Graduate Professional Development: Towards a National Strategy

Phase 2

Prepared for the Canadian Association for Graduate Studies in conjunction with the Consortium of Canadian Graduate Student Professional Development Administrators

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Executive Summary

This project explores current university practices in Canada and elsewhere to assess the reach, value, and impact of graduate student Professional Development Programs (PDPs) in order to lay the groundwork to expand professional development opportunities for all graduate students.

The goals of the Graduate Professional Development - Towards a National Strategy project are:
1) To document the current climate of graduate student PDPs in Canadian universities.
2) To provide guidance on best practices so universities can create and/or improve activities related to professional development for graduate students.

Phase 1 gathered information about the scope and delivery of PDPs. This information has been used to create a national inventory as a resource for professional development administrators, which is available on line at http://profdevprof.cags.ca. Phase 1 identified four different levels of PDP activity and created a rubric to categorize surveyed Canadian University PDPs, ranging from no to little coordinated activity (category 4) to a high level of activity that is geared specifically to graduate students at entry and expert level (category 1). As observed in the Phase 1 report, not all Canadian universities have graduate student PDPs, and some of them are presently creating or expanding offerings in their programs. Most universities surveyed were in categories 3 and 4.

The original goal of Phase 2 was to integrate good practices concerning assessment methods used in graduate student PDPs in Canadian universities as part of the catalogue. However, data from Phase 1 revealed a lack of specific assessment methods being used and found that most universities that assess their PD programming rely only on feedback questionnaires. This made the original deliverables of Phase 2 unattainable.

The Canadian Association for Graduate Studies (CAGS) and the Consortium of Canadian Graduate Student Professional Development Administrators (CCGSPDA), nonetheless, consider assessment to be of extreme relevance for the improvement of professional development. In conjunction with Mariana Mota – Phase 2 contractor – we thus consulted widely among program delivery experts and experts in program assessment. This confirmed the interest in identifying assessment tools that can be used for professional development programs.

It has been determined that the main goal of Phase 2 should readapt, thus the scope of the project was expanded to include a literature review of assessment in related fields. This review found a lack of specific assessment of PD programming is not specific to Canada, also being the case in the United States. The new objective of this report is thus to identify concepts, best practices, and challenges in assessment. This information will be used to determine the best course of action for the creation of a pilot assessment model that can be targeted towards graduate student PDPs.
Throughout this report, assessment will be considered a key concept that should be incorporated into graduate student PDPs of all categories. Based on the literature on learning assessment, program assessment, and on Canadian universities’ best practices, this report outlines a conceptual framework to help universities start the dialogue on assessment. The framework outlined can help administrators evaluate the alignment of objectives, outcomes, and practices of their PDPs.

In addition, this report provides two assessment tools—based on the data gathered for Report 1—as suggestions. The first tool focuses on foundational elements necessary to a quality PDP. Its purpose is to make universities better-informed about foundational best practices across Canada and next potential steps. The second tool, in turn, is a detailed assessment matrix based on Canadian universities’ core competencies in PDPs as identified in the Report 1. CAGS and the CCGSPDA expect universities to implement this second tool as an initial step towards the creation of a general assessment method.

The main purpose of the tools suggested in this report is to help universities PDPs with a starting point to discuss assessment. CAGS and the CCGSPDA believe this report will provide a solid basis for disseminating a culture of PDP assessment and collective improvement. This report thus aims to provide useful recommendations to all PDP categories of universities across Canada.

**How can Canadian PDPs benefit from program assessment?**

CAGS and the CCGSPDA expect the assessment tools suggested in this report can serve as a reference in planning the structure and content of PDPs and believe that all universities can benefit from the discussion of potential methods and what constitutes success in PDP. Rather than being about ranking, the purpose of PDP assessment is to facilitate constant improvement.

- **Better from the start:** Universities currently creating a PDP will have higher-quality and more effective offerings if assessment is integrated into the development of the program.
- **Improvement as a goal:** Universities that have a high level of PDP activity will be able to identify areas of success and areas to be improved through the use of assessment methods.
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1. Phase 1: A Recap

Phase 1 involved an analysis of the current climate of graduate student specific PDPs in Canadian universities through reviewing universities’ graduate studies websites, the CAGS 2012 report on professional development, and a qualitative analysis based on a survey administered to universities across Canada in Fall 2016. The questions of the survey in the Phase 1 report focused on the following indicators:

- Types of graduate student specific professional development/training
- Listing of core competencies and those which are most popular
- Office responsible for coordinating PDP
- Number of staff/types of roles associated with PDP
- Participation tracking and rates in PDP over the course of an academic year
- Method of promotion and registration for PDP
- Integration of PDPs into academic curriculum or formal recognition
- Incorporation of labour market information and outcomes into programming
- Strategies for developing positive relationships with employers

Among the twenty-nine universities that replied to the Phase 1 survey, only eight reported to evaluate their graduate PDPs’ success (Appendix D). The most common method used was feedback forms delivered at the end of offerings or at the end of the term. Feedback forms are easy to implement and provide a quick method of evaluating attendees’ perceptions, thus assigning a subjective value to the offering. This subjective value, in turn, is useful as it can positively affect the attendee’s interest in participating in future programming, as well as affecting other attendee’s views and willingness to participate if perceptions are shared.

Nevertheless, the drawback to feedback forms is the possibility of false-positive and false-negative implications. For example, attendees may enjoy a particular offering without having gained any skill development; they may also dislike an offering in which they learned important skills. In addition, feedback forms do not provide any direct correlation to career attainment. Conversely, some universities have made use of surveys to learn about the careers of their graduate alumni, though connections were not made to PDP training.

The University of Toronto was the only university to have reported an assessment method that aimed to correlate PDP training with career attainment. In 2016, information on 10,000 University of Toronto PhD students who graduated between 2000 and 2015 was collected to determine these students’ employment status and compare this with registration data from their graduate student PDPs offerings. It is not clear if the 10,000 PhD Program is a one-time project or an ongoing cyclical program. Regardless, this project provides an interesting method to assess the relationship between PDP offerings and their effect on graduate students’ career.
2. Phase 2: Methods and Approach

2.1 Analytical Literature Review and Secondary Sources

An analytical literature review was done with the expectation that identifying successful assessment practices in one area could inform the organization of a model specific to graduate student PDPs. Official reports and research studies were reviewed, but findings will be cited only in terms of how they can contribute to assessing graduate student PDPs. At times, that required some methods and concepts to be adapted.

Material was also sought from publically available sources on assessment of various student offerings in post-secondary institutions. A considerable portion of the material available is from U.S. institutions and organizations, particularly those that relate to community colleges and undergraduate institutions. Given the robustness and wide research on learning assessment, and the parallels one can draw to PDP assessment, this report heavily draws on good practices used to assess learning at the university level. Program assessment design in general, which is not as rich as the one on learning assessment, also provided insights.

2.2 Consultation with Experts and Primary Sources

An in-person consultation was held in Toronto on March 6, 2017 with experts in non-academic services to graduate students (participants are listed in Appendix A). Further consultations were held with additional professional development practitioners across Canada, which were either face-to-face or on the telephone (participants are listed in Appendix B). It is expected that the number of administrators engaged grows with the circulation of this report. Their contribution will be an essential step in making it reflect the everyday challenges these professionals face in planning PDP offerings as well as the ones they foresee in establishing assessment methods.

3. The Relevance of Assessing Graduate Student PDPs: Measuring Matters

The U.S. Council of Graduate Studies (2009) reports that students with a graduate degree are more valuable to the economy since they are “knowledge workers.” Yet, in spite of their extensive technical knowledge, the development of professional skills is imperative for these individuals to succeed once they graduate (Council of Graduate Studies, 2009). There are many PDPs in Canada that can help graduate students become better-equipped with professional skills necessary for the workplace. Nonetheless, the current lack of assessment tools means that there is no procedure to evaluate the effectiveness of these offerings in reaching their expected outcomes. In short, the lack of assessment leads to situations in which PDP objectives and strategies could be misaligned instead of reinforcing one another.
The variety of sources involved in making PDPs possible also means that they are accountable to a number of stakeholders. Hence, both accountability and transparency play a large role in why the discussion of implementation of assessment models needs to begin. In consultation with experts it was clear that these demands are being increasingly heard in Canada. A report published in 2014 by the Higher Education Quality Council of Ontario (HEQCO) also showed that there has been a growing desire for reliable data on students’ professional experiences. Overall, the benefits of assessing graduate student PDPs are numerous, as displayed in Figure 1.

Figure 1: Benefits of utilizing assessment methods in PDPs

4. Program Assessment: Definition and Purpose

The American Association of Higher Education (2001) reports assessment has become a term for a range of approaches. In educational research, there are different definitions: some authors consider it the systematic collection and use of information about a program (Palomba & Banta, 1999), others highlight the relevance of measuring such information (ex. Rosa, 2004). The Academic Program Improvement Report (2000) published in the United States, considers an evaluation process to be categorized as an assessment process when it is centered on three elements: to improve, to inform, and to prove. The third element highlights the relevance of evidence and that methods should be result-oriented; the other two elements suggest that results should be to improve the program being assessed as well as accountability.
When it comes to the accountability, Nunley, Bers & Manning (2012) state the challenge for learning assessment, which also applies to graduate student PDPs:

“As broad-based demands for accountability and transparency have raised expectations for learning outcomes assessment in the postsecondary system. These demands emanate from a variety of sources, including federal and state governments, accrediting organizations, students and parents.”

**As a process, assessment is thus about improvement and accountability.** Hence, limiting the concept of assessment to a one-time review can be misleading as it can be easily interpreted as an evaluation that aims to judge the level of improvement of a program (as if there could be a binary pass/fail rubric for programs) – this should not be the case given the ultimate goal of improvement. Assessment must be an ongoing process (Lindstrom, Taylor, Weleschuck, 2017).

Nevertheless, the subjective opinions/perspectives/feelings of what constitutes success should be discussed prior to creating an assessment process, but only so they can be transformed into objective expected outcomes which, in turn, can inform the development of an assessment process specific to that program (Figure 2). In other words, “what is the evaluation process trying to assess?” is the leading question that informs the choice of the method (“how do we assess that?”) to obtain the most useful results, which in turn should be used for accountability (“how do we disseminate findings?”) and for improvement (“what is possible to infer from findings in terms of the program’s strengths and weaknesses and how can we improve it?”).

**Figure 2 – The Five Steps of Program Assessment**

As part of the assessment process, the choice for assessment methods should be tailored to analyze how well a specific program is reaching its desired outcomes. Although a general model is not ideal, general questions leading learning assessment models have been identified:

- “What are we trying to do and why?
- How does my program contribute to student learning?
- How well are we doing?
- How do we know?
- How do we use the information to improve or celebrate successes?
- Do the improvements we make work”

(Outcomes Assessment in the Learning College. Frederick Community College in Maryland, 2003)

These questions were echoed during CAGS consultation with experts in Toronto on March 6, 2017. The professionals in attendance agreed that assessment should be led by these questions, and emphasized the need to understand “what is the goal of the assessment?” It was noticed that questions concerning “when” and “how” are inherently connected to the purpose of assessing, and are follow-up questions that can only be addressed once a goal has been defined.

In the case of graduate student PDPs, the subjective concept of success is related to strengthening students’ professional development and preparation for the workplace. As Rose (2012, p. 4) stated, “the goal of professional skills training is to ensure that – equipped with all that their graduate degrees have prepared them to do – graduate students will be well-prepared to move forward within the typically fast-paces, interconnected, multidisciplinary, multi-cultural, and team-based workplace environments that characterize today’s worlds of work.”

It can thus be inferred that PDPs should be guided by the following questions:

What career/academic outcomes would students obtain for PD—components and overall program—to be considered successful?

What skills should students have when they graduate or complete PD—components and overall program—to be considered successful?

The first question relates to PDPs’ efficiency, and the second question relates to its quality. There are no definitive answers to these questions, but, as already noted, when structuring a PDP it is essential to discuss evidence that can be considered indicators of improvement.
Success indicators/evidence in terms of efficiency may include, but are not limited to:

- Number of students employed in their field within 6 months or one year.
- Number of students employed within 6 months or one year in positions in which they use the skills/knowledge acquired during their time in a graduate program.
- Employers’ perception that students who attended PDPs have relevant professional skills.

Success indicators/evidence in terms of quality may include, but are not limited to:

- Students’ perception that PDP training was/is essential in the workplace.
- Students’ perception that their PDP training was/is essential for academic success.
- Consistent or growing number of students attending PDP offerings.

5. Lessons from the Literature: Learning Assessment at the University Level

In North America, the history of learning assessment in higher education dates back to the 1900s when standardized tests were created to measure students’ learning. According to Savage (1953), learning assessment started with the Carnegie Foundation for the Advancement of Teaching creating statistical forms to measure spelling, reading, arithmetic, etc. That soon was applied to universities like the Massachusetts Institute of Technology and Columbia University.

A “monumental Pennsylvania Study” in the late 1920s, which was extremely focused on procedural (mathematics) and declarative knowledge (concepts) was a cornerstone in assessment. The study was “exemplary” as it had a clear conception of “what learning should achieve and how learning should be measured” (Shavelson, 2007, p. 6). The Pennsylvania study “laid out a conception of what was meant by undergraduate achievement and learning, assuming that achievement was the result of college learning defined as the accumulation of breadth and depth of content knowledge” (Shavelson, 2007, p. 7).

Shavelson (2007) considers the University of Chicago College program another defining element in the history of learning assessment. Instead of an individual faculty or team in separate courses, a university’s examiner office was established to create and administer tests. In addition, the office utilized open-ended essays and multiple-choice questions that demanded interpretation. This was an innovation at the time: skills examined were beyond declarative and procedural knowledge and encompassed the ability to predict outcomes and explain phenomena. In other words, skills started to be considered as important as knowledge.
Universities have different learning assessment models, but the main purpose is clear. The Higher Learning Commission (HLC) in the United States consider assessment to be “critical not only to promoting and improving effective curricular and co-curricular learning experiences and to providing evidence of the quality of educational experiences and programs, but also to enhancing the public’s perception of the value of higher education” (2003, p. 2) Miller & Leskes (2005, p. 9), in a report for the Association of American Colleges and Universities (AAC&U), state that the following questions should guide the assessment of learning programs:

1. “Do the program’s courses, individually and collectively, contribute to its outcomes as planned?”
2. “How well does the program fulfill its purposes in the entire curriculum?”
3. “How well do the program’s sub-categories (e.g., distributive requirements in general education) contribute to the overall purposes?”
4. “Does the program’s design resonate with its expected outcomes?”
5. “Are the courses organized in a coherent manner to allow for cumulative learning?”
6. “Does the program advance institution-wide goals as planned?”

Interestingly, the questions fall into two categories:

- Questions 2, 4, and 5 are design-related and could be summarized as “are the program’s courses designed in coherent and high-quality manner?”
- Questions 1, 3, and 6 are centered on outcomes and could be summarized as “do the program’s courses advance the expected outcomes?”

Miller & Leskes (2005) consider that the assessment of programs should be about their design quality and their outcomes. These are interrelated, but not mutually exclusive. After all, program’s courses may be well-designed and not reach the expected outcomes.

Rochester Technology Institute’s Academic Program Assessment Guide (2016) provides a step-by-step of best practices in program assessment planning. It consists of a first step to gathering and reviewing program related materials; this includes website, catalog, program materials, mission statement, and previous assessment data reports. Following this, step 2 reviews/creates a list of 4-6 program goals and develops measurable learning outcomes for each. As part of step 2 the data source and the method of measurement should be identified, as well as a list of benchmarks (target achievement levels). Finally, the guidelines state that timelines should be established. Importantly, there should be a clear description of how results will be used and disseminated to improve the planning process in the future.
The UFC Academic Program Assessment Handbook (2005) from University of Central Florida summarizes the process of assessment described in Harding, Dickerson, and Kehoe (1999), Melnyk & Denzler (1995), and Chase & Aquilano (1995). These are similar in terms of procedures to the four-step planning-assessment cycle described by the U.S. Middle States Commission of Higher Education report. The cycle is articulated differently, but it is essentially the same: defining clear goals, implementing strategies to achieve such goals, assessing achievement, and then using results to improve, inform, and plan resource allocation decisions.

Steps 1 and 2 have challenges on their own since the data collected usually concerns direct and indirect evidence (U.S. Middle States Commission on Higher Education, 2007). While the former refers to concrete data, the latter can provide biased and at times false information. Examples of direct evidence are examinations, standardized tests, and class participation. A well-known example of indirect evidence is course evaluations. They are more about students’ perception, which can be misleading if analyzed on their own:

“When a student completes a calculus problem correctly and shows her work, learning is demonstrated directly. When the same student describes her own calculus abilities as excellent, she is demonstrating indirectly that she has learned calculus. Both of these pieces of information about the student’s performance are important. For example, a student’s perception that she is doing poorly in calculus when she is actually doing well would provide important information to both the student and the professor. However, indirect evidence—in this case, a perception—is less meaningful without the associated direct and tangible evidence of learning.” (p. 28).

Finally, the benefits of learning assessment, as described by the University of Cambridge (2005), can be summarized as two factors. The first of them is that it “helps learners focus on the aim of elements of their learning”, which can help them know what is part of the idea of excellence. A second factor is purely the connection created between learning and assessment activities, which then mutually inform each other. Learning assessment makes students “more confident, reflective, innovative, and engaged.” (p. 2)

Similarly, the U.S. Middle States Commission on Higher Education (2007) sees that assessment offers a form to validate effective teaching/learning efforts. Beyond that, it also means that “the admissions, public relations, and development offices have substantive research information to use when publicizing the institution and its programs,” and that “external stakeholders have concrete, rather than anecdotal, evidence of the quality of the institution and its programs.” In other words, learning assessment improves accountability, learning, and document information that can serve multiple purposes.
6. The Current State of Graduate Student PDP Assessment

The problem of how to assess PDP is not particular to Canada. Graduate student PDP assessment is a recent concept, still starting to be discussed academically and still incipient in practice. When analyzing professional development for STEM graduate students in the United States, Denecke, Feaster & Stone (2017, p. 11) reported that “universities actually lack the best practice models, infrastructure, and resources needed to conduct sustainable, log-term tracking of career outcomes.” Similar to Canadian findings, over 90% of the 226 American institutions that responded to their study claimed to use participation metrics or satisfaction as assessment tools.

There is no consensus in the literature as to what is the best method to measure the success or efficiency of PDPs. According to Denecke, Feaster, & Stone (2017), the main methods can be categorized in some ways already utilized by Canadian universities: participation metrics or satisfaction, employer satisfaction, and career placement. Although studies place emphasis on different assessment tools, they tend to fit in one of such categories, which are not mutually exclusive. Yet, studies highlight that before selecting a tool it is important to understand the benefit its use adds to program assessment. After all, practical challenges must be considered: the cost and the resources (both time and personnel) involved.

Campus Labs – http://www.campuslabs.com – offers an additional method, or software, that allows data collection for higher education. Their website states that such documentation leads to higher accountability, which helps make more informed decisions in education and having a more transparent process for stakeholders. Through the use of customizable technological comparative dashboards, it makes it possible to “filter” information in a variety of forms (i.e. demographic, programs, etc.). Customization is done by answering some questions such as:

- What are the indirect or direct measures of learning?
- How are you going to use the data?
- What resources (i.e., time, materials, budget, expertise) do you have available to you?
- Who is participating in your assessment and how will you gain access to that group?
- Who will be responsible for carrying out the assessment and what training/support will they need?
- What is the appropriate timing for my assessment?
- If you are assessing learning, do you need direct or indirect evidence of learning
- Do you need quantitative data, qualitative data, or both?
7. Challenges in Implementing Assessment Methods in Graduate Student PDP

There are several challenges in implementing assessment models in universities across Canada; these can be categorized as being conceptual or procedural. Consultation with graduate student PDP administrators found that conceptual challenges are the primary reason assessment is not a regular practice in the PD field. The major conceptual challenge in PDP assessment is defining what constitutes success. While some institutions may define success in practical terms (i.e. how long after graduation does it take for graduate students to work in their field?), others may focus on the quality of program offerings (i.e. are the current offerings developed and delivered in the best way for students to learn skills they may need in the future?). Although these may be correlated, they should not be understood as having a cause-effect relationship.

University of Central Florida’s Program Assessment Handbook (2008) on learning assessment points out a main misconception of assessment is that quality leads to outcomes. Another common misconception is to assume that the objective of assessment is success, or reaching the expected outcomes. There is consensus in the literature that the methods should be defined in terms of specific goals. Such goals should in turn focus on the main purpose of assessment—improvement (Palomba & Banta, 1999; Astin, 1991; Lindstrom, Taylor, Weleschuck, 2017). There is always room for improvement even if outcomes are being met.

Rochester Institute of Technology’ Academic Program Assessment Planning Guide (2016) states that “the goal of creating an academic program assessment plan is to facilitate continuous program level improvement” (p. 4). The American University’s guidelines for program assessment considers an efficient assessment should provide evidence that results are used for improvement (Program Assessment Guidelines, American University, 2017). The goals of PDP offerings should then be viewed as moving targets which have to adapt to the changing realities of universities, students, and the work environment. Regular assessment helps ensure the offerings are continually evolving to reach these moving targets.

The major procedural challenge in PDP assessment, in turn, is to identify methods for data collection when expected outcomes are not clear. In addition, there are inherent challenges to large assessment projects such as the ones undertaken by the University of Toronto, the University of British Columbia, McGill University and HEQCO (Appendix D). The University of British Columbia (2017, p. 31) explains the following in regards to data collection:

“It was particularly difficult at times to accurately categorize roles in higher education, the sector categorization was not always straightforward, and, for the internet searches, the information may not have been current, and links to the graduate may have been incorrect.”
8. Assessing Graduate Student PDPs: A Conceptual Framework

As with learning assessment, developing a framework for graduate student PDP assessment will take time, especially as the coordination of PDP is still new and in development for some universities. Nonetheless, it is possible to draw lessons from learning assessment that can start the conversation, and serve as initial guidelines for the foundation of a national graduate PDP assessment model for those universities who have the capacity to move forward.

One lesson is that the assessment of student learning is about creating a culture of evidence. Given the goal of improvement, the same can be applied to the assessment of graduate student PDPs. Rather than being about comparison, assessment would be part of the PDPs themselves and informed by evidence so they can improve over time. According to Concordia’s Assessment Handbook (2003), learning assessment methods have traditionally been categorized as:

**Direct Assessment**
The collection of hard data on the program, not open to interpretation.

**Indirect Assessment**
Students’ opinions and perceptions of the program.

Indirect assessment methods provide evidence purely based on perception. Indirect assessment methods can be further categorized based on whether the method is active (interaction with the students) or passive (gathering information and data from other sources such as former graduate students’ employer) (Program-Based Review and Assessment, University of Massachusetts Handbook, 2001). Direct assessment methods will provide more quantitative data, but should be used together with indirect methods to provide more accurate results.

The history of learning assessment highlights that a starting point for PDP assessment should be the creation of a conceptual framework. It must take two factors into consideration. First, expected outcomes should guide that framework: as Paloma et al. (2000) have argued, the first task when thinking about an assessment model should be the identification of the needs of the program. The second element to be taken into account in a conceptual framework is that: Many factors will influence what will be right for each institution at a given time. As Rose (2012, p. 21, 22) points out: the size of the operation; the level of prioritization of PDP activity by the administration of each institution; the availability of resources, etc., all have a role in how to best manage a graduate student PDP.
Given that the universities mentioned in the Phase 1 report have different approaches to PDPs, a general model should take into account such differences. This is why the theoretical framework developed in this project aims to be as generalizable as possible, as well flexible. The steps described on this page are a combination of the best applicable guidelines for the case of graduate student PDP assessment (Figure 3, details in Appendix C).

**Figure 3 - Full Cycle of Graduate PDP Assessment**

These, however, should be undertaken based on the following premises:

- Assessment should be ongoing and not episodic;
- Instead of being about ranking PDPs, step 4 must be motivated by improvement within the individual program, thus leading to a **collective progress** in Canadian PDPs.

### 8.1 Aligning Expected Outcomes and Assessment Methods

Choosing the appropriate assessment methods can be challenging; yet, it is important to bear in mind that “complex measures are not the key to successful assessment. Instead, [administrators should] consider measures that provide data that are easily interpreted and are not ambiguous” (University of Central Florida’ UFC Academic Program Assessment Handbook, 2005, p. 30). When choosing a method, **the main goal should be obtaining information to improve the program**.

Figure 4 shows a **general assessment matrix** that may be used to initiate the dialogue on assessment and help choose assessment methods aligned with the outcomes desired. This type of matrix is heavily used in learning assessment. Figure 4 thus presents a matrix adapted to the reality of graduate student PDP and is guided by the idea of improvement, encompassing all steps of the cycle of graduate student PDP assessment (Appendix C). In addition, it can help identify not only objectives and outcomes, but also practices that are already in place.
**Figure 4 - General Assessment Matrix for Graduate Student PDPs**

<table>
<thead>
<tr>
<th>Outcomes</th>
<th>Assessment Method</th>
<th>Standards of Comparison</th>
<th>Interpretation of Results</th>
<th>Use of Results / Action Plans</th>
</tr>
</thead>
<tbody>
<tr>
<td>What skills and competencies will a graduate student possess after completion of the PDP offering?</td>
<td>How will the acquisition of skills and demonstration of competencies be measured (who is being assessed, what methods will be used, how often will assessment be completed?)</td>
<td>What demonstrates proficiency?</td>
<td>What do the data show?</td>
<td>What changes will or are planned to be made (by when)?</td>
</tr>
</tbody>
</table>

1.  
2.  
3.  
4.  

Source: Adapted from the learning assessment matrix created by the University of Pittsburgh (2017)

### 8.2 Choosing Adequate Assessment Methods

When choosing assessment methods, a general approach to analyze if they are adequate is grounded on the following questions:

1. *Is evidence provided by the evaluation methods linked to one of the expected outcomes?*
2. *Are the questions clear and interpreted consistently?*
3. *Are outcomes evaluated by multiple means?*
4. *Is the information obtained useful for making improvements?*
5. *Does everyone interpret the responses the same way?*
6. *Are the results corroborated by other evidence?*
7. *Are efforts to use “perfect” research tools balanced with timeliness and practicality?*
8. *Is evidence gathered over time and across situations?*
9. *Are third parties (i.e. assessment experts) who are knowledgeable about measurement serving as resources?*


Question 1 is about the alignment between expected outcomes and methods, but the remaining questions highlight an essential factor in choosing assessment methods: are they useful in providing evidence and information that can be used to improve the program?
According to the literature on graduate student PDPs examined in Section 6, current assessment tools can mainly be categorized in terms of: a) participation metrics, b) students’ satisfaction, c) employer satisfaction, and d) career placement. Figure 5 thus presents a second matrix that can be used by graduate student PDP administrators to reflect on the quality and the effectiveness of their PDP components through the type of evidence provided by methods. It also allows administrators to have a broader understanding of:

- The purpose of assessment methods that are in place (and if they actually are in place),
- What the results of the assessment tools as a whole mean in terms of outcomes; and, particularly, if indirect evidence supports direct evidence and vice-versa.

**Figure 5 - Example of Evidence-Based Assessment Matrix for Graduate Student PDPs**

<table>
<thead>
<tr>
<th>Assessment Tools</th>
<th>Feedback Questionnaires and Surveys</th>
<th>Graduate students attendance at PDP offerings</th>
<th>Number of Graduate students whom attended PDP offerings employed within X years after graduation</th>
<th>Employer Satisfaction with former graduate student’s performance in the workplace</th>
</tr>
</thead>
<tbody>
<tr>
<td>Outcomes</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Quality of PDP / offerings</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Effectiveness of PDP / offerings</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>


Assessment methods are not limited to the four types presented in Figure 5. The following is a list of additional methods, retrieved and adapted from learning assessment guides as well as the existing literature on graduate student PDP assessment methods, which may be incorporated in terms of quality and effectiveness assessment. Further details may be found in Appendix E.

- Curriculum Mapping
- Feedback Questionnaires/Surveys and Student Attendance
- Observations by the Facilitator
- Observations by Non-facilitator
- Career Placement
- Internship/Employer Survey
- Student Satisfaction Survey after X years
- Former Graduate Student Attendees Focus Groups
- Benchmarking across Universities and Programs
9. Beyond Conceptualization: Applying Assessment Tools

CAGS and the CCGSPDA believe that a first practical step can be taken to work towards the collective national goal of using assessment for improvement. This section provides two assessment tools that are specific to the data gathered from Canadian universities: a foundational assessment checklist (Figure 6) and a detailed assessment matrix based on the core competencies identified in Report 1 (Figure 7).

The checklist in Figure 6 allows administrators to analyze if their PDPs lack any of the foundational offerings or assessment tools that are used by many universities across Canada. The Phase 1 report should be used as a reference in case the PDP does not meet one of the conditions established in parts 1 or 2. If an administrator realizes the PFP has a gap, he/she would benefit from consulting how other PDPs have structured the workshops mentioned in the checklist, and the Phase 1 report is the most up-to-date source.

Once the PDP meets the conditions established in Figure 6, it can be considered to have the foundation for a quality PDP. Administrators can then consider a broader scope of themes for offerings and the types of assessment tools. Methods that may be included can be, but are not limited to, the ones outlined in Appendix E. In terms of offerings, administrators can move to analyzing if the PDP can be informed by good practices of other universities.

CAGS and the CCGSPDA suggest PDP administrators use the more detailed assessment matrix displayed in Figure 7 in addition to the foundational tool. The matrix is flexible and can be expanded in accordance with the university’s number of offerings and assessment methods. Part A focuses on the offerings related to the competencies outlined and should be filled with “introductory” and “advanced”, as well as the number of times offered per year. Part B is descriptive and focuses on assessment methods and their results.

Both tools are starting point to discuss how to understand any gaps in PDPs and move past them. They can also help to raise awareness on PDP’s strengths and weaknesses. Rather than being about evaluating and ranking success, they aim to help begin a conversation, and to identify the steps to develop and/or improve the PDP quality.

Phase 2, CAGS – October 2017
### Figure 6 - Foundational Assessment Tool

#### 1. Academic Success

<table>
<thead>
<tr>
<th>Question</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>a.</td>
<td>Does the PDP have offerings related to academic success?</td>
</tr>
<tr>
<td>b.</td>
<td>Are there offerings centered on learning, publishing, and writing?</td>
</tr>
<tr>
<td>c.</td>
<td>Are offerings on learning, publishing, and writing offered at least once a year?</td>
</tr>
</tbody>
</table>

Data gathered for Phase 1 showed that that category 1, 2, and 3 institutions have offerings centered on academic success.

#### 2. Career Development

<table>
<thead>
<tr>
<th>Question</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>a.</td>
<td>Does the PDP have offerings related to career development?</td>
</tr>
<tr>
<td>b.</td>
<td>Are there offerings centered on career planning and resume/CV writing?</td>
</tr>
<tr>
<td>c.</td>
<td>Are offerings on career planning and resume/CV offered at least once a year?</td>
</tr>
</tbody>
</table>

Category 1 and 2 institutions and a few category 3 institutions provide offerings that specifically focus on post-graduation career in addition to academic success.

#### 3. Assessment

<table>
<thead>
<tr>
<th>Question</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>a.</td>
<td>Are feedback forms administered to students at the end of each offering?</td>
</tr>
<tr>
<td>b.</td>
<td>Are the results of feedback forms used to discuss improvements?</td>
</tr>
<tr>
<td>c.</td>
<td>Are participation metrics used to discuss improvements?</td>
</tr>
</tbody>
</table>

As discussed in this report, assessment should not be an end in itself, but rather a means to discuss and implement improvements in the PDP.
FIGURE 7 - DETAILED ASSESSMENT MATRIX BASED ON CANADIAN UNIVERSITIES' CORE COMPETENCIES IN GRADUATE STUDENT PDPs

<table>
<thead>
<tr>
<th>TO BE COMPLETED BY UNIVERSITY</th>
<th>PART A – PROGRAM</th>
<th>PART B - ASSESSMENT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Outcomes</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Career Building</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Health and Wellness</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Physical &amp; Mental</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Personal and Business</td>
<td></td>
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<tr>
<td>Finance</td>
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<tr>
<td>Reconciliation</td>
<td></td>
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<tr>
<td>Spirituality</td>
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<tr>
<td>Innovation</td>
<td></td>
<td></td>
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<tr>
<td>Leadership &amp; Management</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Internet Tools</td>
<td></td>
<td></td>
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<tr>
<td>Success in Graduate School</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Communication &amp; Writing</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ethics and Responsibilities</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Research</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Scholarship &amp; Funding</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Teaching</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Source: Adapted based on core competencies identified in the CAGS Phase 1 report, and elaborated based on learning assessment matrices displayed in Palomba & Banta (1999), Diamond (1998), and the University of Central Florida’ UFC Academic Program Assessment Handbook (2005)
10. Final Considerations and Next Steps

This report is guided by the goal to advance graduate education and research. CAGS and the CCGSPDA intend to take the information contained in this report and develop it further through additional research and consultations. In addition to the use of the framework and matrices presented in this report, there is a potential for CAGS to develop accreditation standards for Canadian universities’ graduate student PDPs. Indeed, once universities start implementing assessment practices and sharing methods and best practices, this could be incorporated as a complement for the categorization on PDP activity presented in the Phase 1 report.

Accreditation could be delivered in levels, based on criteria such as having the potential to help graduate students achieve their academic and career goals, through to programs that demonstrate their high quality programming is successful in helping graduate students achieve academic success and positive transition to the workplace. In addition, such accreditation would be an complementary method to:

- Provide to the public a justification concerning why PDPs are necessary
- Make universities accountable in terms of how graduate students’ goals in professional development are being achieved
- Disseminate a PDP assessment culture

Providing accreditation would not be about ranking, but would function to promote the dialogue among universities and graduate student PDP administrators. As was defined in the Phase 1 report, PDPs aim to make students better-equipped for academic success and to transition to the workplace; hence, this project is guided by that same goal.

The accreditation plan still needs to be further discussed and is a potential next step to the implementation of assessment methods across Canada. The first immediate issue concerns the themes discussed in this report since it is important to disseminate an assessment culture in graduate student PDPs for these to be constantly improving despite their level of PDP activity. CAGS and the CCGSPDA expect that this report helps filling in the gap in the literature in terms of graduate student PDP assessment as well as provide initial procedures to deal with the practical challenges faced by PDP administrators.
References


American University’s Program Assessment: http://www.american.edu/provost/assessment/Guidelines.cfm


Kemp, I.; Seagraves, J. (____) Transferable skills—Can higher education deliver?


http://www.ucalgary.ca/taylorinstitute.guides


Appendix A – Experts who attended the meeting in Toronto on March 6, 2017

Alexandra MacFarlane, HEQCO

Arnold, Hillary, Ontario’s Ministry of Advanced Education and Skills Development (MAESD)

Elyse Watkins, HEQCO

Jonathan Turner, University of Toronto

Luc De Nil, University of Toronto

Nicholas Dion, University of Toronto

Sally Rutherford, CAGS

Padure, Lucia, MAESD

Richard Wiggers, Mohawk College
Appendix B – Additional representatives who contributed to this report

Tara Christie, PhD. Manager My GradSkills, Faculty of Graduate Studies. University of Calgary. Chair, CCGSPDA.

Jonathan Turner, PhD. Career Educator. University of Toronto. Vice-Chair, CCGSPDA.

Jacqui Brinkman, MSc. Manager, Graduate Pathways to Success Program. University of British Columbia. Past-Chair & Membership Manager, CCGSPDA.

Rebecca Dirnfield. Career Education Specialist, Faculty of Science. Ryerson University. Secretary, CCGSPDA.

Lina Di Genova, PhD. Associate Director, Assessment, Learning and Evaluation, Student Services. McGill University.

Thanks to the many other graduate student career and professional development administrators who provided valuable feedback in multiple conversations.
Appendix C – Step-by-step Cycle of Graduate PDP Assessment

This is a more in-depth and detailed explanation of each step that is part of the full cycle of graduate PDP assessment as described in Section 8 of this report.

**Full Cycle of Graduate PDP Assessment**

Each of the six steps is further detailed below:

**Step 1 – Identifying expected outcomes**
This step concerns three tasks:

1.1 The identification of the individuals that will be responsible for the assessment process, which may vary from one institution to another (ex. Career Centre, Faculty of Graduate Studies, a specific agency created for that purpose, etc.)
1.2 The identification of the outcomes expected (ex. a percentage of graduate students that will be employed in within three years, a percentage of graduate students that feel prepared to face the workplace, etc.)

**Step 2 – Identifying appropriate assessment methods**
This step consists of identifying what are the best methods to evaluate if the PDP results are meeting the expected outcomes identified in Step 1.

**Step 3 – Assessing**
This step concerns acting on Step 1 by

3.1 Collecting data on how students feel about offerings and their quality (ex. student feedback; do they feel attending PDP offerings make them more prepared?)
3.2 Collecting data on PDP offerings’ outcomes (ex. how long has it taken students who attended such offerings to be employed? How does that compare to students that have not attended PDP offerings?)

Although this has been approached in previous sections, it is important to note that both direct and indirect evidence should be considered when possible. As mentioned by the U.S. Middle States Commission on Higher Education (2007), “indirect evidence is less meaningful without the associated direct and tangible evidence.”

**Step 4 – Analyzing and Reviewing**

Once the graduate student PDP offerings have been assessed, it is important to analyze the results in order to identify how they can be used to improve offerings, which consists of:

1.1 Interpreting how the data collected affects program offerings
1.2 Determining actions needed to improve the quality of PDP offerings
1.3 Determining actions needed to enhance the prospect to meet expected outcomes

**Step 5 – Implementing changes**

This step concerns the implementation of the actions identified in Step 4. These can be in the form of new guidelines, the creation of new workshops, or the adjustment of existing offerings.

**Step 6 – Re-planning**

This step, rather than being about offerings, concerns the assessment plan itself. Once the changes have been implemented in Step 5, these should be included in designing an adapted assessment plan. The new assessment plan should have forms to monitor whether the changes have the desired effect.

Given the literature on graduate student PDP assessment, steps 1, 2 and 3 are the most challenging ones in implementing assessment methods. The following subsections will thus examine how PDP administrators can overcome the difficulties in connecting these three steps and avoid choosing methods that may not be adequate to evaluate the expected outcomes. The matrices presented in 7.1 and 7.2 are for internal use and aim to be tools to help guide administrators through such initial steps.
Appendix D – Graduate PDP Assessment in Canadian Universities

Among the twenty-nine universities in Canada that replied to the Phase 1 survey, eight reported to have a form to evaluate their graduate PDPs’ success; but, among them, seven reported to do so through feedback forms:

- Concordia University
- Institut National de la Recherche Scientifique
- McGill University
- Queen’s University
- University of Lethbridge
- University of British Columbia
- University of Calgary

The University of Toronto was the only university to have reported a different type of assessment method. Through the 10,000 PhD Program, the university tracks career trajectories over the last 15 years and compares these with registration data from their graduate student PDPs offerings. In 2016, they created a team to collect information on 10,000 PhD students that had graduated between 2000 and 2015. The main purpose is to determine these students’ employment status and track similarities and differences among the several disciplines.

Other universities have made use of surveys to learn about their graduate alumni. Since 2009, McGill University contacted 453 former PhD students to learn about their career path 2 and 5 years after graduation. In 2016, HEQCO undertook the challenge to examine the career paths of Ontario’s 2009 PhD graduates and obtained results of 2,310 of them using internet searches as their main research instrument.

The University of British Columbia (2017) conducted a survey with 3,805 PhD students who graduated between 2005 and 2013. Surveys provided a way for former graduate students to state where they work, how they felt about finding work, their professional experience in general, and also to offer recommendations on what could have been useful to prepare them for the workplace. The project was successful in obtaining data on 91% of the graduates.

Nevertheless, except for the University of Toronto, other projects in Canadian universities did not investigate the relationship between career path and registration/attendance in graduate student PDP offerings.
Appendix E – Potential Tools for Graduate PDP Assessment

The following are potential methods that can be incorporated for graduate PDP assessment. They were adapted from learning assessment tools and good practices in professional assessment. This is not an extensive list and methods are not limited to the tools outlined.

- **Curriculum Mapping**
  
  University of Central Florida’ UFC Academic Program Assessment Handbook (2005) suggests “curriculum mapping” as an effective method. The method concerns the verification of how aligned the content is with so-called SLOs (student learning outcomes) in an attempt to check if courses’ contents are relevant to the outcome expected. It consists of analyzing how each course helps participants successfully reach each SLO. This method can be easily applied to assess the alignment between the structure of graduate student PDPs and the expected outcomes (Figure 9 is a complete form of curriculum mapping).

- **Feedback Questionnaires/Surveys and Student Attendance**
  
  These are the predominant assessment tools for PDP in Canadian universities. They are important in bridging students’ perception with PDP planning. They are essential for PDP administrators and facilitators to know how attractive their offerings have been, which is important to understand how many times to offer a program each year. Nonetheless, the method falls short in providing actual evidence of the effect offerings had in students’ skills development, being rather an indication of how comfortable and enthusiastic they feel about such offerings. This method—which is an active method and concerns gathering indirect evidence—should be used in combination with another method in order to not bias the results (according to Allen & Noel, 2002).

- **Observations by the Facilitator**
  
  The observation by the facilitator is a simple method that can be implemented without difficulties. It is a passive method and concerns indirect evidence, but it allows for a) critical analysis and self-evaluation, and b) documenting the perception of the facilitator on how the offering was received by students. Both benefits can indicate areas for improvement. This method may imply biased results given that it is a passive method. Nevertheless, it can be a helpful tool if used combined with other assessment methods.

- **Observations by Non-facilitator**
  
  The observation by an evaluator other than the facilitator allows for more evidence on how students responded to the offering in class or during a workshop. Although it is a passive method and concerns indirect evidence, the reaction of graduate students to
how the offering is being presented may serve to redesign how the content should be approached in the future. Since they offer different views, the non-facilitator can be a) someone who shares the same area of knowledge as the facilitator (e.g. a colleague who facilitated the workshop before) or b) someone who does not share the same knowledge as the facilitator, but has knowledge of similar areas (e.g. individuals from partner agencies in career development). This method is also a complementary tool to feedback questionnaires answered by students at the end of offerings. After all, questionnaires are mostly about the students’ perception, and the observation of a non-facilitator can serve to validate or partly dismiss some points. In a situation in which a PDP offering is a workshop, the non-facilitator can assess the student’s skills at the beginning and at the end of the workshop using scoring rubrics (which, rather than being about providing the score to students, would be about gathering data).

• Career Placement

Contacting graduate students who attended PDP offerings, but have been alumni for a few years is an interesting source of information and a method that provides direct evidence. It allows administrators to know if students who attended offerings are working in their field, in a field in which they use skills/knowledge they learned as graduate students, in a field in which they do not make use of such skills, or unemployed. Nevertheless, this method poses challenges since a number of factors can influence individuals’ career placement (i.e. the economy, students changing their fields of work, etc.). In addition, it is difficult to distinguish what is the outcome of the PDP and what is an outcome of other factors. Limitations can be mitigated if combined with an extensive survey questionnaire on other topics, such as students’ perception on the value of the PDP offerings they attended.

• Internship/Employer Survey

This not only leads to a greater collaboration between academic and employment sectors, but also makes graduate degree-holders more prepared to face the workplace. Beyond that, employer satisfaction and feedback would be a form to assess the success of graduate-degree holders in the workplace. The U.S. Middle States Commission on Higher Education takes employer satisfaction as an example of how institutions assess student learning. A possibility would be for PDP administrators to send a form to recent graduates’ employers asking them to evaluate former students in an open-ended way or to numerically rank their performance in terms of knowledge, skills, and attitudes. This is a passive method that provides indirect evidence; it poses some problems since it also relies on perception. Yet, it can be extremely useful when combined with a method that provides direct evidence.
• **Alumni Satisfaction after X years**

Both graduate students who attended PDP offerings and those who did not can provide data on the challenges they faced when entering the workforce after graduation. Survey answers can be compared to estimate the value seen in PDP offerings.

• **Alumni Attendees Focus Groups**

Focus groups consist of a meeting with a group of individuals that have successfully completed a program where they identify strengths and weaknesses within the program. This could also be done for graduate student PDPs: successful alumni that have attended PDP offerings would have the opportunity to provide their insights and thoughts on how offerings affected their skills in job searching and in the workplace. This is an active method that provides indirect evidence, and allows for interesting qualitative data to administrators since – contrary to the opinions collected on feedback questionnaires – former students would have been through the process of transitioning to the workplace, having a different perception from students that are still enrolled.

• **Benchmarking across Universities and Programs**

Benchmarking allows activities to be reviewed, monitored, and for institutional performance to be improved when compared to idealized targets. Once concrete objectives are defined, universities can compare their offerings/assessment tools to such ideal goals and identify where they stand in relation to those. It is a process of self-regulation that requires an initial plan (what to benchmark), analysis (data collection and gap analysis), and action plan (implementation). The matrix provided in Figure 7 is a type of benchmarking process whose “ideal goals” were established as the best practices found in Canadian universities and can thus be a helpful tool for improvement based on realistic and practical objectives.