

Overview of the Quality Initiative

1. **Executive Summary** As a member of Cohort Three of the Pioneer Institutions of the Pathways Demonstration Project, NDSU tested the *Degree Qualifications Profile (DQP)* by asking departments to compare the student learning in their required capstone experiences with the *DQP* benchmarks for “Applied Learning.” There were no major changes to the initiative. The work was organized and implemented by a group already charged with revising General Education. This committee was chosen because capstone experiences are presently a General Education requirement and would most likely continue to be so after the revision.

The committee designed an electronic template which labeled the three bullets of “Applied Learning” at the bachelors’ level at Outcomes One, Two, and Three (*DQP*, page 18). Each clause of the bullet/outcome was treated as a separate element or response item. A department indicated if its capstone experience met one of the elements of each outcome, and if it did, which student activities in the capstone provided evidence for this. To “test” the *DQP*, departments were asked for feedback about each of the three Outcomes and were asked seven additional questions: 1) To what extent does the *DQP* provide a means to know what and how well students in your major are learning? 2) Does it help your department establish benchmarks for your major? 3) Is it the right learning for the students in your major? 4) Does your capstone have student learning outcomes that are not captured in the *DQP* outcomes? If so, please identify and explain them. 5) How could the applied learning section of the *DQP* be improved? 6) If you have an accredited program, please identify your accreditor and explain to what extent are the *DQP* outcomes compatible with those of your professional accreditation body? 7) Do you have any additional comments?

Prior to sending the electronic template to departments, NDSU distributed copies of the *DQP* to all faculty. Departments were also asked to submit copies of the syllabi for their capstones. After receiving responses from 41 departments with 65 majors, the committee used Survey Monkey to gain additional information on the capstones.

After analyzing the responses to the electronic templates and Survey Monkey along with the syllabi, committee members drew six major conclusions. First, the project encouraged faculty to reflect on the purpose and goals of their respective capstone courses and re-evaluate if current efforts reflected best practices. Second, although there was significant variety among the capstones, almost all departments were highly committed to them as showcases in which students integrated and applied their learning. Third, there were many excellent practices in the capstones that needed to be shared more widely. Fourth, NDSU needs to track capstones more systematically. Fifth, capstone courses, although part of the general education requirements, are often highly-discipline specific in their content and outcomes. Sixth, many professional programs found the *DQP* was not aligned with their accreditation requirements.

Scope and Impact of the Initiative

2) What NDSU accomplished in relation to its purposes and goals.

2. A. Background on NDSU Capstones before the DQP Quality Improvement Project

NDSU's capstone requirement was included in the General Education (GE) revision approved by the University Senate on February 22, 1993, but it only became effective for students entering in the fall of 1996. Although capstones are a GE requirement, they are totally controlled by each major or program.

In 2005 the GE Committee contacted 89 departments to compare syllabi from their capstone courses with four purposes for capstone courses commonly cited in the literature, and with six general-education learning outcomes that one might expect to find in capstone courses. The four capstone purposes were: 1) Extending the field; 2) Critiquing the field; 3) Applying the field; and 4) Comparing with other fields. The six general education learning outcomes were: 1) Effective writing; 2) Effective speaking; 3) Group work; 4) Critical thinking; 5) Effective use of the library; and 6) Values and views of life.

Based on the syllabi submitted, the 2005 report noted the following patterns:

Capstone Courses that Meet Four Capstone Purposes & Six General Education Outcomes	
Possible Capstone Purposes and Outcomes Met	Number of Departments Meeting Them
8-10	3
5-7	22
4	32
1-3	9
No response from department	22

In response to the 2005 study, a subcommittee of the General Education Committee drafted guidelines for courses to apply for certification as capstone courses. Due to turnover on the Committee, the proposed guidelines were never adopted.

In October 2011, the special task force charged with revising general education—the Core Undergraduate Learning Experiences (CULE) team—surveyed alumni, employers, faculty, staff, and students about 29 learning outcomes. Respondents were asked how well current NDSU graduates were doing on each of these learning outcomes and then how important each of these outcomes would be in the future. One of these outcomes surveyed was the capstone, described as “Completing an integrative experience (for example an internship, a lab, a seminar, a project, a capstone, etc.) as a junior or senior which requires students to synthesize and apply the knowledge and skills of their major field.” A total of 1370 people responded with response rates varying from 3.0% for students to 24.3% for faculty. The average across all groups ranked capstones as the third highest for present performance and eighth highest for future importance.

2. B. Goals and Purposes

In response to an invitation from the Higher Learning Commission (HLC) to test to what extent the *DQP* could help improve student learning, NDSU sent a team of two [the Director of Accreditation and Assessment (who subsequently retired in December 2011), and the chair of CULE (who became the next Director of Accreditation and Assessment)] to the June 2011 HLC Pathways Demonstration Orientation Workshop. The team returned with four *DQP* options, along with details of the advantages and disadvantages of each option, and presented them to the new Provost when he arrived on campus in August 2011. The four options were to: 1) compare learning outcomes in 102 bachelor's programs with *DQP*'s "Specialized Knowledge" benchmarks; 2) compare learning outcomes for one major in each college with *DQP*'s "Specialized Knowledge" benchmarks; 3) compare learning outcomes in NDSU's 183 general education courses with *DQP* benchmarks for "Broad Integrative Knowledge," "Intellectual skills," "Applied Learning," and "Civic Learning; or 4) compare learning outcomes in NDSU's required general education capstone courses with *DQP* benchmarks for "Applied Learning."

The Provost concluded that NDSU should compare student learning outcomes in NDSU's capstone courses in each major with the *DQP* benchmarks for "Applied Learning." The Provost and the two team members agreed on five goals for NDSU:

1. Engage faculty in campus conversations about student learning and specifically about the learning outcomes of the capstone experiences in their majors;
2. Develop more reflective practitioners by having faculty evaluate/review connections between capstone outcomes and proposed general education capstone outcomes;
3. Use the campus wide capstone evaluation process to promote incremental change by example;
4. Develop faculty expertise in general education and in the assessment of student learning; and
5. Find ways to harmonize with existing learning outcomes from other accrediting bodies.

The decision to compare existing capstone experiences to the "Applied Learning" benchmarks emerged when the team and Provost articulated nine advantages of this approach for NDSU:

1. It could be implemented by and build upon activities of a special task force currently revising our general education, Core Undergraduate Learning Experiences (CULE), as well as standing Committees of the Faculty Senate (General Education [GE] and University Assessment);
2. CULE could analyze an existing general education component that would almost certainly be retained in any revision;
3. The HLC team and the Provost anticipated it would stimulate campus conversations about student learning and reinforce CULE's work on revising general education because it involved a general education course currently required for each major;
4. The HLC team and the Provost hoped that the *DQP* might not only provide benchmarks for majors, but also encourage them to "reverse engineer" learning expectations at earlier milestones for their students;

5. The HLC team and the Provost hoped that evaluating their current capstone would provide departments with an opportunity to reflect on how well it served their students as an experience in which they synthesize and apply the knowledge and skills they gain;
6. The Provost wanted to capture best local practices in capstones to share across the campus.
7. The Provost selected a project with a specific focus where NDSU could demonstrate significant progress in two years;
8. The HLC team and the Provost agreed that the *DQP*'s benchmark of examining what "graduates can *do* with what they know," fit the land-grant culture of NDSU, and
9. The HLC team and the Provost agreed that this project might address some of the current concerns of the North Dakota legislature and the State Board of Higher Education about graduates having the skills they need to succeed as professionals.

The potential to use current campus initiatives in order to transform present campus-wide conversations about general education into deeper and more vigorous ones carried the day. In retrospect, the choice to examine the capstone experiences seems an obvious one.

2. C. Implementation and Activities

Comparing the *DQP*'s "Applied Learning" benchmark with NDSU's existing capstones was undertaken by the Core Undergraduate Learning Experiences (CULE) task force, whose members had previously been charged with examining and revising NDSU's general education program. CULE originally had fourteen members with faculty representing each of the colleges, plus members from Student Affairs, Library, Distance Continuing Education, and a Dean's representative. After a retirement in December 2011, CULE had only thirteen members.

After investigating various options, CULE decided to create an electronic template asking departments to evaluate their current capstone experiences by comparing them to the "Applied Learning" benchmarks of the *DQP*. They agreed to use NDSU's Group Decision Center to create and distribute the electronic template to departments and to aggregate the results. After the template was drafted, CULE piloted it with two majors: Computer Science and Interior Design. Based on the suggestions from those departments, CULE revised the template questions and drafted a cover letter for the Provost to approve, sign, and distribute.

In December 2011, the Provost's office distributed copies of the *DQP* provided by the Lumina Foundation to all faculty members. In addition, the Provost sent a hard copy of a memo to all departments asking them to respond to the *DQP* capstone electronic survey by February 15, 2012. The memo also included the completed templates from the pilot departments as examples. Finally, it asked departments to complete the following four activities:

1. First, evaluate the capstone experience or experiences currently required for your major using the template that lists the "Applied Learning" benchmarks. The template asks if a department's undergraduate capstone experience meets the elements of each "Applied Learning" benchmark, and if it does, what student activities in the capstone provide evidence for this.

2. Second, as you evaluate your current capstone, take the opportunity to reflect on how well your capstone serves your students as an experience in which they synthesize and apply the knowledge and skills they have gained by studying your field.
3. Third, test the *DQP* and provide feedback on two questions. First, “to what extent does the *DQP* provide a means to know what and how well students are learning?” Does it help your department establish benchmarks for your major? If so, does it allow you to apply “reverse engineering” to establish expectations at previous milestones for your majors (such as after accumulation of 30, 60, or 90 credits that approximate completion of the first, sophomore, and junior years). Second, “is it the right learning for our students?” Does your capstone have student learning outcomes that are not captured in the *DQP* outcomes? If so, please provide feedback on these questions in the grid at the end of the form.
4. Fourth, if your program is accredited, please use the grid at the end of the form to explain how well the *DQP* applied learning outcomes match those of your accreditor.

In an effort to engage the campus with the *DQP* process, the Lumina Foundation funded Paul Gaston’s visit to NDSU in January 2012 to discuss the *DQP* in a campus-wide luncheon. He also met with department leaders to answer their questions about the *DQP* and with CULE, the Provost, and teams from other nearby Cohort Three campuses (North Dakota State College of Science and Alexandria Technical College).

From December 2011 to March 30, 2012 CULE tracked responses from 41 departments and 3 programs (such as Women and Gender Studies) with 65 academic majors to the electronic template and collected a syllabus for each of the 83 courses [some departments have multiple capstone courses, either because they have multiple majors in the same department (e.g. Criminal Justice and Political Science), or because they have multiple degree tracks within the same major (e.g. Animal Science has capstones in Beef, Equine, Pork, and Sheep production)].

In April 2012, the Group Decision Center aggregated a 70-page report from the responses to the electronic template. In an effort to deal with all this information, three CULE members volunteered to draft an instrument for a pilot evaluation of ten responses in the summer of 2012. Simultaneously, the chair of CULE examined the template responses and syllabi to track evidence of 1) program learning outcomes on the syllabus; 2) course learning outcomes on the syllabus; 3) end products on the syllabus; and 4) end products on the template.

Based on the summer pilot studies, CULE made two decisions in fall 2012. First, in September CULE members discussed examining student work products from the capstones in order to assess the extent to which that student work met the program’s learning outcomes. They concluded that examining student work would be valuable, but it could derail CULE from its main work of revising general education. Second, as CULE analyzed the survey data about the extent to which department capstones met the elements of “Applied Learning” from the *DQP*, they realized even though it had two departments pilot the survey, some questions were not as clear as intended and there was more variation in how departments described their student work than expected.

As a consequence of the second decision, one member of CULE volunteered to use “Survey Monkey Pro” to provide additional information. Her office already subscribed to this version which allowed CULE to send individualized invitations to respond to the survey and to track individual responses. The follow-up survey asked five questions:

1. Have you revised or are you revising this capstone course since you submitted a syllabus to CULE in February 2012? (If yes, please send a copy to CULE.)
2. Does this capstone require the student to perform some form of research (i.e. literature review, data collection, laboratory research, creative/artistic endeavor, career-specific type, etc.)?
3. Does this capstone require a final project, product, or performance as evidence of student learning?
4. If you answered YES to the question above, please identify the final project, product, or performance required in the capstone from the list below. Choose all that apply. (The list was case study evaluation, educational/promotional materials, empirical research project, formal oral presentation, performance, portfolio, reflective paper, report, scholarly paper, visual medium.)
5. Do you use a rubric to evaluate the final project, product, or performance in the capstone course? (If yes, please send a copy to CULE.)

From October 23 to December 16, 2012 the faculty who responded to the survey provided information on 82 courses. Six capstone courses that had previously not been reported on the electronic template were reported on the follow-up survey and one department asked to remove two courses that had been reported as capstones on the initial electronic template. These results confirmed the decision for the follow-up survey.

2. D. Findings

With the increased participation, CULE got a more complete picture of NDSU’s current implementation of capstone experiences. The following table summarizes faculty responses to the eleven items on the initial electronic template.

Summary of NDSU Faculty Responses to the *DQP* Applied Learning Survey

Student Enrollment in Capstones (as reported by faculty)

Mean = 14 Median = 20 Range = 1-85

DP Benchmarks for Applied Learning	Yes	No	Maybe
OUTCOME ONE	%	%	%
Presents a discrete project, paper, exhibit or performance, or other appropriate demonstration that links knowledge and/or skills acquired in work, community and/or research activities with knowledge acquired in one or more disciplines;	91.78	2.74	5.48
explains in writing or another medium how those elements were combined in the product to shape its intended meaning or findings;	84.72	6.94	8.33
and employs appropriate citations to demonstrate the relationship of the product to literature in its field.	73.61	12.5	13.89
OUTCOME TWO			
Formulates a question on a topic that addresses more than one academic discipline or practical setting,	67.61	14.08	18.31
locates appropriate evidence that addresses the question,	75.0	11.76	13.24
evaluates the evidence in relation to the problem's contexts,	73.53	11.76	14.71
and articulates conclusions that follow logically from such analysis.	78.57	10.0	11.43
OUTCOME THREE			
Completes a substantial field-based project related to his or her major course of study;	60.56	25.35	14.08
seeks and employs insights from others in implementing the project;	78.57	15.71	5.71
evaluates a significant challenge or question faced in the project in relation to core concepts, methods or assumptions in his or her major field;	72.46	18.84	8.7
and describes the effects of learning outside the classroom on his or her research or practical skills.	59.7	25.37	14.93

CULE's analysis of *DQP* electronic template survey responses indicated the following patterns:

- 91.78-59.7% agreed that a component of the benchmark was met by their capstones
- > 75% agreed five of the benchmark components were met
- >60% agreed that all of the benchmark components were met
- >10% were uncertain if six benchmark components were met
- 28% have a team-based project as a major component
- 18% involve an internship, externship, or field experience
- 44% (excluding internships, etc.) engage students in "real world" projects
- 48% involved others (additional faculty, clients, community professionals, preceptors) as audience members or as additional evaluators of the student's work

CULE's analysis of syllabi from the capstones indicated that

- 87% of capstone syllabi contained student learning outcomes
- 15% of capstone syllabi specified the connection to program learning outcomes

To contextualize the aforementioned general data that indicates a widespread implementation of student learning outcomes in capstone experiences, CULE gathered additional feedback on the *DQP* (one of the requirements of this project).

NDSU faculty evaluated the *DQP*'s "Applied Learning" benchmarks as having six strengths:

1. They reflected the benefits of a comprehensive framework for evaluation, particularly in the ability to, "gauge how students can apply information from the classroom to an experience."
2. They were useful in identifying "where gaps are in obtaining feedback on the outcomes and related assessments."
3. For some departments, they closely paralleled existing evaluation of learning outcomes.
4. The outcomes were broadly aligned with professional accreditation standards (although those standards are significantly more specific).
5. Such a frame work was useful in aligning, "courses, methods, and pedagogical goals."
6. The final two *DQP* benchmarks were identified as "fundamentally the core outcomes" for the capstone in Industrial and Manufacturing Engineering.

At the same time, NDSU faculty faulted the *DQP*'s "applied learning" benchmarks in ten areas:

1. Some of the more technical disciplines (such as dietetics, engineering and business) that need to meet evaluation criteria set out by professional associations criticized the *DQP* as too general, as relying on theoretical rather than applied professional knowledge.
2. Even a traditional humanities department chair replied to the question, "Does it help your department establish benchmarks for your major?" as follows: "No. We have clearly articulated outcomes that are specific to our major; these [the "Applied Learning outcomes] are project descriptions (I wouldn't call them benchmarks; I wouldn't even call them outcomes). These seem like reasonable project descriptions, and would be useful to a department with no assessment plan in place, but they seem like a step back for departments with well developed assessment plans, clear outcomes, a good scoring mechanism in place, etc."
3. A related criticism was that the *DQP*'s outcomes seemed more appropriate for the sciences and the humanities than for programs developing "professionals with skills and knowledge needed" for problem-solving, not for advancing knowledge in the discipline.
4. A number of respondents raised concerns about the need for students to address issues in more than one discipline, citing problems of cost, evaluation, and professional accreditation standards.

5. Several faculty members thought the benchmark component of linking “knowledge and/or skills” with “knowledge acquired in one or more disciplines” was not clear. They wanted to know if this meant the actual disciplinary methodology and if the word “links” should be replaced by “use,” “demonstrate,” or “integrate.”
6. The outcome of “formulates a question on a topic” was criticized as not working well for exploratory or creative projects and for not fitting with how research is done in mathematics. It was also not clear to some faculty what it meant to “formulate a question.” This may account for the fact that this component had the highest percent (18.31) of “maybe” responses.
7. The outcomes could be clarified. The phrase “a substantial field-based project” was particularly confusing. Did this mean “field research” as contrasted to research based on scholarly sources or did it mean research in the student’s field of study? The lack of clarity may explain why only 60.56% of the respondents agreed this outcome was part of their capstone.
8. More concrete examples of the outcomes could be provided, in particular specific examples from various fields.
9. The outcomes are too broad to be assessed by a single program or department. (This criticism may reflect the fact that we did not provide sufficient context for the *DQP* survey by holding more campus meetings.)
10. The outcomes do not address important areas such as oral presentations and teamwork.

The Survey Monkey implemented at the end of 2012 provided the following additional information about capstone courses at NDSU:

- 13% had revised or were revising their syllabi
- 88% require research
- 97% require a final product, project, or performance
 - 57% require a formal oral presentation
 - 34% require a report
 - 26% require a case study evaluation
 - 24% require visual medium such as an art work
 - 23% require an empirical research project
 - 23% require a scholarly paper
 - 22% require a portfolio
 - 15% require a performance
 - 6% require educational or promotional materials
- 45% use a rubric to evaluate that product, project, or performance

There is a widespread use of capstone experiences, with a wide range of demonstrated products; however, there is little agreement on how these capstones align with the *DQP* benchmarks.

3) What worked and what did not during implementation

What worked:

In retrospect, there were many aspects of this process that worked well. There were two positive structural features. First, it involved a committee (CULE) that was already formed and working well together with a diverse expertise from different areas of the University. The committee was working on GE revision and capstones are an essential part of the GE experience. Second, selecting the capstone courses as the focus of the *DQP* appeared to be the most manageable of the options on the table.

More importantly, the conversation about the process engendered reinforced the value of assessing capstone experiences; there were five positive outcomes for departments and the faculty from the process. First, because they had to answer questions related to their capstones, departments realized they needed to think more about the actual strengths and weaknesses of the capstone. Second, CULE saw examples of this thinking about the capstones in responses from two departments which indicated that as a result of this process, they are rethinking the approach to the capstone for their program and will continue to review the course/experience. This project afforded them a new view of the capstone for their needs. Third, fourteen percent of responders said they were revising or had revised their syllabus for the capstone course. Fourth, completing the survey encouraged faculty to think about outcomes and outcome related evidence. Finally, because faculty are quite busy, this gave them the incentive to take time from their schedules to think about what outcomes should be included in their capstone courses.

Additionally, there were three gains for the campus as a whole. First, because the campus offers many different types of capstone experiences (i.e., field experiences, final projects/papers, internships, etc.) the follow-up survey was designed to better identify the different types of capstones that are offered within the various NDSU departments. The follow-up survey better prepared the campus to gather important information, including, but not limited to, delivery method, class duration, number of students enrolled, if the experience was an individual or team project, and if the experience was associated with any accreditation board. Third, the survey instrument was a means of gathering current syllabi and capstone rubrics to create a library of best practices.

What did not work:

Lack of Centralized Reporting. There were two fairly large problems CULE encountered. The first was caused by NDSU's lack of centralized information on capstones. Because NDSU had no central reporting instrument or database for identifying the capstone courses for each department/program, it was difficult to know or determine if the original list of courses was accurate. The procedure for collecting information during the process required intermittent

revision, as departments were unclear about to whom they should send their capstone information. Consequently, CULE is still not sure how complete the information is and if it has information on all the capstones on campus.

Implementation Strategies. The second large problem was caused by CULE's implementation strategy. Perhaps CULE should have employed other mechanisms to engage faculty before implementing the *DQP* exercise, rather than relying on the seminar by Paul Gaston. It might have been better to follow up on Gaston's presentation with departmental meetings before CULE opened up the electronic template for departments to respond to. In Carol Geary Schneider's words, we pursued the "subdivide and get it done strategy" common to many campus experiments with the DQP and this had "the unintended consequence of obscuring the DQP's intention to frame a more integrative and cumulative design for college learning."¹ In addition to these large problems, the process encountered the minor glitches that happen in any complex system. Six courses were new responders to the follow-up survey. Twenty departments had to be contacted multiple times to respond to the follow-up survey before they did so. Some department faculty had left NDSU, while other departments did not have an identified a department head at the time and consequently did not respond.

4) The impact of the initiative, including any changes in processes, policies, technology, curricula, programs, student learning and success that are now in place in consequence of the initiative

A great deal of time and effort was devoted to this quality initiative over the past two academic years. CULE was sidetracked from its main focus on revising GE in order to discuss how to organize and implement the *DQP* exercise. While this bifurcated task complicated CULE's GE work, it did help them develop and implement a series of original surveys, and provided a test run for collecting and analyzing these kinds of surveys. Further work is planned.

Addressing specifically the impact of the *DQP* initiative, including any changes in processes, policies, technology, curricula, programs, student learning and success that are now in place, as a consequence of the initiative, CULE notes five specific outcomes:

1. It allowed NDSU faculty and staff to evaluate how their capstone courses fit into the goals and requirements in terms of NDSU General Education, with a potential to change and improve those courses.
2. It caused NDSU faculty and staff to reflect on the purpose and goals of their respective capstone courses and re-evaluate if current efforts reflected best practices.
3. It stimulated conversations about student learning and caused faculty to reflect on student outcomes in terms of capstone efforts.

¹ Carol Geary Schneider, "Afterward: The DQP and the Assessment Challenges Ahead" to Peter T. Ewell, *The Lumina Degree Qualifications Profile (DQP): Implications for Assessment*. (National Institute for Learning Outcomes Assessment, January 2013) p 26.

4. It resulted in more complete University records of active capstone courses and the goals/activities of those efforts.
5. It encouraged the faculty to distill best practices in their capstones

At this time CULE has few specific results to report as far as specific changes in processes, policies, technology, programs, or student learning and success that were developed as a result of the *DQP* study beyond the surveys and analytic skills the committee developed. CULE can report that an impact in the curriculum with 13% of faculty revising their capstone syllabi.

5) Tools, data, or other information that resulted from the work of the initiative.

Please see Appendix A for both the “Applied Learning” benchmarks electronic template and the follow-up survey which CULE developed.

CULE learned about the following best practices in capstones

- Internships (5 examples)
- Public presentations or exhibitions (4 examples)
- Traditional senior seminars (3 examples)
- Senior thesis—individual study (4 examples)
- Real world experiences (13 examples)
- Rubrics for evaluating capstone projects (7 examples)

6) The biggest challenges and opportunities encountered in implementing the initiative

Lack of Time. CULE faced three major challenges during the implementation process. First and least surprising, was the lack of time on a campus; the faculty and administration have recognized for quite a few years that everyone is stretched too thin. CULE members realized this issue from the beginning, as indicated by their observation that the “scale of the undertaking may lead to resistance from overburdened chairs/heads.”

Lack of Clarity and Coherence in Capstone Experiences. Second, because NDSU offers a wide range of capstone courses/experiences, the capstone experiences lacked clarity and coherence. The breadth of capstone structure and format seems problematic both conceptually and in terms of how NDSU brings students into the process. It is unclear exactly who is responsible for both inculcating awareness of this goal and assisting the synthesis of the knowledge and practices. It is also not clear if there is anyone beyond the department level who is in charge of this process.

Diversity between Professional & Traditional Liberal Arts Disciplines. Third, the wide variety of disciplines at NDSU led to an apparent gap between professional/skills disciplines and more traditional/liberal arts disciplines in understanding two components of the “Applied Learning.” The first gap was the differences with respect to the word “field,” particularly whether it refers

to a physical location, a spatial metaphor for the discipline, or both. The second gap was the seeming conflict for some between problem solving from theoretical knowledge.

This project provided CULE and the campus with at least seven opportunities. First, the *DQP* process gave departments a chance to gather data and reflect on processes already in place. Second, because NDSU currently lacks a framework that combines departmental assessments into a campus conversation, a process like the *DQP* can supplement and amplify good assessment already happening. Third, the *DQP* and the consequent conversations have the promise of aligning the different purposes of the university (teaching and research) in ways that count. Having a synthesizing general education assessment exercise like the *DQP* would enable the Scholarship of Teaching and Learning to have more value (something claimed in particular corners of NDSU). Fifth, if done well, the *DQP* process can help departments align their department goals, disciplinary accreditation goals, and general education goals. Sixth, the diverse capstone experiences provide exciting laboratories that allow NDSU to discern what best helps students integrate and synthesize knowledge across their college career. Finally, as NDSU continues to develop its research capacity, a focus upon a synthesizing undergraduate experience could enable the campus community to find new ways to value undergraduate education. The *DQP* process could potentially provide that synthesis.

Commitment to and Engagement in the Quality Initiative

7) The individuals and groups involved at stages throughout the initiative and their perceptions of its worth and impact.

Individuals and Groups Involved:

Over 200 individuals were involved to some degree with this project. NDSU's Provost J. Bruce Rafert provided the leadership and key resources to support the project. He regularly highlights it as one of NDSU's recent achievements. The bulk of the work was undertaken by the Core Undergraduate Learning Experiences (CULE) task force described on page three. The staffs of NDSU's Group Decision Center and its Office of Registration and Records were essential to identifying capstone courses and deploying the electronic survey on the *DQP*. The 44 heads or chairs from programs and departments with capstones and the approximately 125-150 faculty who were involved in discussing and completing the original or the follow-up survey provided the bedrock of this project.

Perception of worth and impact:

CULE had been appointed by the previous Provost in 2010, to examine and revise general education at NDSU. Just as CULE began to make headway with this charge, the Higher Learning Commission invited NDSU in June 2011, to participate in the *DQP* quality initiative. Members of CULE were reluctant to take on this project fearing it would divert attention from their true purpose and delay general education revision at NDSU. The fact that HLC's invitation to participate in the *DQP* project would greatly help with NDSU's successful reaccreditation served

to convince CULE members to participate. CULE members acknowledged upon completion of the project that the *DQP* project stimulated reflective thought among departments about aligning student learning outcomes with the capstone experience and linking course activities in the capstone to evidence of student learning.

8. The most important points learned by those involved in the initiative.

There were five key points learned by those involved in this initiative. First, the process itself of examining the capstone courses within a conceptual framework was useful to many departments as an exercise in reviewing their courses and curriculum. Second, in the view of many professional programs, the *DQP* is too general to very useful and fails to articulate with the requirements of their professional accrediting bodies. Third, majors and departments more traditionally associated with the liberal arts appeared to find the *DQP* framework most useful for assessing their capstone courses. Fourth, capstone courses, although part of the general education requirements of the University, are often highly-discipline specific in their content and outcomes. This probably contributed to the lack of connection with the *DQP* which many professional programs perceived. Fifth, given the wide diversity of programs in a land-grant university, a limited test of the *DQP* using capstone courses made the process more manageable (and probably feasible) than a complete curriculum review.

9) The human, financial, physical, and technological resources that supported the initiative.

The human resources supporting this 20-month project are noted above in the section on individuals and groups involved. At a minimum, the financial resources include:

- Enumerated financial support
 - Release time (1 class/semester for 2 semesters) for CULE's chair before he became the new Director of Accreditation, Assessment, and Academic Advising (@\$7,400 total)
 - Travel to HLC Pathways Workshops for third team member
 - November 2011: \$1396.88
 - April 2012: \$726.92
 - Paul Gaston pedagogical luncheon in January 2012: \$1563.25
 - CULE meals with Paul Gaston: \$401
- General financial support
 - Fifteen percent time of the previous Director of Accreditation and Assessment from June 2011 to December 2011.

- Twenty percent time of the new Director of Accreditation, Assessment, and Academic Advising from April 2012 to April 2013. This person chairs CULE.
- Administrative support from the Office of Accreditation, Assessment and Academic Advising from April 2012 to April 2013.
- Miscellaneous office supplies from the Office of Accreditation, Assessment and Academic Advising from June 2011 to April 2013.
- Technological Support
 - Administration of Survey Monkey Pro.
 - Implementation by the Group Decision Center.

Plans for the Future

10. Plans for ongoing work related to or as a result of the initiative.

These plans fall into three broad areas: 1) work directly related to capstones, 2) GE revision, and 3) assessment and accreditation.

Continuing to work with the capstone courses, CULE will collect the best practices from the capstone syllabi and template responses, verify them with the departments, and share them with the campus. This study revealed that NDSU needs better mechanisms to track student learning in capstones. Although departments report that they are meeting the “Applied learning” benchmarks in the majority of the capstone courses, NDSU really has no systematic evidence of what students are actually learning in the capstones. Not surprisingly, the study also revealed that NDSU needs a better mechanism for assessing common learning across the disciplines. Finally, based on our NSSE data, NDSU needs to improve its communication with students about the capstone requirement. When asked about a “culminating senior experience (capstone course, senior project or thesis, comprehensive exam, etc.),” the percentage of the seniors who responded that they “do not plan to do” one, even though this is a general education requirement embedded in each major, was 16% in 2005 and 2007 and 11% in 2009 and 2011.

This work will also be continued in the GE revision process CULE is coordinating. First, CULE will use the benchmarks of “Broad Integrative Knowledge” in constructing its new GE model. Second, CULE will rely on the information gained from the study to inform the description of the characteristics of a capstone experience in the new GE model. Third, CULE and the GE Committee will likely use the *DQP* benchmarks in “Analytical inquiry,” “Use of Information Resources,” “Engaging diverse perspectives,” “Quantitative fluency,” “Communication Fluency” and “Applied learning” as guidelines during the implementation phase of the new GE. The last area this work will continue is accreditation and assessment. First, for its upcoming accreditation, NDSU will need evidence for HLC Criterion 3, sub-component B.3. “Every degree program offered by the institution engages students in collecting, analyzing, and communicating information; in mastering modes of inquiry or creative work; and in developing

skills adaptable to changing environments.” The University Assessment Committee has decided to rely on the capstone information collected by CULE for evidence that programs engage students in these learning activities. Second, with the encouragement of the Provost, the University Assessment Committee has discussed using the *DQP* as a framework for campus assessment. Finally, the Director of Accreditation, Assessment, and Academic Advising will employ the *DQP* benchmarks in “Specialized Knowledge” for discussions with departments about their learning goals as part of the assessment and accreditation processes.

11. Describe any practices or artifacts from the initiative that other institutions might find meaningful or useful.

- Other institutions may find the electronic template asking departments to evaluate their current capstone experiences by comparing them to the “Applied Learning” benchmarks of the *DQP* useful.

APPENDIX A: “Applied Learning” Benchmarks Electronic Template and Follow-up Survey

UNDERGRADUATE CAPSTONE INFORMATION

Department and Course Number	Course Title	Major or Program	Credits	Class size	Pre-requisites	Offered fall semesters? (Y/N)	Offered spring semesters? (Y/N)

Please email the class syllabus to Larry.R.Peterson@ndsu.edu.

Please designate one person to complete this template based on consultations with appropriate members of your department.

Please note that it is not necessary for all capstone experiences to include all of these outcomes.

DP Benchmarks for Applied Learning	Yes	No	Maybe	Evidence from your capstone experience
OUTCOME ONE				
Presents a discrete project, paper, exhibit or performance, or other appropriate demonstration that links knowledge and/or skills acquired in work, community and/or research activities with knowledge acquired in one or more disciplines;				
explains in writing or another medium how those elements were combined in the product to shape its intended meaning or findings;				
and employs appropriate citations to demonstrate the relationship of the product to literature in its field.				
<i>Do you have any feedback about this Outcome?</i>				
OUTCOME TWO				
Formulates a question on a topic that addresses more than one academic discipline or practical				

setting,				
locates appropriate evidence that addresses the question,				
evaluates the evidence in relation to the problem's contexts,				
and articulates conclusions that follow logically from such analysis.				
<i>Do you have any feedback about this Outcome?</i>				
OUTCOME THREE				
Completes a substantial field-based project related to his or her major course of study;				
seeks and employs insights from others in implementing the project;				
evaluates a significant challenge or question faced in the project in relation to core concepts, methods or assumptions in his or her major field;				
and describes the effects of learning outside the classroom on his or her research or practical skills.				
<i>Do you have any feedback about this Outcome?</i>				

FEEDBACK ABOUT THE <i>Degree Qualifications Profile (DP)</i>	
<i>To what extent does the DP provide a means to know what and how well students in your major are learning?</i>	
<i>Does it help your department establish benchmarks for your major?</i>	
<i>Is it the right learning for the students in your major?</i>	
<i>Does your capstone have student learning outcomes that are not captured in the DP outcomes? If so, please identify and explain them.</i>	

<i>How could the applied learning section of the DP be improved?</i>	
<i>If you have an accredited program, please identify your accreditor and explain to what extent are the DP outcomes compatible with those of your professional accreditation body?</i>	
<i>Do you have any additional comments?</i>	

NOTES: These outcomes are drawn directly from *The Degree Qualifications Profile (DP)* from the Lumina Foundation. For our regional accreditation, NDSU is testing how well these help us evaluate and improve our student learning. We will also use this information in our general education revision process. If you have questions or comments, please contact Larry Peterson at 231-8824 or Larry.R.Peterson@ndsu.edu.

1. Please enter the course prefix, number, and title of your capstone course.

Capstone Prefix

Course Number

Capstone Title

2. Have you revised, or are you revising, this capstone course since you submitted a syllabus to us in February 2012?

☐ Yes - Please email revised syllabus to larry.r.peterson@ndsu.edu

☐ No

3. Does this capstone require the student to perform some form of research (i.e. literature review, data collection, laboratory research, creative/artistic endeavor, career-specific type, etc.)?

☐ Yes

☐ No

4. Does this capstone require a final project, product, or performance as evidence of student learning?

☐ Yes

☐ No

CULE Capstone

5. If you answered YES to question #4 above, please identify the final project, product, or performance required in the capstone from the list below. Choose all that apply.

- ☐ Case Study Evaluation
- ☐ Educational / Promotional Materials
- ☐ Empirical Research Project
- ☐ Formal Oral Presentation
- ☐ Performance
- ☐ Portfolio
- ☐ Reflective Paper
- ☐ Report
- ☐ Scholarly Paper
- ☐ Visual Medium (Art work, creative/artistic endeavor, video/digital clip, etc.)

Other (please specify)

6. Do you use a rubric to evaluate the final project, product, or performance in the capstone course?

- ☐ Yes - please email rubric to larry.r.peterson@ndsu.edu
- ☐ No

7. Do you teach another capstone course at NDSU in addition to the one identified above?

- ☐ Yes - You will receive a duplicate survey to complete for each capstone course taught
- ☐ No

Please identify the name of other capstone course you teach.