Learning by Degrees™

A Cohort 3 Pathways Demonstration Project
Evaluating the Lumina Foundation’s Degree Qualifications Profile

A Quality Initiative Project
Completed in Partial Fulfillment of the Open Pathways Reaccreditation Process

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Part 1: Goals and Results

Original Project and Its Goals

In April 2011, UW-Whitewater was invited by the Higher Learning Commission of the North Central Association (HLC) to join a cohort of 20 other institutions to complete the Improvement Process for its upcoming decennial visit by completing a Pathways Demonstration Project. (UW-Whitewater was informed by the HLC that it was invited to participate because it had established itself as a high quality institution during previous visits and because it added to the diversity of institutions in the cohort.) For this cohort, the Lumina Foundation (in conjunction with the HLC) was charging participating institutions with testing and evaluating Lumina’s proposed Degree Qualifications Profile (DQP)—a “framework for defining the learning and quality that college degrees should signify.”

The DQP proposes specific learning outcomes that benchmark the associate, bachelor’s and master’s degrees regardless of the student’s field of specialization. The DQP identifies learning outcomes as part of five basic areas of learning: Broad, Integrative Knowledge; Specialized Knowledge; Intellectual Skills; Applied Learning, and Civic Learning. While sample outcomes for each area are described independently, in practice there should be considerable overlap and integration. For example, students gain conceptual understanding and sophistication both by exercising their intellectual skills and by applying their learning to complex questions and challenges in academic and non-college settings.

In June 2011, UW-Whitewater sent a team at the invitation of HLC to meet with other institutions invited to participate in the cohort. For two days, attending teams received an overview of the DQP, discussed the model with teams from other institutions and, finally, conceptualized approaches to testing the DQP. The UW-Whitewater team developed the Learning by Degrees® plan—a plan designed to position the institution to better assess student learning relative to its recently adopted Liberal Education and America’s Promise (LEAP) learning outcomes (i.e., transposing the DQP outcomes with LEAP outcomes) across various stages of UW-Whitewater’s educational process. It was anticipated that upon completion of the plan, UW-Whitewater would be able to not only provide HLC with specific feedback relative to the DQP model, but would also be positioned to:

1. delineate differences in expectations of student learning at UW-Whitewater (profiled by the DQP) between associate, bachelor’s, and master’s-level students;
2. more richly understand what distinguishes graduate-level from bachelor’s-level learning at UW-Whitewater (as requested by HLC in its 2006 visit);
3. identify differences between UW-Whitewater students who are associates degree qualified and transfer students who come to UW-Whitewater after completing associates; and
4. pilot test and evaluate the utility of the “Assessment Center” concept.

The Learning by Degrees® plan proposed to invite participation from four academic departments (one from each academic college) that offered master’s degree programs. These departments, selected in consultation with the academic deans, received resources (i.e., release time, stipends, service and supply) from the institution to support: 1) developing new or deploying existing assessments that were specific to DQP competencies (but also LEAP relevant); 2) coordinating student participation in the UW-Whitewater Assessment Center testing process; 3) preparing final reports that summarized project findings and evaluates the assumptions behind, and utility of, the DQP model; and 4) participating in all campus-wide meetings relevant to the project scheduled between November 2011 and June 2013.
Departments that participated in the Learning by Degrees project, depending on the breadth and depth of their efforts, were considered eligible to consider their project and report as substitutes for Self-Study Reports required by the Audit and Review process.

Four academic departments agreed to participate in the project: Accounting (College of Business and Economics); Communication (College of Arts and Communication); Psychology (College of Letters and Sciences); and Special Education (College of Education and Professional Studies). These academic departments were directly responsible for completing evaluations of two key areas of learning that are part of the DQP model—Specialized Knowledge and Applied Learning. Further, each of the departments was responsible for getting a representative sample of students from within their academic majors (and graduate programs) to complete a series of centrally organized standardized assessments that would test for differences in student competencies (as prescribed by the DQP model) by academic level in the key learning area of Broad Integrative Knowledge and in the area of Intellectual Skills. See Table 1.

<table>
<thead>
<tr>
<th>DQP Area of Learning</th>
<th>AAC&amp;U LEAP Essential Learning Outcomes</th>
<th>UW-Whitewater Evaluation Constituency</th>
<th>UW-Whitewater Assessment Strategy</th>
</tr>
</thead>
<tbody>
<tr>
<td>Specialized Knowledge</td>
<td>[No Equivalent]</td>
<td>Academic Departments</td>
<td>Direct Assessment</td>
</tr>
<tr>
<td>Broad Integrative Knowledge</td>
<td>Knowledge of Human Cultures and Physical and Natural World</td>
<td>Assessment Center Testing</td>
<td>College BASE (CBASE) Test</td>
</tr>
<tr>
<td>Intellectual Skills</td>
<td>Intellectual &amp; Practical Skills • inquiry and analysis • critical and creative thinking • written and oral communication • quantitative literacy • information literacy • teamwork and problem solving</td>
<td>Assessment Center Testing</td>
<td>• CBASE Test • CAT Critical Thinking Test • iSkills • Writing Matters</td>
</tr>
<tr>
<td>Applied Learning</td>
<td>Integrative Learning</td>
<td>Academic Departments</td>
<td>Direct Assessment</td>
</tr>
<tr>
<td>Civic Learning</td>
<td>Personal and Social Responsibility</td>
<td>[Not Assessed]</td>
<td></td>
</tr>
</tbody>
</table>

Table 1. Alignment of DQP, LEAP, and Evaluation and Assessment Responsibilities

The evaluation of Specialized Knowledge and Applied Learning competencies required departmental teams of four to five faculty members to complete a series of evaluation and direct assessment activities within their department that would provide feedback about the efficacy of the DQP model. Specifically, each department agreed that it would:

1. Conduct a content analysis of how the learning outcomes in the syllabi of courses offered by the department at the 200-level, 400-level, and 700-level compared and contrasted with the DQP Specialized Knowledge and Applied Learning competencies;
2. Interview faculty and instructional staff in their department to explore how the DQP learning outcomes aligned with both instructional expectations and the competencies of students entering their major, completing their major, and completing their master’s degree program;
3. Convene with small focus groups of students from the department (at distinct
associate, bachelor’s, and master’s levels) to discuss the value of the DQP to students (see p. 4 of DQP booklet);

4. Design and implement an assessment plan to assess one DQP Specialized Knowledge competency (from the baccalaureate level)—such that the department is able to comment on student proficiency levels relevant to that competency among students entering their major, completing their major, and completing their master’s degree program. The plan was to involve the direct assessment of student learning from curriculum-embedded assignment(s), content exam(s), portfolio reviews or any other direct assessment effort such that data collected positioned the department to discuss proficiency levels of students entering their major, completing their major, and completing their master’s degree program relative to the identified DQP Specialized Knowledge competency; and

5. Design and implement an assessment plan to assess one DQP Applied Learning competency (from the baccalaureate level) among subsets of students at the associate, bachelor’s, and master’s degree levels. The plan was to involve the direct assessment of student learning from curriculum-embedded assignment(s), content exam(s), portfolio reviews or any other direct assessment effort such that data collected would position the department to discuss proficiency levels of students entering their major, completing their major, and completing their master’s degree program relative to students’ ability to apply knowledge, skills, and responsibilities to new settings and complex problems.

As mentioned above, the academic departments might also have to assume responsibility for assisting with the recruitment of students within their majors and graduate programs to participate in the UW-Whitewater Assessment Center—centralized assessment efforts that would provide feedback about the Broad Integrative Knowledge and Intellectual Skills. Depending on the success of centralized recruiting efforts, each department was charged with recruiting: 30 associate level (students in their declared major who had completed 45-75 credits prior to the term they took the exam); 20 bachelor’s transfer students (students in their declared major who had completed 90+ credits before fall 2012, with at least 24 of these credits completed somewhere other than UW-Whitewater), 20 bachelor’s native students (students in their declared major who had completed 90+ credits before fall 2012, with no more than 12 of these credits completed somewhere other than UW-Whitewater); and at least 12 master’s level students (students in their program as close to completion of the master’s degree as possible) to complete each of four assessments:

- The *Critical-thinking Assessment Test* (CAT) Instrument is a unique tool designed to assess and promote the improvement of critical thinking and real-world problem solving skills.
- The *iSkills Test* is produced by the Educational Testing Service (ETS) and measures information and communication technology literacy skills through a range of real-world tasks.
- The *College Basic Academic Subjects Examination* (CBASE) is a test of general education knowledge that was developed by the Assessment Resource Center at the University of Missouri-Columbia. The CBASE assesses knowledge in four subject areas: language arts, mathematics, science, and social studies and concurrently measures three cross-disciplinary competencies: interpretive reasoning, strategic reasoning, and adaptive reasoning.
- Submission of argumentative essays to be assessed using the *Writing Matters* rubric—a rubric created by UW-Whitewater faculty and instructional staff in 2009 as a method
to assess student writing across campus disciplines. The essays submitted for evaluation were to adhere to these stipulations:

- writing would come from a curriculum-embedded assignment;
- the writing assignment was to align with a course-specific learning objective of a LEAP essential learning outcome;
- the assignment was to contain thesis-driven expository prose, 5-10 pages in length;
- the writing assignment would promote LEAP intellectual skills of inquiry and analysis, critical and creative thinking; and
- the writing assignment would make use of evidence and the documentation of sources.

These assignments were assessed using the *Writing Matters* rubric, which was designed to be used to evaluate students’ analytical writing along the dimensions of focus & thesis development, analysis & interpretation, coherence & organization, evidence & documentation, and language use & conventions.

**Changes to the Project**

There was amazingly little variation in how the activities of the academic departments varied between planning and implementation. The only deviation observed by the project director related to how the four departments approached the tasks related to discipline-based decisions about how to complete the activities. For instance, it became clear that the Psychology and Communication Departments approached the process of conducting a content analysis of the learning outcomes of departmental syllabi with a method that aligned much more closely with a social scientific methodology than did, say, the Accounting Department.

There was a recognition going into the process that securing student participation in completing the Assessment Center exams, particularly the CBASE, stood to be a challenge. While it was hoped that a centralized recruiting process would alleviate the need for the four academic departments (Accounting, Communication, Psychology, and Special Education) to become overly engaged in the recruiting process, this simply didn't prove feasible. Despite centrally orchestrated letters, emails, and even text reminders about the exams, and promises of prizes for participation, so few students were registering to complete the CBASE, CAT and iSkills, that departmental involvement became inevitable. (Recall that the objective was to recruit specific samples of students within pre-majors, majors, and graduate programs that had completed specific numbers of academic credits.)

Academic departments became VERY involved in the recruiting process, ranging from leading entire classes to take exams (often to simply capture a small percentage of the students that fit the credit requirements), to issuing extra credit points, to making individual contacts with individual students and pleading for participation. The recruiting to meet the necessary quotas became so time-consuming in departments that it often impinged on the capacity of these departments to complete their work on evaluating the areas of Specialized Knowledge and Applied Learning (at least in the time frame allotted in the project planning process). (Note, all recruitment methods were reviewed and approved through the campus IRB process.)

Finally, because of the scope of the project and the resource demands (time and money) affiliated with completing with the evaluations in the DQP’s Broad, Integrative Knowledge; Specialized Knowledge; Intellectual Skills; and Applied Learning, efforts to assess Civic Learning ceased after preliminary planning was completed in fall 2011.
Results and Accomplishments
The work of the four academic departments evaluating competencies under the Specialized Knowledge and Applied Learning categories began in summer 2012 and ran through spring term 2013. Final reports of all four departments were submitted in late May 2013 and included:

1. analyses of how each of the Specialized Knowledge and Applied Learning competencies align with the educational purposes of the department related to the various levels of learning (pre-major, major, master’s level);
2. discussed what the direct assessment projects completed by the department revealed about the student proficiency levels of students entering their major, completing their major, and completing their master’s degree program relative to the identified DQP Specialized Knowledge and Applied Learning competencies chosen by the department;
3. evaluated the efficacy (i.e., utility, accuracy, functionality) of the DQP in terms of its capacity to function as:
   a. a model that defines expected, progressive benchmarks for learning within the discipline of the department;
   b. a tool for advancing academic assessment within the department;
   c. a method for providing a common vocabulary between faculty and students and serving as a foundation for public understanding of what post-secondary institutions do; and
4. discussed what the process revealed about what distinguishes graduate-level learning from undergraduate-level learning within their department.

Across the reports of all four departments, it is clear that the academic departments found greater concordance between the learning objectives of their majors with the Specialized Knowledge competencies than they did with the Applied Learning competencies, though as will be discussed below, there is no inclination to support or adopt the competencies as currently written. In addition, based on the direct assessment work of the departments, there was significant evidence of progressive differences in learning and knowledge between associate, bachelor’s, and master’s students—though not necessarily in ways specifically aligned with the competencies of the DQP model. Departments found, in particular, uneven student performance and difficult-to-chronicle differences in student competencies in the Applied Learning area. In that regard, the DQP was not valued by the departments as a model that directly defines the progressive benchmarks for learning within a discipline of a department.

Uniformly, the four academic departments found little value in the DQP as a tool for advancing academic assessments—finding the specific vocabulary of the Specialized Knowledge and Applied Learning competencies to be too general, too vague, inaccurate, or unclear to be of value. (Interestingly, the project has enhanced departmental appreciation of the LEAP framework of essential learning outcomes.) However, the majority of the departments reported that students who reviewed the DQP model did find value in the model’s capacity to describe the arc of learning that occurs in post-secondary settings. As one department reported, there were several “ah ha!” moments for students.

Relative to the issue of what the project revealed about differences in how undergraduate experiences differ from graduate experiences at UW-Whitewater, two of the four departments found greater differentiation than others. The two departments that found the greater differences noted more extensive levels of content information, in particular, and evidence of superior writing. The two departments that were less certain about learning differences in graduate education both noted unique demographic characteristics of students enrolled in their
program. One of these programs is ostensibly a fifth-year master’s program admitting students directly from the undergraduate program to prepare them for a national certification exam. The other program noted the large number of students in its master’s program that come in with no or limited knowledge about the discipline or the profession.

The College Basic Academic Subjects Examination (CBASE) Exam (or, as one undergraduate student referred to it, the "CBEAST Exam") was administered to 396 students in fall term 2012 and early spring 2013. The CBASE was completed by 99 targeted associate level students, 83 students who were completing their bachelor's degrees (who were transfer students), 55 students who were completing their bachelor's degrees (who were native to the institution from the start of their degree program), and 74 master's level students. CBASE scores for UW-Whitewater students ranged from 40 to 560, with a score of 300 considered average by CBASE. See Table 2 for a summary of UW-Whitewater student scores by academic area and composite scores by student level.

<table>
<thead>
<tr>
<th>All Programs</th>
<th>CBASE</th>
<th>Associate</th>
<th>Bachelor's Transfer</th>
<th>Bachelor's Native</th>
<th>Master's</th>
</tr>
</thead>
<tbody>
<tr>
<td>English</td>
<td></td>
<td>270</td>
<td>280</td>
<td>263</td>
<td>293</td>
</tr>
<tr>
<td>Science</td>
<td></td>
<td>283</td>
<td>288</td>
<td>278</td>
<td>298</td>
</tr>
<tr>
<td>Mathematics</td>
<td></td>
<td>317</td>
<td>317</td>
<td>300</td>
<td>334</td>
</tr>
<tr>
<td>Social Studies</td>
<td></td>
<td>273</td>
<td>283</td>
<td>273</td>
<td>297</td>
</tr>
<tr>
<td>Composite Score</td>
<td>286</td>
<td>292</td>
<td>279</td>
<td>306</td>
<td></td>
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<tr>
<td>Interpretive Reasoning</td>
<td>2</td>
<td>2</td>
<td>2</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>Strategic Reasoning</td>
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<td>2</td>
<td>2</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>Adaptive Reasoning</td>
<td>2</td>
<td>2</td>
<td>2</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>Composite Score</td>
<td>2</td>
<td>2</td>
<td>2</td>
<td>2</td>
<td></td>
</tr>
</tbody>
</table>

Table 2. CBASE Composite Scores by Student Level

The CAT test was administered to 401 students—that included 106 of the targeted associate level students, 107 bachelor’s natives, 85 bachelor’s transfer, and 78 master’s students. A pair of two-day CAT scoring workshop was organized and faculty and instructional staff were recruited from across campus (not just the departments involved in the DQP project) who engaged in the scoring process. Scores for all eligible participants are captured in Table 3, with a maximum score on the CAT of 38. Note that while the table indicates improvements in student performance from associate, to bachelor’s, to master’s-level, the only statistically significant difference was in the performance between master’s level students and students at the associate and bachelor’s levels.

<table>
<thead>
<tr>
<th>All Programs</th>
<th>CAT</th>
<th>Associate</th>
<th>Bachelor's Transfer</th>
<th>Bachelor's Native</th>
<th>Master's</th>
</tr>
</thead>
<tbody>
<tr>
<td>Composite (raw score)</td>
<td>18.24</td>
<td>19.06</td>
<td>18.72</td>
<td>21.64</td>
<td></td>
</tr>
<tr>
<td>Composite (% of max)</td>
<td>48%</td>
<td>50%</td>
<td>49%</td>
<td>57%</td>
<td></td>
</tr>
</tbody>
</table>

Table 3. CAT Composite Scores by Student Level

A total of 418 students completed the iSkills exam, 116 were within targeted credit levels as associate-level students, 102 bachelor’s natives, 66 bachelor's transfer, and 85 master’s level. Test scores of UW-Whitewater students ranged from a low of 80 to a high of 470—with an average score of 273.7 (out of a possible score of 500). Table 4 reflects composite scores for
Finally, writing samples that fit five criteria were collected from associate, bachelor’s (transfer and natives), and master’s students in each of the four academic departments. In all 318 writing samples of students eligible to be evaluated were assessed during a week-long *Writing Matters* evaluation workshop, using faculty and instructional staff participants from across the campus in January 2013. Writing samples of 120 associate, 74 bachelor’s natives, 76 bachelor’s transfer, and 48 master’s students were scored ranging from Developing (1), to Competent (3), to Accomplished (5) in the following categories: Focus/Thesis, Analysis/Interpretation, Coherence & Organization, Evidence & Documentation, and Language Use & Convention. Table 5 reflects the composite scores and subscores among all participants—though differences, particularly in subscores, should be viewed skeptically because of emergent problems with inter-rater reliability in using the *Writing Matters* instrument.

<table>
<thead>
<tr>
<th>All Programs</th>
<th>Associate</th>
<th>Bachelor’s Transfer</th>
<th>Bachelor’s Native</th>
<th>Master’s</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>iSkills</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Composite</td>
<td>272.82</td>
<td>258.68</td>
<td>273.18</td>
<td>289.77</td>
</tr>
</tbody>
</table>

*Table 4. iSkills Composite Scores by Student Level*

Taken collectively, the results from the Assessment Center evaluations outlined above do suggest a couple of preliminary conclusions. First, *the differences between abilities of the bachelor’s and master’s is far more discernible than the differences that exist between associate and bachelor’s-level students*. This was reflected clearly in the remarks of the preliminary report prepared by the *Writing Matters* project: “…the master’s-level papers were generally recognizable because of the higher writing quality—this was especially apparent in writing fluency and complexity of thought.” Secondly, there do appear to be differences in the student performance of bachelor’s natives and bachelor’s transfer students, with the latter outperforming the former on three of the aforementioned assessments. More work is required to determine if such differences are statistically significant.

**Impact on the Institution**

This campus had adopted the AAC&U LEAP model (approved by the various governance groups on campus) approximately one year (2010) before being broached by HLC about being a part of the DQP process. Since 2010, the campus has run a series of workshops that have involved more than 350 faculty, staff, and students in integrating LEAP learning outcomes into curricular and co-curricular activities. As such, each of the departments was charged with identifying Specialized Knowledge or Applied Learning competencies from the DQP model in such a way it would inform their departmental work in assessing LEAP learning outcomes that
Impact of Project on Departments

While academic departments across campus have made progress in integrating LEAP outcomes into their departmental assessment initiatives, based on the department reports, there is evidence to suggest that this project (testing the DQP model as described above) is likely the largest, single, most comprehensive funded effort to closely review how student learning occurs at the course and program levels. All four of the academic departments participating in the project indicated that this project has made them reevaluate their curriculum, the alignment of the curriculum, and the discipline specific knowledge and applied skills they expect students to acquire.

There is little evidence from the academic department reports to suggest that the DQP model will have any impact on the work of the departments going forward (see the next question for a major reason why). However, as suggested in the final reports filed by each of the four academic departments, the process of engaging departments in the evaluation of the DQP model has had, and will likely continue to have, an impact on how these departments move forward in such areas of curricular alignment, assessment, course sequencing, and realigning learning outcomes with majors and submajors. That is, the project has given each of the four academic departments reason and incentive to explore how learning scaffolds in their curricula. Similarly, there was discussion among the departments about what this process revealed about their alignment (or lack of alignment) between the undergraduate and graduate curricula.

Impact of Project on Institutional Assessment

Perhaps most directly significant at a campus level, all of the information from the work of the academic departments and the Assessment Center will be distilled for use by the Essential Learning and Assessment Review Committee (ELARC). ELARC was established in 2011 as an administrative committee to review assessment data and other indicators related to student achievement of the essential learning outcomes and make recommendations to improve teaching, learning, and assessment. Once each year, academic colleges, Student Affairs, and other campus units send to ELARC their executive summaries of assessment data and other indicators of learning related to student achievement of the essential learning outcomes. Members of ELARC distill findings into an annual report of 6-8 highlights and recommended actions. The annual report is shared with campus administrators and governance groups for feedback, is revised as needed, and then is shared across campus to complete the annual cycle. ELARC monitors campus progress in meeting the recommended actions. The DQP data will be quite formative in discussions of ELARC in the 2013-14 cycle.

Beyond that, the project provided an explicit opportunity for the institution to test the Assessment Center concept (i.e., coordinated campus-wide administration of standardized exams and campus-designed assessments). Much has been learned through this project related to the implementation of an Assessment Center concept. For instance, it was concluded that garnering voluntary student participation in the assessment process, even when buttressed by rewards (such as prizes, extra credit, food), may be too difficult and time-consuming to reasonably and regularly implement. Preliminary discussions have begun regarding alternative methods going forward about still using an Assessment Center concept in ways that won’t require student volunteerism. The institution has begun exploring choosing a random sample of incoming freshmen, and awarding free elective credits throughout the student’s career in exchange for participation in assorted Assessment Center events and activities.
People Involved
Aside from the project director (the Dean of the School of Graduate Studies) and the Associate Vice Chancellor for Academic Affairs, each of the four academic departments involved in the project used teams of four to five faculty members, and interviewed faculty and instructional staff within their departments (approximately 50 faculty and instructional staff among all four departments). The four departments also collectively interviewed or surveyed approximately 80 students, and involved approximately 200 students (associate, bachelor’s, and master’s) in curriculum-embedded assessments of Specialized Knowledge and Applied Learning competencies. The estimated 50 total faculty involved in the project (either as an evaluator or interview subject) represents about 15% of the total number of faculty and instructional staff hired by the institution (excluding ad hoc hires). Beyond that, the project can document 695 students completed one or more of the CBASE, CAT, and/or iSkills exams, and approximately 325 students had papers assessed as part of the Writing Matters evaluation.

It is difficult to calculate the number of faculty that was involved in support of the Assessment Center portion of the project because each of the four academic departments required different numbers of faculty and instructional staff to help in student recruiting. From the available evidence, it appears that four faculty from Accounting, six faculty from Special Education, four faculty from Psychology, and approximately 10 faculty and instructional staff from Communication were involved in the recruitment process for the CBASE, CAT, and iSkills. There was also one faculty member from the Political Science Department hired to serve as the test coordinator.

This is difficult to say with full accuracy, but approximately 30 faculty and instructional staff from the four academic departments, four test coordinators, the project coordinator, and 38 faculty and instructional staff were involved in the CAT and Writing Matters workshops. That is approximately 15% of the faculty, instructional staff, and administration of the institution.

Resources Used
As suggested above, the Learning by Degrees© project was a significant undertaking—involving hundreds of individuals in many hours of data gathering, assessment work, and test-taking, and included many overload payments and release time purchases. As an estimate, from summer 2012 through spring 2013, it estimated that the 18 faculty supporting the project for the four academic departments invested approximately 4,600 hours completing departmental project work and recruiting students for Assessment Center participation. The three test coordinators for the Assessment Center exams and the director for the Writing Matters Project are estimated to have collectively invested approximately 580 hours in administering and orchestrating the scoring of the assessments. These calculations don’t include the time invested by other faculty and instructional staff in departments, the thousands of hours invested by students in completing the assessments, nor the hours of the project director or the Associate Vice Chancellor for Academic Affairs.

The financial costs of the project have not yet been fully calculated. In general, it is estimated that the institution invested approximately $189,000 for the four academic departments to complete their evaluation projects and support the recruitment of students for participation in the Assessment Center. And it is estimated that the institution spent approximately $105,000 supporting the administration of the Assessment Center work (CBASE, CAT, iSkills, and Writing Matters.)
As suggested above, information about each of the four goals that drove the *Learning by Degrees* project was gathered. Tasks were completed both within the work of the four academic departments and in the Assessment Center testing to discern differences in student learning between the associate, bachelor’s, and master’s levels. In general, the findings by the departments and the Assessment Center suggest that there are differences between the three student levels—though what those specific differences are and how pronounced those differences are vary from department to department and from exam to exam. It does seem clear that differences in student standing probably do not align with the differences in competencies specified in the DQP model. More will be said about this in Part 3.

Similarly, the results of the work completed by the academic departments and the results from the Assessment Center suggest that there are more significant differences between the knowledge and skills of master’s level students and bachelor’s students than there are between bachelor’s and associate students. The project did initiate dialogues in departments about the differences between graduate and undergraduate experiences, but clearly delineated, resonant distinctions were not emergent in the departmental reports. The ambiguity in results relative to goal #2 in the *Learning by Degrees* project have led to a commissioning of a follow-up project that will exam two issues (in preparation of the 2015-16 HLC Comprehensive visit):

1. How does master’s level learning differ from undergraduate learning at UW-Whitewater, both in terms of its intent and in how master’s students are educated?
2. What are the comprehensive learning outcomes of master’s-level education at the University of Wisconsin-Whitewater?

Further, relevant to goal #3 of the project, the results of the Assessment Center portion of the project do not answer the question as to if there are differences in performance between bachelor’s natives and bachelor’s transfer. Tables 2-5 above do suggest some differences between these two groups on the CBASE, CAT, iSkills and Writing Matters. However, preliminary statistical analyses suggest that these results are not statistically significant. Further analyses will be conducted in the months ahead.

Finally, relative to goal #4, it is safe to conclude that an Assessment Center approach to collecting institution-wide assessment data would require significant change or overhaul before further deployment. Centralized efforts at recruiting students for participation in the CBASE, CAT, and iSkills—even with convenient online registration, text reminders, offers of extra credit, and the promise of chances to win cash prizes—proved abysmal. Until departments had individual faculty recruit individual students, or instructors led entire courses into exam sessions, student participation was a challenge. A discussion has started about how to address such challenges going forward. One idea includes the creation of a randomly assembled cohort group of incoming freshmen that would be eligible to earn between 9-12 free elective credits by participating in institutional assessments during their bachelor’s careers. More thought about the logic, cost, and benefits of such a program is required.

Beyond addressing the four goals of the project, there were other lessons learned from the process. Examining the results of the Writing Matters portion of the project unearthed some significant problems with inter-rater reliability in the rubric. As Table 6 suggests, reliability scores among the 16 faculty raters were low in establishing overall ratings and in the subscore areas.
At one level, such scores suggest the need to reevaluate the utility of the organically created Writing Matters rubric as a tool to support university-wide writing assessment. There may be other generic writing rubrics that may be more useful. However, as was noted by several of the faculty participating in the project, the broad stipulations for establishing writing assignments that led to the generation of the writing samples for analysis made the assessment process particularly difficult. Some of the writing samples were from argumentative essays, others were responses to essay exam questions, while still others more project-based assignments. Evaluating the value of the Writing Matters rubric after the use of a common prompt would be fair. Further, the final report filed by the Writing Matters project director included this observation:

Faculty scorers repeatedly commented on the value of creating scaffolded, clearly articulated writing assignments—tied to progression through content over the course of the semester—with rubrics that address the requirements of the assignment and expectations of the instructor. Those writing assignments that provided clear, explicit instructions without relying on formulaic approaches produced better essays. The scoring workshop reinforced the need for engaging all faculty in learning about best practices in writing instruction so as to enable all students to become competent, even accomplished, writers.

Hence, there may be more logic in working with faculty across all disciplines to improve pedagogy when it comes to teaching writing, than to invest time and resources in locating or generating a new writing rubric.

Reliability problems with subscores on the Writing Matters rubric—problems that undergird a hesitation about drawing empirically-based conclusions regarding student differences relative to Focus/Thesis, Analysis/Interpretation, Coherence/Organization, Evidence/Documentation, and Language Use/Convention—have proven emblematic of problems with results from two other exams that were a part of the Assessment Center process. Entering the project, it was anticipated that scores on sub dimensions of the CAT exam, as well as scores on dimensions of the iSkills exam, would serve to indicate important differences in skills and abilities among the three different levels of students (associate, bachelor’s, master’s). Scoring differences among the sub dimensions on each of the Assessment Center exams (and Writing Matters rubric) were going to provide critical feedback regarding the accuracy (or plausibility) of the competencies stipulated by student level in the DQP model.

Alas, as scores were received for the CAT and the iSkills, it was learned that the subscores would not be useable as genuine indicators of student performance in those areas. Dimensions which include the ability to evaluate information, creative thinking, learning and problem solving, and communication, have not statistically proven to be discrete factors in the CAT exam—though overall scores have proven to be statistically sound. Similarly, ETS indicated that they were unable to provide subscores relevant to defining, accessing, evaluating, managing, integrating, creating and communicating on the iSkills exam. Members of the Learning by Degrees© project team will look, in the weeks and months ahead, to see if there are ways to find other statistically significant differences in scores and subscores that will
prove useful, but information about these sub dimensions (and the sub dimensions in Writing Matters) were going to be vital to our review of the verbiage incorporated by student level in the DQP model.

Finally, based on the reports received from the academic departments and the Writing Matters project, there appears to be something going on with the students’ capacity to identify, use, and evaluate evidence in argument—though that ability varies by student level. The direct assessment of an Applied Learning competency by the Psychology Department and the use of evidence and documentation in the Writing Matters project revealed, regardless of student level, various struggles using evidence to effectively make argument. In the final report filed by the Writing Matters project director, it was observed:

A majority of the 16 faculty scorers expressed major concerns over our students’ abilities to use and cite evidence. Across disciplines, students heavily rely on quotations—dropping them into the writing without introduction, integration or contextualization. They seem to be strong with summary of sources and weak at using sources to develop and support a position. Student writers recognize the need to incorporate source material into their argument, but rely on stringing quotes together to do so, rather than integrating supporting ideas into their own analysis or structure. This elementary use of evidence appears to coincide with an inability to interpret sources and synthesize new knowledge into the argument of the piece of writing. There seems to be a relationship between the two dimensions on which students consistently scored lowest: Analysis/Interpretation and Evidence/Documentation. When student writers cannot skillfully interpret source materials, they seem to suffer a companion deficiency at using and citing evidence.

This sort of information will be invaluable to the ELARC group, and helpful in defining important and resonant areas for student growth going forward.

Part 3: Recommendations to Lumina

In general, while the Learning by Degrees© project revealed among UW-Whitewater participants a strong preference for the LEAP Essential Learning Outcomes (ELOs) model, there was a recognition from the UW-Whitewater team that the DQP model represents a couple of enhancements over the campus-adopted LEAP paradigm. First, it was recognized that the DQP model’s inclusion of the Specialized Knowledge dimension accounts for a significant portion of learning that occurs in the baccalaureate majors (or specialty areas in associate degree programs) that is not accounted for specifically in the LEAP paradigm per se (as indicated in Table 1). This is significant in that more than one-third of the credits required for a bachelor’s degree may come from an academic major. That’s a lot of content, skills, and disposition development that may not be accounted for directly with the LEAP ELOs.

Further, the primary innovation of the DQP model recognized by the UW-Whitewater team as “value-added” relates to the idea of progressive learning and student development. The fact that the model captures not just the breadth of student learning, but also attempts to characterize the depth of student learning (at least as it relates to credit completion) is an important innovation. The academic departments involved in the UW-Whitewater project noted that it was the vertical nature of the model that prompted spirited and important discussions about curriculum and its, in the words of one department, “trajectory for student learning.” That same department noted, “The LEAP initiative more clearly articulates what post-secondary institutions are designed to do. We could certainly add the developmental perspective of the DQP to our ongoing work in teaching and assessment.”

Much like the feedback from many of the institutions that were in the Pathways Institutions Cohort Three, the UW-Whitewater academic departments involved in the Learning by Degrees©
project expressed the perception that the DQP model was missing key elements including, but not limited to: ethics, social learning, affective learning, and life-long learning. Admittedly, such topics could be accounted for by the DQP model’s “Institution Specific” area of learning. And there were concerns from two of the departments that work with curriculum designed around meeting professional certification standards (e.g., Accounting and Special Education) that the DQP model may not align well with their educational purposes. As one of these departments wrote in their final report, “We do not believe the DQP model, in its current state can be used to provide appropriate benchmarks for learning with accounting education.” However, as mentioned in The Degree Qualifications Profile booklet (page 5), “Those illustrations should emerge through the use of the Degree Profile and will, over time, enrich it.”

The work completed in the Learning by Degrees© project has led the UW-Whitewater team to a couple of questions and recommendations regarding the DQP model that may be formative to the model’s continued development. First, it would be helpful to clarify whether the DQP model is functioning prescriptively of what should be happening in post-secondary settings, or is the model predicated upon functioning descriptively as a chronicle of what is understood to be happening in post-secondary education at the various levels. The model seems to be doing the former, but would likely benefit from greater consideration of the latter.

**Recommendation #1**

More to the point, it is not imminently clear why the competencies listed at the various levels appear as they do or where they do in the model. It would be beneficial (especially given one of the key constituencies targeted for use of the model are academics) to be clear about the origin of the competencies outlined in the model. (There is a list of sources in the back of the Lumina Foundation booklet, but it isn’t clear what role these sources played in the creation of the model.) Is there a theoretical framework for the model—a framework that would explain why the competencies are what they are and why they appear where they do in the model?

More specifically, is the model grounded in any sort of empirical research about learning and development in post-secondary education? What are, for instance, the origins of outcomes specified at the associate level? Are they reflective of the knowledge, skills, and learning derived from research empirically examining:

1. learning outcomes defined by community, technical, or four-year colleges (in syllabi, for example) that award associate degrees;
2. employer expectations of holders of associate degrees;
3. widely articulated knowledge and skill outcomes endemic to general education curricula; and/or
4. performance differences in nationally administered standardized exams (e.g., ETS) or nationally administered certification or licensure-based assessments appropriate for associate degree holders?

Or are the competencies and their place in the model more simply a byproduct of the reasoned deliberations of four noted authorities in higher education (i.e., Cliff Adelman, Peter Ewell, Paul Gaston, and Carol Geary Schneider)? All of the above? Some of the above? None of the above? Providing evidence-based rationale addressing the inherent question—“why should I accept these as expected learning outcomes for various levels of post-secondary learning?”—would go a long way in creating a better reception of the model.

**Recommendation #2**

A second recommendation relates to the statement of the learning outcomes generally, and the use of active verbs in these outcomes specifically. Comprehensively capturing the complexity of learning that occurs in post-secondary settings through the series of statements of summative
learning outcomes—particularly in a vernacular that is readily understood by multiple constituencies (including students, faculty, employers, policymakers, and the general public)—is, to be sure, a challenge of the highest order. Three of the four academic departments involved in the project observed that students and faculty found value in the concept of progressive learning characterized by the model, but struggled to understand the specific intent of select competencies because of ambiguity arising from the terminology. Specific strictures related to the wording of competencies raised by the departments included, but were not limited to:

- What is meant by such terms and phrases as “substantially error-free,” “field” (could that mean sub-field within a discipline—is “discipline” a better word?), and “fluency” (and how does “fluency” differ from “competence”)?
- Is “fluency” at a bachelor’s level the same as “fluency” at a master’s level? Probably not, but don’t know.
- Relative to competency #10 under Specialized Knowledge (at the master’s level), does “their” refer to the student’s sources or to the sources of the theories?
- What is the difference between competencies #8 and #9 under the Specialized Knowledge area (bachelor’s level)? Ditto competencies #1 and #2 under Applied Learning (at the associate level).
- Multi-barreled competencies are not appropriate—rendering some of the competencies to be too complex to serve as single summative benchmarks for the direct assessment of student learning.
- The polysemous nature of several of the competencies led one department to conclude: “The current DQP document is almost completely inaccessible to our students (both undergraduate and graduate) without substantial interpretation and there is no way to verify whether our interpretations are consistent with the intended meanings and purpose of the DQP creators.”

To that end, the model needs much more explicit and precise conceptual and operational definitions, particularly if skill development at different levels is to be reflected in the model. This may be particularly relevant to the use of active verbs in the model. One of the departments noted at the master’s level under Specialized Knowledge, the verb “elucidates” is used to describe mastery of major theories, research methods, and approaches to inquiry. The department asked, “Is the intended meaning the same as ‘explain’ or ‘evaluate’ used to describe the bachelor’s level outcome or is the intent something different?” The department went on to list the following relevant synonyms for “elucidate”: annotate, clarify, clear, demonstrate, enlighten, exemplify, explicate, expound, illuminate, illustrate, interpret and prove.

This issue is particularly significant given the apparent importance of the active verbs in the model. “The descriptions of the learning outcomes are presented through active verbs that tell all parties…what students actually should do to demonstrate their mastery. These active verbs are deliberately cast at different levels of sophistication as the Degree Profile moves up the degree ladder” (The Degree Qualifications Profile booklet, p. 5).

Less clear is if the DQP active verbs genuinely reflect increased levels of sophistication. Table 7 visually depicts a list of active verbs culled from the DQP competencies mapped against a list of active verbs commonly associated with various learning domains in Bloom’s Taxonomy. In general, the table suggests that the competencies (characterized by the active verbs) required at each student level in DQP—associate, bachelor’s, and master’s—are quite diffuse relative to the various levels of complexity in the Bloom model. That is, the model would suggest that
associate level students are just as likely to be required to engage in synthesis and evaluative activity as master’s students are to be engaged in more simple knowledge and comprehension activities.

<table>
<thead>
<tr>
<th>DQP Student Level</th>
<th>DQP Competency Verbs</th>
<th>Bloom’s Learning Domains</th>
<th>Typical Bloom Verbs (Clemson University, 2008)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Associates</td>
<td>Assembles, Categorizes, Distinguishes, Describes, Examines, Explains, Evaluates, Gathers, Generates, Identifies, Illustrates, Offers, Organizes, Practices, Presents, Locates, Selects, Uses</td>
<td>Knowledge</td>
<td>Match, Memorize, Name, Order, Outline, Recognize, Relate</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Comprehension</td>
<td>Express, Extend, Generalized, Give, example(s), Identify, Indicate, Infer, Locate</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Application</td>
<td>Apply, Change, Choose, Compute, Demonstrate, Discover, Dramatize, Employ, Illustrate, Interpret, Manipulate, Modify</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Analysis</td>
<td>Analyze, Appraise, Breakdown, Calculate, Categorize, Compare, Contrast, Criticize, Diagram, Evaluate, Discriminate, Examine, Experiment, Identify, Illustrate, Infer, Outline, Point out, Question, Relate, Select, Separate, Summarize, Test, Model, Write</td>
</tr>
<tr>
<td>Bachelor's</td>
<td>Assembling, Arranging, Articulates, Clarifies, Completes, Constructs, Defines, Demonstrates, Develops, Differentiates, Employs, Explains, Evaluates, Formulates, Frames, Implementing, Incorporates, Judges, Justifies, Locates, Presents, Produces, Reformulates, Translates</td>
<td>Synthesis</td>
<td>Arrange, Assemble, Collect, Combine, Comply, Compote, Construct, Create, Design, Develop, Devise, Explain, Formulate, Generate, Plan, Prepare, Rearrange, Reconstruct, Relate</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Evaluation</td>
<td>Appraise, Argue, Assess, Attach, Choose, Compare, Conclude, Contrast, Defend, Describe, Discriminate, Estimate, Explain, Evaluate, Justify, Judge, Interpret, Relate, Predict, Rate, Select, Support, Value</td>
</tr>
</tbody>
</table>

Table 7. DQP Active Verbs Mapped Against Bloom’s Taxonomy

The importance of active verbs to the creators of the DQP model is quite clear. At one of the
optional sessions of the Pathways Cohort III Orientation Workshop (June of 2011), Dr. Paul Gaston was fielding questions about the DQP model. In response to one inquiry, Dr. Gaston posited that the DQP model stood to be a superior framework in supporting the assessment of baccalaureate learning outcomes (relative to LEAP) because of the robustness of the competencies leveraged by these verbs.

However, in the end it may be that the active verbs serve a different, more deleterious function—contributing to the DQP reading (in the words of one department) more like a checklist of assignments to be completed rather than a set of standards that identify progressive learning and accomplishment. In that regard, a DQP model expunged of active verbs, centered instead on more broadly defined, simply stated, specific concepts and constructs that are empirically derived from research in post-secondary education may make it a more palatable, useful, and flexible tool for faculty, and more appreciable for students and the general public.

Although the DQP model was not embraced by the UW-Whitewater departmental teams (especially relative to LEAP), the project led to a number of richly rewarding discussions within each of the four academic departments about teaching, learning, assessment and curriculum. Similarly, the lessons learned from the deployment of the Assessment Center process will be invaluable as the campus looks to centralize key elements of its assessment work. It is safe to conclude that UW-Whitewater’s engagement in the DQP evaluation project will have a significant positive impact on the university for years to come.