterion**: 85% performance (17 pts), assessed on a 5-item analytic rubric, 4 points per rubric item, 4 levels per rubric item
PLO3. Apply research and theory to timely issues		
PLO4. Create original research that advances the field		

Note. Program activities contribute directly to and are summarized in program assessment efforts. Course activities demonstrate broader coverage and mastery of learning outcomes but are not included in program assessment summaries.

Based on this example, program activities are included in both LSHD 701 and LSHD 702 that intend to address the first and second program learning outcomes (PLO1 and PLO2). These activities are briefly described in the map, and both the type of assessment and any aligned criteria (i.e., threshold) for performance are defined. In addition to these two key activities, a more general course activity is also described. For this particular map, key activities describe those assessments that contribute directly to program assessment efforts, while course activities may or may not be summarized in program assessment work.

The example featured (2c.2) reflects one way of leveraging curriculum mapping to guide the process of developing an assessment plan. Other approaches exist that more concisely code and indicate when and how activities are implemented and the criteria for determining success on program outcomes. In addition, beyond the present example, there is additional opportunity to further link students' experiences across activities, courses, and – ultimately – the program. In particular, an additional level of linking that is not featured in the current example is based on course-level learning outcomes. Specifically, it may be beneficial for programs to link more fully the outcomes addressed by a learning activity with the course-level outcomes supported by that activity which, in turn, are linked with and support attainment of program learning outcomes. This activity-course-program linkage reinforces the connection between the course and the PLO being evaluated.

Together, program learning activities should be selected to assess the full range of learning outcomes emphasized by the program. At a broader level, faculty should consider the following guidelines as they review this assessment mapping:

- there should be at least one program activity (i.e., an assessment that is analyzed and reported on for the broader purpose of program assessment) that addresses each program learning outcome
- a program learning outcome may ideally be addressed – implicitly or explicitly – by a variety of activities and experiences across a program
    - some of these may be course-based activities, while others may reflect program experiences that are important (i.e., show coverage of learning outcomes) but aren't explicitly featured in a program assessment plan
- program activities should draw on the use of direct measures (described in more detail in Section 2d)
- indirect measures provide meaningful assessment information that can 1) complement the use of direct measures and 2) provide broader, program-level assessment of impact and student success

Exceptions to these guidelines include instances when 1) the program is relatively new or is under substantive revision and 2) the assessment plan is new or is being developed for a given program.

General suggestions for completing curriculum mapping include the following considerations:

- curriculum mapping should be a shared process, one that includes input from all core program faculty
    - ensure there is representation of faculty involved in each major component of the program (e.g., core coursework, applied experiences, culminating experiences)
- allow time for curriculum mapping to occur, and space the alignment of program experiences to program outcomes over time, possibly across several meetings
- relatedly, conduct curriculum mapping in phases
    - as one example approach:
        - phase 1: discuss, refine, and finalize program outcomes
        - phase 2: build the structure of the map, and identify (initially) core program elements (i.e., courses, experiences) to be included
        - phase 3: conduct an initial alignment between the program mission, curriculum, and learning outcomes
        - phase 4: evaluate, refine, and finalize alignment; evaluate coverage and discuss gaps in alignment; evaluate the coherence and cohesion of the curriculum
        - phase 5: identify, list, and briefly summarize key activities that address each learning outcome
- curriculum mapping is often best completed alongside a review of program syllabi
    - it is often the case that updates to syllabi are made as a result of curriculum mapping
        - e.g., evaluation of: course descriptions, course learning outcomes, alignment between different syllabi for the same course(s), course activities and assessment structure, etc.
- share (close-to-final) drafts of the mapping with students enrolled in your program(s) to gauge what makes sense and what needs to be more clearly explicated
    - e.g., can students readily understand how various program and course-based experiences and activities support their learning and the outcomes?

❖ **Expectations for use:** Recommended, but not expected[4]

[4] As of December, 2022.

- **Key contacts:** Robynn Shannon, Director of Curriculum Development; Stephanie Young, Teaching Associate Professor and Eberly College Director of the STEM Collaborative
- **Associated resources:** Curriculum Maps section of Student Learning Assessment
- **Suggested timing for review and revision:** Annual or Biennial

2d. Assessment Component: Assessment Methods and Measures

Assessment plans should rely on a variety of evidence to support analysis of student learning and program impact and, thus, should be based on a range of sources of evidence. As noted by Suskie (2018), effective assessment gathers useful information, prioritizes what's important to the program, is fair, unbiased, and equitable, and yields accurate and reliable evidence. Sources of evidence are typically described as being either direct or indirect. Generally, direct measures require demonstration of knowledge, skills, and competencies, while indirect measures gather reports of or reflections on program-based outcomes. Both types of measures can be used to collect information about student learning and the broader impact of the program and should be used to complement one another in meaningful ways.

Examples of direct evidence of student learning include:

- Rubric-based assessments of student learning activities
    - Written work
    - Capstone experiences
    - Portfolios of student work
- Rubric-based assessments of student performances, exhibitions, and presentations
- Assessments of student skills and competencies in field experiences and related applied settings
- Score and pass rate information on certification and licensure exams
- Score and pass rate information on standardized assessments of skills and knowledge
- Score and pass rate information on program milestone assessments
    - Candidacy examinations
    - Comprehensive examinations
    - Thesis and dissertation proposal and defense
        - E.g., Rubric-based scores
        - E.g., First pass rate, final pass rate
- Score gains based on program pre-post measures of student skills and knowledge
    - Locally-designed multiple-choice and essay-based tests that are aligned to specific learning outcomes and indicate types of knowledge being assessed

Examples of indirect evidence of student learning and program impact include:

- Course grades[5]

[5] Grades—whether at the assignment/test or course level—may be either direct or indirect evidence of student learning.

- Assignment and test grades
    - I.e., Score/percentage information (without specifications, analytic rubric, or alignment to specific learning outcomes)
- Graduation/completion rates
- Placement and admission rates of completers
    - Career placement rates
    - Graduate education rates
        - E.g., student enrollment in additional/advanced graduate programs
- Completer perceptions of program quality, satisfaction, and success in meeting stated outcomes as well as ratings of their skills and knowledge
    - Pre-program and post-program surveys of student beliefs, perceptions, and interests
        - E.g., student exit surveys
- Alumni perceptions of program quality, satisfaction, and impact in meeting stated outcomes
    - E.g., 1-3 years after program completion
- Employer perceptions of program quality
    - E.g., employer surveys
- Student achievements and accomplishments
    - E.g., Dissemination rate information
        - Number of student co-authored, first-authored, solo-authored empirical works
            - E.g., publications, presentations
    - E.g., Tracking of exhibitions and performances

It's generally considered good practice to include a range of measures in your assessment plan to provide triangulated information about your outcomes and program as a whole. In this sense, programs should strive to gather a set of meaningful and manageable direct measures to provide evidence of student learning across program learning outcomes. Importantly, programs should also strive to incorporate indirect measures to provide more holistic information about students' beliefs, perceptions, and attitudes regarding the program, as examples.

A common assessment structure used to collect and triangulate direct and indirect evidence of student learning in research-oriented graduate programs is based on the following:

- The identification, alignment, and collection of data from learning activities implemented in conceptual core coursework
    - E.g., scoring of major course assignments, papers, and projects that capture information about students' core content knowledge and mastery

- The identification, alignment, and collection of data from learning activities implemented in research methodological coursework
    - E.g., scoring of major course assignments, papers, and projects that capture information about students' methodological knowledge and mastery
- Direct and indirect assessment of students' performance on major program milestones
    - E.g., a developed rubric-based assessment of students' performance on the dissertation proposal and defense
        - Collects consistent, parallel information about students' ability to: clearly describe and conceptualize a research problem; synthesize and integrate existing research and literature; identify, develop, and implement effective research methods; and present, defend, and contextualize findings
    - E.g., pass rate information (i.e., first pass rate, final pass rate) describing student success on comprehension/qualifying examinations, dissertation proposals, and dissertation defenses
- Indirect assessment of students' beliefs and interests at program entry and their perceptions of program quality, satisfaction, and impact at program exit and follow-up
    - E.g., developed surveys that assess students': perceived attainment of skills and competencies emphasized in program outcomes; satisfaction with key elements of the doctoral program; perceived impact of the program on their employment information and post-program success; productivity via authored/co-authored presentations and publications

Assessment of students' performance on major culminating experiences in a graduate program (such as qualifying and comprehensive examinations and various components of their dissertation work) as well as their perceptions of program quality, satisfaction, and impact are core elements of graduate program assessment. These elements are also emphasized in current expectations for program review. Accordingly, these assessment elements will be described in more detail in the next subsections.

Direct Assessment of Major Program Milestones

Graduate programs at WVU should have clear, consistent, and robust procedures in place for evaluating the quality of student work based on major program milestone requirements. Common milestone examples include master's theses or projects, doctoral qualifying examinations, dissertation proposals, and dissertation defenses. In short, programs should examine and report evidence of mastery that supports program-level learning outcomes and is grounded in students' completion of these milestones. While the following example is contextualized to the evaluation of a traditional doctoral dissertation, much of this work can be adapted and applied to other culminating

activities, including a dissertation of practice, a master's thesis, a master's project, and even a dissertation proposal.

One approach to assessing students' dissertation work – and other major program milestones – is to pair a broad metric with a rubric-based metric. In line with this approach, programs may: 1) collect and report specific pass rate information summarizing students' specific performance across milestones and major program experiences (e.g., proposal and defense) and 2) collect and report rubric-based data evaluating the quality of the dissertation along established dimensions (e.g., theoretical synthesis and grounding, use and application of methodology, etc.).

Pass rate information for specific activities or milestones is commonly divided into two types (but other pass rate metrics may make sense for your program): first pass rate and final pass rate. The first pass rate reflects the percentage of dissertations obtaining a pass decision on the first attempt, where the term attempt is construed broadly to account for differences in program structure for the defense and submission of a dissertation. The final pass rate reflects the percentage of dissertations obtaining a pass decision after all attempts, inclusive of requirements to revise the dissertation work. Based on this delineation, dissertation decisions that either receive a pass decision or a fail decision at the outset (i.e., at the first attempt, with no need or opportunity for further work) would be counted in the calculation of the first pass rate. Dissertations that receive a revise-type decision on the first attempt would be decisioned and counted in the final pass rate (i.e., either a pass or fail determination at the final attempt). Depending on the specific structure of and approach to the dissertation (and its evaluation) in your program, delineating first and final pass rates may make more or less sense.

In addition to pass rate information, time-to-completion metrics aligned with specific program milestones and activities often provide meaningful and triangulated information about students' progress with major program milestones. For example, tracking time-to-candidacy (however that may be defined for a program), time-to-proposal, and time-to-defense provides coarse information about students' overall development and success in a program. Regardless of the differences in the evidences used to gauge student work and progress, the important consideration for program assessment purposes is to 1) communicate the overall degree of success that students evidence in major culminating activities and milestone experiences in your graduate program and 2) ground an understanding of specific areas (e.g., skills, competencies) of strength and need for students. Understanding, for example, where students struggle or demonstrate areas of need can directly inform curricular and other programmatic decisions that occur prior to major program milestones.

The collection of direct evidence of student performance on the dissertation is most commonly based on the development and use of a dissertation assessment rubric. Templates for and examples of these rubrics are available from the Director of Curriculum Development and in the Associated Resources area below (see also

Appendix B and Appendix C of this guidebook). General guidance for the development of a dissertation assessment rubric includes the following:

- Identify 5-10 areas to be evaluated using the rubric. These areas can be thought of as dimensions of students' knowledge, skills, and competencies that are important for and reflected in the dissertation work and speak directly to the program outcomes. Common dimensions or areas include (but are not limited to): synthesizing prior research; applying theories and concepts of the discipline; situating current work in existing research findings and theoretical frames; demonstrating mastery of methods of inquiry; communicating findings and implications effectively; embodying a "definite contribution to knowledge".
- Clearly define and articulate levels of performance. Common examples include: does not meet expectations, meets expectations, exceeds expectations; fail, low pass, pass, high pass; needs improvement, acceptable, commendable; beginning, developing, accomplished, exemplary; and attempted, limited, acceptable, proficient, excellent.
- Clearly define criteria for acceptable performance for each area emphasized in the rubric. Acceptable performance indicates a demonstrated level of competency commensurate with a passing decision for a given dimension of students' knowledge, skill, and competency. Its descriptor – in level terms – may be something like pass, acceptable, meets expectations, etc. and is typically the second-highest level listed on the rubric. In short, all individuals charged with assessing the dissertation need to have a clear and consistent understanding of what a passing level of performance 'looks like'. Thus, this performance needs to be clearly operationalized.
- Delineate all other levels of performance for each area, backfilling what lower and higher levels of performance (e.g., does not meet expectations, exceeds expectations) 'look like' in accord with performance that is commensurate with a passing decision.
- Distribute the draft rubric for feedback to all faculty or program personnel likely to use the rubric. Gather basic information about whether the items make sense, whether there is clear delineation of (and differentiation among) levels of performance for each rubric item, whether key areas or dimensions are missing from the rubric, and grammatical or clarity-type feedback.
- Test or pilot the rubric with prior dissertations that have been defended. Data based on early drafts (i.e., pilots) of the rubric should not be used in consequential fashion; in other words, passing determinations should not be made based on these rubric scores. More broadly, there should be a clear distinction between the use of this dissertation assessment rubric for program assessment purposes and information used to determine passing performance for students. In short, using dissertation rubrics for the purposes of program assessment serves a different purpose than using dissertation rubrics for the purposes of score student work (and making consequential decisions based on those rubrics).

- After development and refinement of the dissertation rubric is completed, the rubric should be consistently completed by all committee members and program faculty contributing to the program and the assessment of the dissertation work (e.g., core and affiliate faculty, so-called outside committee members, etc.).

As a rubric becomes established and used, data based on it can be regularly collected, summarized, and disaggregated to support overall program assessment as well as assessment by cohort, specialization, or some other factor of interest. Benchmarks or cut-points for performance for the purposes of program assessment are usually based on composite scores that represent passing or acceptable performance. For example, given a 10 item rubric based on 3 levels of performance (1-does not meet expectations, 2-meets expectations, 3-exceeds expectations), one defensible criterion for performance would be a composite (i.e., sum) score of 20, reflecting a score of "meets expectations" – on the whole – for the rubric items. Another approach would be to stipulate an overall composite score (e.g.. 20) with a second criterion that no rating below a certain level (e.g., 1-does not meet expectations) be obtained on any given rubric item. Programs are encouraged to develop their own local performance criteria for the purposes of guiding their assessment efforts and interpretation, but the criteria selected must be supported and justified.

Rubrics, such as a dissertation assessment rubric, are able to be easily administered and completed using survey software such as Qualtrics. The use of such software also alleviates resources (e.g., time) that would need to be spent entering and coding assessment data, as data based on the rubric can be exported to a common file format (e.g., csv, xlsx) using software such as Qualtrics. Programs are also encouraged to use a common account (e.g., a common, consistent Qualtrics account associated with an individual overseeing program assessment) for the purposes of implementing these assessment rubrics. This will allow all assessment data to be downloaded in a common spreadsheet or other form for later recoding and analysis.

Implementation of Program Surveying and Related Indirect Assessments

In addition to direct assessments of student learning at major program milestones, indirect measures are an important and emphasized element of graduate program assessment at WVU. Indirect assessments can take many, related forms. One common approach to indirect assessment is based on program surveying. At a minimum, student exit surveys and related data gathering approaches (e.g., exit interviews) are useful methods for understanding students' perceptions about and satisfaction with a graduate program. Approaches to implementing program surveying can range from being based on simple, one-time student exit surveys to being based on a connected, sequenced set of surveys – implemented to both students and employers – that gather a range of information about students' experiences with and successes based on the program. One such extended approach will be highlighted by example here in the context of program surveying of a professionally-oriented master's program.

The following example is based on a structure in which students in a master's program complete entry, exit, and follow-up surveys to gauge students' perceptions of the program, the perceived impact of the program on students' skills and competencies, and the role of the program in shaping students' career-related success. It also highlights an example use of an employer survey to complement these student-alumni data. For the sake of example, consider a professionally-oriented master's program that is designed to be completed in two academic years, is grounded in applied (i.e., application-level) program outcomes, and includes a practical project as a culminating learning experience. An example program outcome for such a program might be as follows: "Apply appropriate program evaluation tools to conduct formative and summative evaluations of existing educational programs." Based on this structure, the following procedures might be implemented:

- At program entry, students are surveyed to understand their motivations for pursuing the program, their reasons for attending WVU, other programs and universities they may have considered for their graduate education, and their professional goals
- At program exit, completers are surveyed to understand their professional goals (and any changes in their professional goals based on the entry survey), their satisfaction with specific dimensions of the program (e.g., coursework, faculty mentoring, career opportunities, applied projects and experiences), their degree of preparation aligned with the program outcomes (e.g., "Please rate how prepared you are to… Apply appropriate program evaluation tools to conduct formative and summative evaluations of existing educational programs"), their feedback regarding program strengths, limitations, and needs, and their plans for employment or any information based on obtained employment
- At follow-up (e.g., 1-3 years after graduation), reassessment of completers' satisfaction with the program, reassessment of their degree of preparation aligned with program outcomes, their perceptions about the quality of the program, current employment and career outcomes, and any professional achievements or accomplishments attained
- At follow-up (e.g., 1-3 years after graduation), employers are assessed to understand their perceptions of the quality and preparation of employed completers (e.g., e.g., "Please rate how prepared our program graduate was to… Apply appropriate program evaluation tools to conduct formative and summative evaluations of existing educational programs") as well as their perceptions regarding program strengths, limitations, and needs

A structure such as this allows program faculty to examine trends in students' beliefs, perceptions, and satisfaction over time and in a way that is directly aligned with program outcomes. It also collects complementary and contextual information from employers. Collectively, these surveys provide triangulated measures of program quality and impact. When paired with additional indirect assessments, including graduation/completion rates, informal summaries of student accomplishments, and

other indicators of program success, these indirect measures provide a powerful description of and context to the overall quality of the program – as well as additional datapoints supporting program needs and continuous improvement efforts.

Effective assessment plans blend and balance direct and indirect sources of evidence to capture usable information across the implementation of the program. There are a number of ways to structure an assessment plan to provide meaningful evidence of student learning and program impact while also being manageable in scope. Program faculty are encouraged to reach out to Robynn Shannon or Jake Follmer for support in identifying, selecting, developing, or evaluating meaningful measures and for assistance with aligning measures to a graduate assessment plan.

- **Expectations for use:** Expected
- **Key contacts:** Robynn Shannon, Director of Curriculum Development; Jake Follmer, Assistant Professor of Educational Psychology
- **Associated resources:** Exit (Senior), Alumni, Internship, and Employer Surveys and Rubrics section of: WVU Assessment Resources and Examples; Example rubric ratings and basic descriptors; Example thesis and dissertation rubrics
- **Suggested timing for review and revision:** Yearly (for current, yearly assessment cycles); Once every five years (aligned with program review, for long-term assessment cycles)

2e. Assessment Component: Assessment Cycles, Timelines, and Procedures

The larger work of program assessment is summarized in an assessment cycle. An assessment cycle charts the major assessment processes guiding evaluation of a program and consists of two major stages[6] (see also Appendix A). In the first stage, a yearly assessment cycle is developed. These current – or year-by-year – assessment cycles summarize:

- specific program learning outcomes that are being assessed
- specific measures being implemented to provide information about those program outcomes
- the point (i.e., timing) and place (e.g., pre-program, course-based, program milestone, post-program) of the measure(s) being implemented
- key program personnel responsible for implementing, tracking, and compiling information on the measure(s)
    - e.g., instructor(s) of a mapped course, department chairperson/director, program coordinator
- when, where, and how assessment results will be analyzed, shared, and discussed among program personnel

In the second stage, a long-term or programmatic assessment cycle is developed. It overviews the assessment of program learning outcomes and, in particular, when and how those outcomes are to be assessed across the timespan leading up to program review. The long-term assessment cycle typically aligns with the timeframe of program review. For example, a long-term assessment cycle for a graduate program may be developed to cover the five-year timeframe to and through the next BOG program review. Exceptions to this may apply to new programs (in such instances, programs complete their first BOG review after three years) or to programs that seek and maintain accreditation with an accrediting or organizing body (in such instances, cycles are aligned with guidelines provided by the accreditor).

Approaches to charting assessment cycles vary. One approach, designed to depict assessment information for each measure assessing program outcome(s), is listed in the following example (2e.1):

Program learning outcome assessed:	Conduct and interpret statistical analyses
Place of Implementation (e.g., program course, milestone, opportunity):	Program course(s)
Position/person(s) responsible:	Course instructor(s)

[6] Note that some guides and books will sometimes describe these as separate assessment cycles, but the intent is largely to connect and sequence assessment processes across the implementation of a program.

Measure (description; direct/indirect):	Case study analyses (direct)
Analysis and results summary:	[see attached summary for analysis and action recommendations]

Another approach to organizing tasks and information related to a single assessment cycle, which aggregates all assessment information and procedures for each program outcome, is shown in the following table (2e.2):

Student Learning Data				
Program Learning Outcome:	Measure Name(s): Type(s): Data Collected:	Procedures: Program Place: Program Timing:	Person(s) Responsible:	Summary and Sharing of Results: When: Where: How:
[…]	[…]	[…]	[…]	[…]
Program Impact and Outcome Data				
Program Learning Outcome:	Measure Name(s): Type(s): Data Collected:	Procedures: Program Place: Program Timing:	Person(s) Responsible:	Summary and Sharing of Results: When: Where: How:
[…]	[…]	[…]	[…]	[…]

Overall, the broader purpose of an assessment cycle is to provide a clear summary of and structure for the procedures and timeframes for collecting, analyzing, and reviewing program assessment data. It also allows for a description of the ways in which the program, its curriculum and components, or the assessment plan itself has been revised since the previous program review and assessment cycle (if applicable). In this way, an assessment cycle and the work that contributes to it help program personnel to plan, assess, analyze, and act in order to continually improve their graduate program.

These examples are not exhaustive of the possible ways in which you might present assessment cycles and related information about your program. The following guidelines are intended to help you develop an assessment cycle that provides holistic and actionable information about your program and how to improve it:

- strive for balance in assessing program outcomes:
    - do not assess all program outcomes each academic year
    - try to support meaningful and deep assessment of fewer outcomes rather than broad assessment of all program outcomes
- describe measures to be used clearly and concisely and in lay terms
    - for example:
        - is the measure direct or indirect?
        - what type(s) of data does the measure provide?
        - what criteria, if any, will be applied to the assessment data?
        - was the measure established or developed for the purposes of program assessment?
        - what evidence supports the use of the measure?
            - e.g., validity and reliability evidences, evidence that the measure yields trustworthy information
            - e.g., evidence that the measure and its use result support conclusions that are unbiased
        - how will data based on the measure be analyzed?
            - i.e., what types and methods of analysis will be implemented?
- it's best to develop, revise, and update program assessment cycles – both yearly and long-term – in combination with a review of the program's curriculum map
    - assessment cycles – like curriculum maps – should be reviewed annually, ideally by all individuals contributing to the program
    - reviewing both at the same time helps identify gaps in assessment coverage, alignment, and procedures as well as specific points along the program where assessment may be needed to meaningfully address the program outcomes

❖ **Expectations for use:** Expected
❖ **Key contacts:** Robynn Shannon, Director of Curriculum Development; Jake Follmer, Assistant Professor of Educational Psychology
❖ **Associated resources:** Assessment Plans and Reports section of: WVU Assessment Resources and Examples
❖ **Suggested timing for review and revision:** Yearly (for current, yearly assessment cycles); Once every five years (aligned with program review, for long-term assessment cycles)

Section 3. Using Assessment to Inform Program Improvement: Developing an Action Plan

An action plan describes the review and use of program assessment data. It details how the major results of program assessment will be leveraged to make a program better. In general terms, an action plan describes what the program has done in terms of assessment, what it learned, and what it will do as a result (see WVU Assessment Report Template for Academic Programs; Slimak & Shannon). More formally, an action plan describes the programmatic actions to be taken to address key strengths, weaknesses, opportunities, and threats indicated by the assessment data that have been analyzed (see Appendix A).

Assessment action plans will look different depending on the nature, structure, and scope of the graduate program as well as the improvements that are identified in prior assessment cycles. Generally, an assessment action plan reflects a combination of 1) a narrative summary describing: each assessment cycle, major results stemming from analyses conducted, evidence of review and incorporation of assessment findings, and actions already taken to revise or improve a program based on those results and 2) a table or chart delineating: plans and next steps for program assessment. This latter component often consists of several core elements:

- Identification and brief summary of the specific learning outcome(s) assessed
- Specific action steps to be taken 1) as a result of review of major program assessment findings and 2) that will allow for attainment of the goal or outcome
- A review of budgetary and fiscal considerations
    - E.g., Does implementation of an action step require the allocation of financial and related resources?
- Estimated start and completion dates for the specific action steps developed
- Identification of key personnel responsible for monitoring the progress of the action step(s)
- Comments and reflections on the action step, larger considerations, anticipated challenges, and other factors affecting the ability of program personnel to meet the action step (and broader outcome)

An example template for structuring the development of an action plan is (3.1):

Date of meeting to discuss major assessment results:
Meeting participants (in attendance):
Overall reflections on assessment results:

Learning outcome assessed	Summary of results and conclusions drawn	Programmatic implication(s) of assessment results
Review of and response to prior feedback (e.g., from the Associate Dean, peer reviewer(s), assessment director/coordinator):		

#	Action step and anticipated outcome(s):	Associated materials (e.g., measure, revised assessment plan, recruitment document)	Assigned responsibility:	Budget and resources required:	Start date:	End date:	Comments:

The success of an action plan depends on the degree to which assessment processes and results are shared and discussed with all key program personnel. The development of an action plan should therefore be a shared activity with opportunity for input solicited

from all individuals contributing to the program. In short, major summaries of assessment results and programmatic conclusions developed based on those results should be discussed with program faculty and specific steps (i.e., actions) to be taken based on those results should be co-developed. Use of a template such as the one included in Example 3.1 is likely to 1) help structure the development of an action plan that is grounded in major assessment findings and 2) make easier the writing of the action plan narrative that summarizes what's been done, what's been learned, and what specific steps are to be taken to improve.

Often, assessment results are reviewed and action plans are developed during faculty meetings dedicated to program assessment and review. This structure affords opportunity to discuss specific features and findings of the assessment plan and to openly discuss action steps to be taken. Questions and considerations to guide discussion of assessment results and the development of an action plan include:[7]

- Curriculum-related questions:
    - Are changes to the curriculum suggested by the assessment findings?
        - Is there a need for:
            - revision to course sequencing?
            - revision to a specific course/course components?
            - addition of specific course(s) or course components to augment students' skills/knowledge/competencies?
            - removal/trimming of extraneous courses to 1) streamline and strengthen curricular offerings or 2) make the program more accessible and affordable?
        - Should program and/or course learning outcomes be revised?
        - Are program and course outcomes clearly delineated to students and stakeholders, and are the linkages between course-level and broader program outcomes apparent?
        - Is there consistency in quality and rigor across course offerings and other learning experiences?
        - Should changes in course modality be considered?
        - *Note*. Curricular changes such as those listed above may require submission of a curriculum proposal for program change.
- Resource-related questions:
    - Is (re)allocation of resources suggested by the assessment findings?
        - Is there a need for:
            - additional or targeted expertise?

[7] These questions are adapted from the WVU Assessment Report Template Guidelines for Academic Programs, written by Robynn Shannon and Lou Slimak. These questions are by no means intended to be exhaustive of the discussion points to be considered.

                - reassignment of faculty or effort?
                - specific training/professional development for faculty and staff?
                - reconsideration of class size and classroom/lab/research space?
- Academic process questions:
    - Based on the assessment findings reviewed, is there a need for:
        - revision to admission criteria and processes?
        - revision to advising and mentoring practices?
- Assessment-related questions:
    - Based on the assessment findings reviewed, is there a need for:
        - the use of additional or alternative direct measures of student learning?
        - the use of additional or alternative indirect measures of student learning and program impact?
        - revision to data collection processes and procedures?
            - E.g., when and how data are collected to streamline and simplify program assessment practices
        - additional data to more fully evaluate specific learning outcomes?
    - Given the current assessment plan:
        - are all program learning outcomes addressed and able to be evaluated?
        - do program personnel have a sense of ‘what works’ and what needs improved in the program?
        - do program personnel understand the impact of their program?
        - do program personnel understand students’ and completers’ perceptions of the program (e.g., its strengths, weaknesses, areas of success, and needs for improvement)?
- Broader programmatic questions:
    - What has the program done well? What successes have been realized?
    - What challenges has the program experienced?
    - What factors – internal and external – impact the effectiveness of the program?

Consistent with the need to openly review and discuss assessment findings contributing to the development of the action plan, the action plan itself – once drafted – should be openly shared in an effort to solicit feedback and suggestions for revisions to the plan. A ‘final’ version of the action plan – as well as any positive results stemming from the assessment work completed – should be shared broadly with stakeholders and individuals likely to be interested in the results (e.g., prospective students).

The process of developing, revising, and finalizing an action plan also provides an ideal opportunity to consider and address broader program review processes. The goal of assessment and the work that goes into an action plan is program improvement – a cross-cutting focus that is founded in program review.

In particular, the review and discussion of program assessment results and the action plan that is based on them position faculty to examine and critically reflect on:

- trends in student enrollment, persistence, and completion
    - over time and, in particular, since the last program review (if applicable)
- the success of existing recruitment efforts, and changes and improvements that may be suggested to address needs related to:
    - the quantity and quality of program applications received
    - the strength of students enrolled in the program
    - the success of students in meeting program outcomes and milestones
- current and key strengths, weakness, opportunities, and threats that bear on and impact the success of the program
    - e.g., via SWOT analysis conducted as the action plan is being reviewed and revised
- the overall viability of the program

Consideration of these program review processes is likely to further inform the development of specific action steps that support continuous program improvement.

Section 4. Appendices and Resources

Appendix A. Assessment Glossary

The following glossary provides descriptions of relevant assessment terminology. This glossary was produced by members of the University Assessment Council (UAC) and was drafted to facilitate understanding of assessment practices and processes at WVU.

- **Accountability**
  In program review, the use of results of assessment and data on program activity, viability, and adequacy for program continuance / discontinuance; the public reporting of student, program, or institutional data to justify decisions or policies; using results to determining funding.
- **Action Plan**
  A formal explanation of the administrative, curricular, functional, operational, instructional, or pedagogical actions being taken to address strengths, weaknesses, opportunities, and threats revealed by the assessment data gathered, either that year or longitudinally.
- **Actionable Results**
  Results from assessment and/or other related data streams that converge in a meaningful way that leads to a clear, appropriate, feasible and manageable response.
- **Analytic Scoring**
  Evaluating student work across multiple dimensions (temporal, task based) of performance rather than from an overall impression (holistic scoring). In analytic scoring, individual scores for each dimension are scored and reported.
- **Assessment Cycle**
  A two-part description of the process of assessment. First, a yearly process of assessment at a particular level (degree, program, university) with a calendar of assigned dates for completion, review, and other task performance. It typically includes the following stages: Planning: where reviews and revisions of the assessment plan, curriculum, and other academic functions are performed in light of previous assessment data; Assessment: collection of data that is evidence of student performance in relation to goals such as student learning outcomes; Analysis: where evidence is analyzed, disseminated, discussed among the faculty and other key stakeholders, and the assessment report is generated. Action: often called ‘closing the loop,’ results of the assessment report are disseminated, particularly focusing on the resulting action plans as well as the implementation of those same plans. Second, a long-term planning cycle that shows how a particular level (degree, program, university) seeks to accomplish the assessment of all its designated units and their outcomes.

- **Assessment Plan**
  A primarily static document that defines a program's Mission with respect to assessment, its program learning goals, its program learning outcomes, a curriculum map that identifies when formative and summative assessments take place, and the measures used and identification of when students are introduced, practicing, and achieving the learning outcomes. It includes descriptions of the assessment cycle and can also include an explanation of the process of data collection, archival, and analysis.
- **Assessment Report**
  A dynamic yearly document that records faculty discussion of assessment results, delineates what the resulting action plans are (if any), and provides supporting data as attachments or appendices.
- **Assurance of Learning**
  An outcomes-based approach to assessment that is driven by accrediting standards of the AACSB of accountability and continuous improvement. Primarily supported by direct assessment, programs and colleges are expected to use assessment to improve curricula when deficiencies or opportunities for improvement are found.
- **Authentic Assessment/Embedded Assessment**
  An assessment that measures a student's performance on tasks and situations that occur in real life. This type of assessment is closely aligned with, and models, what students do in the classroom.
- **Benchmark**
  A detailed description of a specific level of student performance expected of students at particular stages. Benchmarks are often represented by samples of student work. A set of benchmarks can be used as "checkpoints" to monitor progress toward meeting performance goals within and across student levels.
- **Capstone Course**
  A summative course, project, or experience that provides an opportunity for the demonstration of mastery of the learning outcomes of an entire sequence of study in a given program.
- **Closing the Loop**
  Assessment terminology for communicating the results of outcomes assessment, assessment analysis, and resulting actions back to the key stakeholders in the assessment process, typically the faculty who performed the assessment; also a stand-in for the process of generating and carrying out assessment related action plans.

- **Community-based Assessment**
  Assessment of vocational skills carried out within job placements and by practicing professionals directly relevant to the student's program. Assessment typically focuses on evaluating the students professionalism, work habits, skills/competencies, and aptitudes.
- **Competency**
  The range of possible, specific skills and behaviors that a student must be able to perform or demonstrate mastery of to satisfy a particular learning outcome or to graduate from a particular program. For any particular learning outcome, there may be a number of demonstrable competencies that are associated with it.
- **Criterion-referenced Assessment**
  An assessment where an individual's performance is compared to a specific learning objective or performance standard and not to the performance of other students. Criterion-referenced assessment tells us how well students are performing on specific goals or standards rather than just telling how their performance compares to a norm group of students nationally or locally. In criterion-referenced assessments, it is possible that none, or all, of the examinees will reach a particular goal or performance standard.
- **Curriculum Mapping**

  The process of evaluating and graphically representing curriculum and program learning outcomes to ensure that students are receiving appropriate learning opportunities to be introduced, practice, and demonstrate mastery of the learning outcomes. Also allows programs to identify what assessments are taking place and in which courses. Curriculum maps identify the connections between course, learning level, assessment level (formative or summative), and assessment measure and can be used alongside assessment cycles to determine the frequency and location of assessment.
- **Direct Measurement**
  Measures that require the student to demonstrate his/her knowledge and skills in response to the instrument. Examples of direct measurement include 1) achievement tests such as objective tests; 2) student academic work such as essays, presentations, portfolios, and course assignments; 3) observations or case studies.
- **Evaluation**
  When used for most educational settings, evaluation means to measure, compare, and judge the quality of student work, schools, or a specific educational program; assessment is one form of evaluation.

- **Experiential Learning**
  An approach to education that emphasizes learning via experience (learning by doing) coupled with timely reflection on the process and the results of that experience. Experiential learning is a cyclical process where the experience leads to reflection which leads to alteration or improvement to the process which governs the experience itself, stressing the continuous improvement and lifelong learning of the student.
- **Formative Assessment**
  The gathering of information about student learning during the early progression of a course or program to improve the learning of those students. Formative assessments are also used to determine the amount of change (the delta) in learning that has occurred during a course or program. Example: reading the first lab reports of a class to assess whether some or all students in the group need a lesson on how to make them succinct and informative.
- **Indirect Measurement**
  Measures that ask students, past or present, faculty, employers, or others stakeholders to reflect on student learning rather than actively demonstrating it. Examples of indirect measurement include self- report methods such as surveys, interviews, and focus groups.
- **Inter-professional Education**
  An approach to education in which students from two or more professions learn about, from, and with one another to promote team building, communication, and collaboration as well as improve health outcomes (both for the students in terms of learning and, ultimately, the communities they will serve). Particularly focused on improving the student's ability to function as an effective practitioner and member of a professionally diverse team.
- **Learning Goals**
  Broad, general program and institutional level statements that inform students about the academic purpose or mission of a program or institution as well as the expectations of its faculty.
- **Learning Objectives**
  Sometimes used interchangeably with outcomes. Like outcomes, objectives are measurable, quantifiable operational statements that describe specific student behaviors which are evidence of the acquisition of knowledge, skills, abilities, capacities, attitudes or dispositions. Objectives typically are acquired in shorter temporal span than outcomes and are thus used most often to describe learning occurring at a course level whereas outcomes describe learning that occurs at a program level.

- **Learning Outcomes**
  Statements describing specific student behaviors that evidence the acquisition of desired knowledge, skills, abilities, capacities, attitudes or dispositions; learning outcomes are measurable and quantifiable. Learning outcomes can be usefully thought of as behavioral criteria for determining whether students are achieving the educational objectives of a degree, and, ultimately, whether overall program goals are being successfully met.
- **Level of Learning**
  The ability to distinguish between tasks and expectations of learning that require different levels of cognitive complexity and to match assessment measures to those levels of learning. This is a relevant practice for individual faculty in course design as well as for programs in determining their assessment plans and curriculum maps. Bloom’s Taxonomy has been adopted by West Virginia University as its model for determining cognitive complexity and for use in crafting learning outcomes.
- **Measure**
  Any particular task occurring within the context of a course or program or in standardized settings that allows for the quantifiable measurement of student performance towards a learning outcome. Common measures include tests, essays, projects, portfolios, etc.
- **Measurement**
  The process of quantifying any human attribute pertinent to education without necessarily making judgments or interpretations.
- **Metacognition**
  An individual's ability to think about his/her own thinking and to monitor his/her own learning. Metacognition is integral to a learner's ability to actively partner in his or her own learning and facilitates transfer of learning to other contexts.
- **Metric**
  A scoring mechanism (like a rubric or Likert scale) that applies a quantitative scale to student performance towards a particular learning outcomes.
- **Norm-referenced Assessment/Standardized Assessment**
  An assessment where student performance or performances are compared to a larger group. Usually the larger group or "norm group" is an institutional, regional, peer, or national sample representing a wide and diverse cross-section of students. The purpose of a norm-referenced assessment is usually to sort students and not to measure achievement towards some criterion of performance.

- **Operational Goals and Outcomes**
  In contrast to learning outcomes and goals which are solely centered on measurable, demonstrable student learning, operational outcomes are internal measures of a department's, program's, or unit's operational success and viability; these are entirely separate from the development and assessment of learning outcomes. Operational outcomes are often traditional student achievement measures like retention, persistence, and completion, include enrollment, transfer (in and out), grade performance, job placement, benchmarking, resource evaluation, budget performance, etc.
- **Peer-assessment**
  Evaluation of learning by one's peers.
- **Performance-based Assessment**
  An assessment technique involving the gathering of data though systematic observation of a student behavior or process and evaluating that data based on a clearly articulated set of criteria (rubric) to serve as the basis for evaluative judgments.
- **Portfolio Assessment**
  A portfolio is collection of work, usually drawn from students' classroom work. A portfolio becomes a portfolio assessment when (1) the assessment purpose is defined; (2) criteria are made clear for determining what is contained in the portfolio, by whom, and when; and (3) criteria for assessing either the collection or individual pieces of work are identified and used to make judgments about learning. Portfolios can be designed to assess student progress, effort, and/or achievement, and encourage students to reflect on their learning.
- **Program Goals**
  A term that has been discontinued for use at WVU because of its ambiguity. It has been replaced by "Learning Goals" which represent broad program-level learning-centered goals and "Operational Goals and Outcomes" which are those program-level measures of viability and operational success that are otherwise unrelated to student learning.
- **Reliability**
  The degree to which the results of an assessment are dependable and consistently measure particular student knowledge and/or skills. Reliability is an indication of the consistency of scores across raters, over time, or across different tasks or items that measure the same thing. Thus, reliability may be expressed as (a) the relationship between test items intended to measure the same skill or knowledge (item reliability), (b) the relationship between two administrations of the same test to the same student or students (test/retest reliability), or (c) the degree of agreement

between two or more raters (rater reliability). An unreliable assessment cannot be valid.

- **Rubric**
  Specific sets of criteria that clearly define for both student and teacher what a range of acceptable and unacceptable performance looks like. Criteria define descriptors of ability at each level of performance and assign values to each level. Levels referred to are proficiency levels which describe a continuum from excellent to unacceptable product.

- **Self-assessment**
  The process of evaluating one's own learning. The process often includes the ability to judge one's own achievements and performances, understanding how the product or performance was achieved, understanding why one followed the process he or she did, and understanding what might be done to improve the process, product or performance.

- **Standards**
  The level of accomplishment all students are expected to meet or exceed. Standards do not necessarily imply high quality learning; sometimes the level is a lowest common denominator. Nor do they imply complete standardization in a program; a common minimum level could be achieved by multiple pathways and demonstrated in various ways.

- **Summative Assessment**
  The gathering of information at the conclusion of a course or program to improve learning or to meet accountability demands. When used for improvement, impacts the next cohort of students taking the course or program. Examples: examining student final exams in a course to see if certain specific areas of the curriculum were understood less well than others; analyzing senior projects for the ability to integrate across disciplines.

- **Triangulation**
  Using a combination of assessment measures, from authentic measures that are formative to summative, direct to indirect, and qualitative or quantitative, to external measures, standardized measures, or other surveys, to best measure an outcome.

- **Validity**
  The extent to which an assessment measures what it is supposed to measure and the extent to which inferences and actions made on the basis of test scores are appropriate and accurate. For example, if a student performs well on a reading test, how confident are we that that student is a good reader? A valid standards-based assessment is aligned with the standards intended to be measured, provides an

accurate and reliable estimate of students' performance relative to the standard, and is without easily identifiable or correctable bias. An assessment cannot be valid if it is not reliable.

- **Value Added**
  The net effect in learning and performance ability that a course or program has on individual students or cohorts of students; the delta as reflected in data from formative to summative assessments.

Appendix B. Templates for Thesis/Dissertation Rubric

WVU Template and Guidelines for Graduate Thesis/Dissertation Assessment Rubric[8]

Student Name and ID Number:

Degree Level (Master's, Ph.D./Doctoral, Professional):

Reviewer's Name:

Date of Review:

Program-level learning outcomes related to theses/dissertations:

Student learning outcomes (if any) specific to this thesis/dissertation:

Evaluation of the thesis/dissertation: Identify up to five areas in which each thesis/dissertation at a particular degree level will be evaluated. All theses/dissertations in the same program area and at the same degree level should be scored using the same rubric. For each area of evaluation, indicate whether the thesis/dissertation "meets expectations," "does not meet expectations," or "exceeds expectations." For each area of evaluation, articulate **clear and specific criteria** on which a rating of "meets" is based.

Some areas of evaluation to consider:

- Meeting program-level learning outcomes.
- Meeting student learning outcomes specific to this thesis/dissertation.
- Applying theories and concepts of the discipline.
- Situating the research in the broader context of the discipline.
- Synthesizing the research findings, especially as they relate to previous scholarship of the discipline.
- Demonstrating mastery of methods of inquiry.
- Demonstrating scholarly writing in the rhetoric of the discipline.
- Successfully communicating the research findings, significance, and implications.
- Embodying "a definite contribution to knowledge" (from the graduate catalog).

[8] To be used for program-level assessment, rather than to "grade" theses/dissertations. Only the thesis/dissertation itself is to be evaluated with this rubric, not work leading up to that final product (such as the proposal or the research design).

Appendix C. Generic Thesis/Dissertation Rubric

Graduate Thesis/Dissertation Assessment Rubric

Q1
Student Name (First and Last)

_____

Q2
Student ID Number

_____

Q3
Degree Level

- ○ Master's
- ○ PhD/Doctoral
- ○ Professional

Q4 Committee Member Name

_____

Q5 Date of Review

_____

Q6
The thesis/dissertation applies theories and concepts in the field of study.

To meet expectations:

Objectives/hypotheses should be clear.
Arguments should be coherent and reasonably clear.
Critical thinking skills should be applied consistently throughout.
Comprehension of a range of relevant subject matter and literature should be evident.
Comprehension of a range of theoretical concepts should be evident.
There is an appropriate amount of synthesis between topics and theoretical concepts.
Conclusions are clear, reasonable and connected to the evidence presented.

- ○ Does Not Meet Expectations
- ○ Meets Expectations
- ○ Exceeds Expectations

Q7
The thesis/dissertation models mastery of methods of inquiry.

To meet expectations:
The analysis conducted is thorough, coherent, and fully developed.
The study acknowledges limitations or necessary follow up.
The study considers any relevant regulatory compliance.

- ○ Does Not Meet Expectations
- ○ Meets Expectations
- ○ Exceeds Expectations

Q8
The thesis/dissertation is professional in the quality of the writing.

To meet expectations:
There should be relatively minimal grammatical and spelling errors.
The organization of the work should be logical.
The style and tone should be appropriate to the discipline.
Documentation of sources and research is complete and appropriate to the discipline.

- ○ Does Not Meet Expectations
- ○ Meets Expectations
- ○ Exceeds Expectations

Q9
The thesis/dissertation is successful in its communicative goals.

To meet expectations:
The thesis/dissertation clearly communicates the significance of its results in the context of the stated research objective.
The answers to research questions are uniformly appropriate in both substance and clarity.
The quality of graphs, illustrations, sound, visual files, etc., meets disciplinary standards.
The types of graphs, illustrations, sound, visual files, etc., assist and support the analysis.
Graphs, illustrations, sound, visual files, etc., are presented with appropriate context and analysis.
Appropriate font and text sizes are used.

- ○ Does Not Meet Expectations
- ○ Meets Expectations
- ○ Exceeds Expectations

Q10
The thesis/dissertation is original and will contribute to the discipline.

To meet expectations:
There is some potential for discovery/contribution.
It successfully builds upon previous work.
There is reasonable theoretical or applied significance.
There is reasonable potential for publication.

- ○ Does Not Meet Expectations
- ○ Meets Expectations
- ○ Exceeds Expectations

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