

A Decade of Formal Assessment at the University of Washington¹

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*We shall not cease from our exploration
And the end of all our exploring Will
be to arrive where we started And
know the place for the first time*

T.S. Eliot

EXECUTIVE SUMMARY

This report describes the history, impact, and future directions of formal assessment at the University of Washington. Its purposes are to satisfy our requirement to inform the State of Washington Higher Education Coordinating Board and our desire to inform the campus community of assessment activities and outcomes.

The report begins with a discussion of the background and history of the assessment movement in the State. Formal assessment began with the statewide study of standardized testing of Sophomores, an important result of which was to redirect activity away from the development of common statewide accountability measures. In its place, assessment strategy turned toward tailoring strategies to individual campus needs with the primary goal of improving instructional programs, an orientation that has continued to the present.

Principles guiding assessment and implementation strategies are described, followed by an overview of the impact of assessment. Specific improvements in curriculum and courses guided or influenced by assessment research are described for departmental majors, writing, quantitative and symbolic reasoning, distribution requirements, special programs, diversity, graduation rates and time to degree, accreditation, and forging links among institutions.

The report ends with a discussion of future directions which are seen as serving three major and interrelated goals: 1) the development and measurement of accountability or performance indicators, 2) the assessment of new and continuing programs to improve their effectiveness, and 3) the contribution of assessment to the University's strategic planning by providing relevant data on quality and efficiency.

¹ This report was initially written to satisfy an assessment reporting requirement of the Higher Education Coordinating Board.

BACKGROUND AND HISTORY

One might date the beginning of formal, state-mandated assessment in the State of Washington in 1987 with the Higher Educational Coordinating Board master plan. Campus wide implementation of formal assessment at the University of Washington began in the summer of 1989 when the state legislature earmarked \$400,000 to be used for doing assessment during the 1989-91 biennium. Each of the other public baccalaureate institution received the same amount as did the State Board for Community College Education. Each of the state's community colleges was subsequently allocated \$50,000.²

In its general usage, assessment is a term whose meaning is very similar to evaluation.³ We use the term here somewhat more restrictively as the systematic gathering, interpretation, and use of information about student cognitive, behavioral and attitudinal outcomes for purposes of improvement. As such, it is clear that assessment was not newly introduced to UW in 1989. Rather, the Office of Educational Assessment and its predecessors, the Bureau of Testing, the Office of Student Ratings, and Institutional Educational Research, had already enjoyed a long and distinguished history. Students had been rating the quality of their classes and instructors since the 1920's, and the graduates had been systematically surveyed to determine their satisfaction and job placements since 1978. Further, all academic programs underwent serious periodic program review and many underwent periodic reaccreditation by external agencies. And, of course, the learning of students in courses was evaluated via tests, papers, homework assignments, etc. Finally, faculty exhibited their research interests and expertise through conducting research in their classrooms to improve their teaching.

This is not to suggest that the funded state assessment mandate made no difference. Throughout this paper we will try to show that it has made an enormous difference in the extent and impact of assessment and in the culture of the institution. It was not, however, created from whole cloth. It had a solid base upon which to work.

In 1987 when the Higher Educational Coordinating Board master plan called for the following:

During 1987-88 and 1988-89 institutions will conduct pilot studies to assess the usefulness and validity of nationally normed tests of:

- *communication*
- *computation*
- *critical thinking*

that would be administered in the last term of the sophomore year.

A committee of institutional personnel and board staff will make a recommendation on the advisability of requiring such a test.

If the pilot test of this kind proves appropriate, there will be a recommendation that it be adopted; if a test of this kind is not appropriate, the Board will look for an alternative to provide a systematic evaluation of institutional performance.

² This funding has continued up through the current biennium, with some erosion.

³ Gillmore, G. M. (1994). On Distinguishing Assessment and Evaluation. OEA Research Notes N-94-1.

An inter-institutional task force was named for both the baccalaureate and the community colleges, and the two groups worked in close harmony to conduct extensive empirical research involving both faculty and students from 14 campuses. The study and its results have been described in detail elsewhere.⁴ Of significance for this report are the ways in which it set the course for formal assessment activities at UW and at other state institutions. Indeed, this research proved to be a watershed for the direction of assessment for three reasons.

1. The planning and conduct of the study took two full years. This elapsed time allowed extensive discussion among faculty and administration within campuses and across campuses and between higher education and HECB personnel. For example, HECB Chairman Charles Collins visited the UW campus and met with the faculty assessment committee for a very productive discussion. In short, the elapsed time allowed us all to learn about assessment and about our mutual desires for improved education in the state.
2. Thanks to the good will of many people, the heroic efforts of a few people, and the existence of what some perceived to be a common enemy, the pilot study was conducted as a fully cooperative effort between the baccalaureate and two-year institutions and among the various schools within each institutional type. This high level of cooperation and trust set the ground work for what has continued to be a highly cooperative and mutually helpful effort. The UW has benefited greatly from colleagues in other institutions and hopefully has benefited others as well in meetings on specific topics and at the grander annual statewide assessment conferences.
3. Most importantly, the pilot study set the direction for assessment away from the extensive use of standardized tests whose primary use would be to compare institutions toward campus-specific programs based on the institution's own culture and mission and a greater emphasis on improvement relative to accountability. At UW and other campuses the emphasis changed from what would have been a highly centralized student testing program with minimal faculty involvement, to a highly decentralized orientation that aimed to involve a wide circle of faculty and students.

PRINCIPLES GUIDING ASSESSMENT

Since the inception of earmarked assessment funds, UW has adopted a model of assessment that includes centralized activities, most notably surveys of the student body, and distributed activities, most notably end-of-program assessment whose locus of activities is the academic department. Early on, a set of eight principles guiding assessment activities were distributed to the faculty. These principles are as follows:

Educational Goals. To be a positive influence on the improvement of a program's curriculum and instruction, assessment strategies must be focused on valued and important educational goals. The beginning point of any assessment should be the determination of what those goals are.

Faculty Involvement. Faculty must find the results of the assessment valid, credible, and useful. Otherwise, assessment information, no matter how high the quality, will not be used. Thus, faculty involvement is essential in defining important goals, planning activities, and interpreting results.

⁴ The Validity and Usefulness of Three National Standardized Tests for Measuring the Communication, Computation, and Critical Thinking Skills of Washington State College Sophomores. 1989.

Existing Structure. Assessment activities should be built into existing structures insofar as possible. We can ill-afford to make wholesale curricular changes in order to merely accommodate assessment, and the requisite time demands of so doing might in fact detract from teaching efforts. Rather we need to take advantage of the curricular planning efforts which departments have already struggled through over the years.

Assessment Results. At least as much consideration should be given to the actions to which the assessment results might lead as to the measures themselves. We should avoid developing programs which have no reasonable chance to lead to improvement. It is quite a different story if the assessment results indicate no improvement is needed. Assessment strategies must include mechanisms for faculty to interpret results and make changes in the curriculum.

Scope. The scope of assessment activities should match the goals that are valued. In the case of end-of-program assessment these goals should extend beyond knowledge of the content of the major to include such components as skill in communicating the content and principles of the discipline and skill in quantitative reasoning and problem solving required by the discipline.

Methods. No one method is likely to yield a full picture of the effects of the curriculum on students. Various methods, both quantitative and qualitative are necessary, including, where feasible, actual student performance data.

Student Effort. The assessment movement nationally has been seriously hampered by circumstances in which students put minimal effort into taking tests which have no direct consequences for them. If possible, it is best to embed assessment in activities for which students will be graded or otherwise rewarded for good performance. Assessment activity must be planned such that it is apt to be taken seriously by students.

IMPLEMENTATION STRATEGIES

Faculty Involvement. As stated earlier, UW started from a position of some strength in having a well-regarded Office of Educational Assessment and periodic program review and accreditation programs in place. However, it was immediately clear that assessment would operate on the margins without greater direct involvement from faculty.

We viewed the most promising avenue to faculty involvement to be through end-of-program assessment, because faculty's strongest identification is with their discipline. In regard to undergraduate education, this identification is most firmly played out in the education of majors. Faculty care deeply about the students who will be practicing their discipline. The goal was for all departments from which more than a few students receive bachelor's degrees annually to engage in end-of-program assessment and for the leadership for this activity to come from the department's faculty. This strategy has been immensely successful as leadership has passed from a few key faculty to faculty in essentially all appropriate departments

UW faculty are among the most talented researchers in the world. Thus, we tried to judiciously pair assessment funds with existing faculty interests to do high quality research on student outcomes. Briefly, three examples will be offered here. Major funds were devoted to two faculty in the Department of English to study student writing, using portfolios of classroom work. The result was locally credible and nationally

significant research that continues to have an impact on writing instruction across disciplines and on policy. Secondly, a faculty committee was appointed to study quantitative and symbolic reasoning (QSR). It was chaired by a mathematics professor, well-known for instruction of non-math majors, who was given release pay to develop instruments for measuring QSR. Again the results were highly credible and heavily influenced policy toward QSR instruction. Finally, a Sociology professor performed research on embedding QSR skills instruction in a very large Sociology course and showed that student abilities can be improved as a result.

Consultation with faculty. The size and complexity of UW presents at once terrific opportunity and daunting challenge. Direct "hands-on" faculty involvement is essential, but so is faculty guidance. Early on, a faculty assessment committee was appointed consisting of faculty who showed interest in assessment. While these faculty were talented and engaged as individuals and were able to give helpful advice, there was a sense that they were rather isolated and did not represent the entire faculty. We moved to a different and better strategy which was to use existing faculty senate councils as advisory panels. We consulted with the Faculty Councils on Academic Standards, Instructional Quality, and Student Affairs. The assessment coordinator sits as a permanent guest on the former two councils and reports periodically to all three.

Centralized Efforts. Some important assessment activities are better performed as centralized activities while maintaining faculty involvement and consultation. These activities are those for which either the issues tend to be cross-campus and not idiosyncratic to certain units or those for which unit-specific information can be offered more efficiently through a central source. Examples under the cross-campus category include the annual surveys of entering students and of seniors conducted by the Office of Educational Assessment, and research done on factors affecting graduation rates and time to degree completion. Another example is evaluations of the UW's Freshman Interest Groups.

A perfect example falling in the second category is the survey of graduates that is done every other year by the Office of Educational Assessment. In this survey, questionnaires are sent to all graduates during a particular year at all degree levels. Recent alumni are asked to indicate their current employment and educational status, including their job title and/or educational program, to evaluate their UW education based on a number of factors, and to evaluate the services of the UW Center for Career Services. The results of the survey are sent to all academic departments, schools, and colleges, with summary data on their students and relevant comparison groups. This information is used for counseling students and for evaluating unit programs and curricular changes. The results for all departments and survey items are sent to the Center for Career Services for counseling and evaluating their programs. Finally, the results of the evaluative items are used by UW as one of its accountability measures and to monitor the effects of curricular change.

Another category of centralized work done for the benefit of particular units is special research that makes use of methodological expertise and data sources to address particular issues. The Office of Educational Assessment often helps units develop surveys, compile mailing lists, and capture and analyze responses. For example, it is currently assisting the Arts and Sciences Associate Dean for Humanities in conducting a survey of students and faculty concerning language programs - what is taught, what should be taught, and reasons for taking courses. Earlier, studies have been done on predicting success in 100 level math courses that have led to changes in prerequisites by the mathematics department.

THE IMPACT OF ASSESSMENT

Assessment at UW has enjoyed an impact that is significant, widespread, and growing. Clearly, specific improvements resulting from assessment activities provide the strongest case for institutional benefit, and in the following sections, we attempt to delineate a number of changes that have been guided or influenced by assessment results. Before proceeding, we offer three caveats.

1. Assessment has become very much a part of the institutional milieu. Evaluation of the efficacy of existing programs and especially of new programs is expected and demanded. Nonetheless, UW is a very large, complex organization. Seldom are policy and curricular decisions attributable to a single cause or piece of evidence. Thus, where we indicate assessment-related changes below, the reader should understand that they are put forth as changes that have been influenced in development of the need and/or in specification of the direction by assessment research.
2. It is well-understood that assessment is a continuous process. Change does not necessarily imply improvement or that no further change is needed. But assessment also takes time - it is not a job for the impatient. Each new change is like another experiment whose results must be comprehended and interpreted and whose implications for further action must be determined. In this report, we tend to list changes with evidence of improvement where available. In many cases the next study is not yet done. Nonetheless, a case can be made that change, based on assessment data, is much more likely to be beneficial than detrimental or harmful. Further, an institution that is dynamic and self-analytical is to be preferred over one that is staid and self-satisfied. The assessment movement has contributed to the former perspective at UW.
3. Finally, the changes that result from assessment tend to be incremental rather than dramatic and happen throughout the campus in classrooms, in departmental committees, in campus wide committees and in a variety of additional places. It is impossible for all of the changes happening across this huge campus to be known. Even if it were possible, it would be impractical to list them all because of space limitations. Thus, in the sections to follow we at best offer examples; good examples to be sure, but we are doomed to failure with regard to fully portraying the scope and impact of assessment.

The sections to follow do not perfectly mirror the six areas of assessment originally mandated by the Higher Education Coordinating (HEC) Board in their May, 1988 resolution. Rather, the structure is chosen to best present actual assessment activity. Elements within each HEC Board category will be found throughout.

END-OF-PROGRAM ASSESSMENT

Since the inception of formal assessment, over 60 UW departments, representing virtually all degree-granting undergraduate programs have participated in end-of-program assessment. In the earliest years, grants were given to a small number of departments to do pioneering work in this area. At present, occasional small grants are given to specific departments to assist them in a particular aspect of their work. However, in the main, assessment activities are funded through regular departmental budgets and by use of existing resources including faculty time. Units are aided to some extent by centralized resources. In particular, the survey of graduates provides each unit with a report on its students and relevant comparison groups and all departments have access to the database of the Strategic Analysis Group.

At the end of the last biennium, in a report to the HECB we were able to list *70 distinct changes* in curricula and instruction that came about at least partially as a result of end-of-program assessment information. In reports from departments covering the first year of the current biennium we can list well *over 100 additional specific changes* that have been made to improve student learning and satisfaction. Departments are changing course sequencing and requirements (e.g., Art, Atmospheric Sciences, Comparative Literature, Computer Science and Engineering), adding new courses (e. g., Economics, Geography, and Italian), and changing existing courses to meet the needs of students and potential employees (e.g., Fisheries, Forest Resources, Germanics, Mathematics). Other changes ranged from those designed to better meet student educational needs and hasten the time students take to graduate (e.g., Botany, Prosthetics-Orthotics, Economics, and Social Work) to major alteration of entire curricula (e. g., Dance, Mechanical Engineering, Music, and Nursing). A dominant theme throughout these reported changes is giving students greater opportunity for "hands-on" and integrative experiences through capstone courses, senior theses, and team projects.

The results of the survey of graduates provide some evidence for the positive value of these changes. The average rating of the item "Quality of instruction in your major field" has risen steadily and significantly from 3.89 for the 1989-90 graduating class to 4.09 for the 1995 graduating class (on a 5 point scale from "not at all satisfied" [1] to "very satisfied" [5]).

A brief synopsis of the development of assessment activities and their results are provided for five widely scattered academic units, chosen to represent the breadth of educational options that UW offers students. By presenting just a few examples in depth, it is our hope to illustrate both the implications of the long-term process of end-of-program assessment in which these departments are involved and some of the scope of assessment activities across campus.

Geography. In 1992, the Geography department convened its undergraduate education committee to identify learning objectives for their majors and to identify specific assessment measures that would indicate whether these objectives were being achieved. The learning objectives they agreed upon included quantitative reasoning and statistical analysis, proficiency in using and producing maps, graphs, and charts, strong writing skills, general geographic knowledge and specialization in one of four areas of concentration. The department already had an end-of-major exit survey in place as well as internship sponsor and student evaluations from those students who participated in internships. It proposed to improve its existing assessment program by improving the design, administration and evaluation of the exit survey; improving the return rates and evaluation of internship evaluation forms; and implementing other measures.

By 1993, the department had improved its exit survey and analyzed the results. These indicated that many Geography majors delayed graduation because they weren't able to register in time for required courses and they showed high student demand for analytical and writing skills, career preparation, and for more innovative and interactive teaching. A year later, the department had acquired far more specific information about the skills in which their majors were proficient and those which required further development. They planned to address the areas in need of improvement by reorganizing the Geography curriculum to include more integrative course experiences; more systematic and explicit identification by students of learning goals and outcomes; and more flexible requirements emphasizing the complementary and sequenced development of analytical skills across the curriculum.

The redesigned Geography major implemented in 1995 was designed to promote three program outcomes: information management skills, qualitative and quantitative analysis skills, and the framing of researchable questions and research design. Some of its major features included a new "Tutorial for Majors" course focusing on the structure of the major and the connections between the discipline, the curriculum and career development; a curricular compass designed to help students navigate the geography curriculum; a new departmental Home Page on the World Wide Web,⁵ and a set of prerequisites and required courses designed to force students to be more uniformly armed with the statistical and mapping/analytical skills necessary for succeeding in upper-division courses. The department has also expanded its 200-level course access, expanded its Service Learning program, and expanded its career guide entitled *What You Can Do With A Degree in Geography*.

Physics. The Physics department initiated its involvement in end-of-program assessment by taking steps to strengthen its existing assessment measures. These included strongly encouraging seniors to complete exit surveys and to attend individual advising sessions with faculty members at the end of their undergraduate careers. The sessions are used both to counsel individual students and to assess how well the Physics program prepares its students. The department also proposed to evaluate independent research projects conducted by students and to undertake a full curriculum review.

By 1993, the department had made substantial progress in improving its assessment measures and had begun to gather findings. Based on senior exit surveys and interviews, the department learned that a number of students would have appreciated more information for new or prospective majors about faculty and facilities in the department and about career options for a physics major. The department proposed to respond to this criticism by holding an annual open house for new and prospective majors and by increasing faculty support for the Society of Physics Students. The department also designed new, required courses, "Independent Research" and "Seminar on Current Problems in Physics", which would include writing and oral presentation requirements that would provide further opportunities for assessment.

Finally, the department began conducting its curriculum review. The curriculum review led to a restructuring of the introductory calculus-based Physics series that included the addition of weekly pretests. The pretests provide the faculty with information about the students' grasp of concepts, form the basis of a seminar discussion, and provide a measure of teaching effectiveness

As the result of a dialogue initiated in 1994 with undergraduate students about their concerns with the Physics program, the department learned that students were interested in a mentoring program and in the option of a minor in Physics. The mentoring program was begun in spring 1995 and paired individual students with faculty members. A proposal for a minor in Physics with three different tracks (Physics Education, Experimental Physics, and Mathematical Physics) has been submitted to go into effect by autumn 1997.

The department has also responded to student requests for more "hands-on" experiences with computers and modern laboratory equipment by upgrading the computers in the introductory mechanics laboratories to Pentium status, adding new equipment and more modern experiments to several lab classes,

⁵ <http://weber.u.washington.edu/~geogdept/>

purchasing new equipment for non-major Physics courses, and making new computerized projection capabilities available in the new lecture halls.

Psychology. The Psychology department established an Assessment Committee that decided to assess four aspects of the major program: 1) student skills including problem-solving ability, writing, verbal communication, and quantitative skills; 2) ways the program challenged previous ideas about the world or about how students think about life; 3) ways the program is useful in students' interactions with other people, citizenship; and 4) preparation for careers and graduate study. To conduct this assessment, the department proposed to have graduating seniors complete a newly designed exit questionnaire, conduct in-depth interviews with randomly selected groups of graduating seniors, and survey alumni at least five years after graduation.

1993 findings from these assessment measures indicated that students were satisfied with most aspects of the major program including the quality and variety of the courses, the faculty members, course requirements, the Psychology Advising Office, and most of the skills they learned. Students voiced concern about large class sizes, lack of space for student laboratories and TA offices, and inadequate opportunities to practice writing and spoken communication skills. Furthermore, the department found a significant difference between its BS students and its BA students. BS students tended to take heavier academic loads, spend more hours per week in outside employment, have post-graduation career goals, and desire more challenge and faculty recognition of their motivation.

The department is still investigating ways to address these and other issues such as the desire among students for improved computer literacy. In the meantime, it has made several changes including revising its junior-senior Honors program, registering students earlier in their careers for required statistics and laboratory classes, requiring new majors to attend an orientation session, and offering a second laboratory class for evening degree students.

Music. The School of Music was one of several campus units that participated in initial pilot assessment projects (1990-91). Most of the conclusions drawn from this project concerned juries, short individual performances given by each student before the assembled faculty of his or her division and evaluated by these faculty members. The department recommended continued use of a newly designed jury form by all divisions, videotaping of all juries, an increase in the frequency of juries to two per year, consistent application of the requirement that all students either perform juries each time they are held or undergo evaluation by similar procedures for comparable performances, and further investigation of the possibility of instituting an exit exam to be taken by all music students prior to graduation.

Following the pilot study, the School of Music initiated a comprehensive restructuring of the core requirements for the Music major. In addition, the jury form was revised to require not only the jury results but also a written record of the repertoire studied by the student in each quarter and a copy of the printed program for each recital given by the student to be filed in the Advising Office. The School also planned to give placement tests to entering freshmen and to students at the end of the first year of major-level theory.

By 1995, the new core curriculum was approved and implemented. The new program was designed to improve and expand training in "musicianship" and to reduce the amount of required course work in music theory and history so that individual programs and students could tailor the remaining credits to their

needs. Revisions included restructuring the Music Theory and Music History courses and instituting placement tests for Music 119 and 201, introductory courses in musicianship and theory.

After the new curriculum had been in place for a year, the faculty had already agreed to make certain revisions such as including a different text for the first term of theory and separating musicianship from theory in the pre-core course so that students who do well in one area but not the other could be more flexibly accommodated. The School also reanimated a regional Theory Consortium to exchange views with teachers of music theory in community colleges and other regional institutions and to smooth the path for transfer students by devising junctions between the different curricula.

Nursing. The School of Nursing has undertaken the most extensive end-of-program assessment among undergraduate programs at the UW, culminating in a 1996 award presented by the Office of Educational Assessment "in recognition of a distinguished history of excellence in assessment programs leading to improvement of the education of undergraduate nursing students." The School of Nursing began developing its end-of-program assessment program as a participant in one of the assessment pilot projects and in response to new National League for Nursing Accreditation Criteria.

In fall quarter 1992, the School of Nursing implemented a new BS program based on previous assessment activities and began assessment of the new curriculum. Components of the assessment program included constructing an ORACLE data base research platform that would link assessment information with the School of Nursing's data base and expanding the demographic data voluntarily requested from students. The School administered Symptoms of Stress Inventory (SOS) and Functional Ability Scale (FAS) questionnaires to its students and analyzed the results. Twelve faculty members who taught courses in the first level of the new curriculum and twenty students were interviewed concerning their experiences with the new curriculum and suggestions for improvement. Portfolios of student writing assignments were developed and used to assess the integration of writing skills in the curriculum. An alumni survey was administered to graduates. Finally, a Seed Grant was received to assist in the assessment of the "Connected Learning" course designed to foster interaction among students and faculty, demonstrate connections between different courses, and promote writing.

In 1994, the School of Nursing collected and reviewed student papers and projects from senior capstone courses in order to determine the extent to which students fulfill program expectations with regard to critical thinking, written communication, and therapeutic interventions. Student responses to videotaped vignettes were also used to assess these goals. As a result of the review of student papers, a consultant from the Center for Instructional Development and Research assisted faculty in refining assignments, bringing them in line with course objectives, and promoting the expected outcomes from student papers. Improvements in student writing resulted from this process.

Results from the SOS and FAS surveys led to the continued employment of two part-time counselors within the School of Nursing who are available for crisis and personal counseling and academic tutoring services. In addition, the School applied for a grant to provide support for ethnic minority students in the form of mentoring, intensive counseling, and transitional pre-transfer coursework.

Other recent changes made in response to student reactions to the new curriculum with its focus on community health include expanding some course content such as pharmacology, adding elective courses for more depth in specific health problems, and better integrating the clinical experience with families into senior intensive courses. Finally, the specialized writing assistance and peer tutoring

available through teaching assistants in the Office of Academic Programs has been increased. The School of Nursing's assessment program has been remarkable in terms of both the wide range of assessment methods employed and the scope of substantive changes that have resulted from these activities.

WRITING

The amount, quality, and development of student writing skills have been the subject of a great deal of assessment research. The major work has been in the form of a very ambitious four year study of actual student writing. All UW course-related writing was collected for approximately 100 students during their freshman and sophomore years. A sample of juniors and seniors of approximately equal size participated in an equivalent study over the two subsequent years. Not only was all of the writing of these students collected and analyzed, each student was interviewed about his/her writing once each quarter, and participants were asked to write reflective essays at the end of each year. A second freshman/sophomore portfolio study, somewhat scaled back in scope, is currently wrapping up.

Questions about writing quality have also been included in various surveys of seniors, entering students, and alumni, and a faculty survey about student writing has been conducted.

There have been three significant results of the writing research. First, proficiency is demanded in three basic skill areas: writing, quantitative and symbolic reasoning (QSR), and foreign languages. The UW had two committees working on significant revisions in the general education curriculum including writing proficiency requirements, the Faculty Council on Academic Standards and a blue ribbon committee within the College of Arts and Sciences. The former worked on this issue for two years, the latter for one. The significant sweeping changes in the writing requirements based on these committees' recommendations were heavily influenced by the reports of the freshman/sophomore and the junior/senior Writing Studies and by various survey responses. The committees were also influenced indirectly in that many of the members had participated in portfolio workshops.

Assessment efforts have shown that it is important for students to write early and write often. Yet, under the previous requirements, our research found that students were taking many of their writing courses late in their program. Furthermore, these requirements were being met in a relatively small number of classes. A consistent but surprising result of our research was that many students wished for more writing opportunities. The new requirements significantly expand the number of classes and the means by which students can meet the requirements. The goals of the change are for more faculty to share in the teaching of writing and for students to do more writing. We are now in the process of collecting evidence regarding the impact of the changes on writing frequency.

Secondly, a number of faculty portfolio workshops were held in which faculty read a sample of portfolios, including the reflective essays, and then came together for an afternoon of discussion. Follow-up surveys of these faculty indicate that these sessions made a significant change in the way writing is taught, assignments are constructed, and feedback given in a number of classes. We estimate that over 2000 students benefit annually by the teaching of the faculty who participated in the workshops.

Finally, the junior/senior writing study focused on writing in the discipline. Perhaps the most provocative result was as follows: ". . . the types of papers juniors and seniors write and the writing experience that they have are shaped extensively by the students' majors . . . Writing practices and demands from

students' senior year in high school through their senior year in college are only consistent in the English major. All other majors require kinds of writing that students have almost no experience with as seniors in high school and little experience with as freshmen and sophomores."⁶ This result has influenced the instruction in many departments. In particular, the psychology department did an extensive follow up study of the writing of their majors and has recommended a new writing curriculum that is now being discussed by the department's curriculum committee. The College of Engineering is mounting a significant study of their own with the goal of revising its writing curriculum.

Finally, we again have evidence from our series of surveys of graduates that writing instruction is improving. Bachelor degree recipients' rating of their satisfaction with UW's contribution to their growth in writing effectively has increased from 3.60 (1989-90) to 3.82 (1995) on the five point scale.

QUANTITATIVE AND SYMBOLIC REASONING

An ad hoc faculty Quantitative and Symbolic Reasoning (QSR) Committee developed tests of student QSR skills and administered these tests to a stratified sample of seniors. The results showed that significant numbers of students were graduating with sub-standard QSR skills; thus, the requirement did not appear to be working. In interpreting the disappointing results, the committee recommended that QSR skills be "taught across the curriculum" in discipline oriented classes. At the time of the study, satisfying the QSR requirement required a student to pass one of twelve courses. Following the QSR Assessment Committee recommendation, the faculty Senate Council on Academic Standards and the College of Arts and Sciences Blue Ribbon Committee on General Education recommended a revision in the requirement, moving it more heavily into the majors and making many more academic departments responsible for student proficiency. This change was adopted by the faculty senate.

We have also conducted a multi-year study of teaching QSR skills in the context of a very large introductory Sociology class. Instructional units were developed which included both lecture and quiz section components. To test the efficacy of the approach, we administered pre and post tests on the students' ability to apply quantitative principles to actual sociological data. The results have been very positive. Clearly, students learned valuable QSR skills in the context of a large, substantive class. These modules are now a regular part of the course, affecting about 1000 students annually, and the basic approach will be used elsewhere.

DISTRIBUTION REQUIREMENTS

Previously, distribution requirements were structured such that they were being met by courses comprising a small portion of the university's rich and varied curriculum. Furthermore, many students were required to take a series of so-called linked courses. Our assessment research found that while the linked courses were intended to give coherence to the curriculum, students often saw no relationship among them. Furthermore, the problems with enrolling in sets of courses often slowed progress toward a degree. Under new requirements passed by the faculty senate, students continue to have to include breadth in their general education course selections; however, they are able to choose from a large array

⁶ Beyer, C. and Graham, J. (1994). The Junior/Senior Writing Study: 1991-1993. OEA Report 94-2.

of courses. Early evidence suggests a positive impact as students are tending to complete their degrees in less time from matriculation.

SPECIAL PROGRAMS

One of the lessons learned over the course of formal assessment at UW is the importance of being opportunistic. Nowhere is this lesson more evident than in assisting new and developing programs. In this era of tight budgets, UW has been remarkable in the extent to which programs to enhance the undergraduate experience of students are begun and expanded. Because of limited resources, the assessment of these programs has taken on even greater importance. The assessment data are used to help decide whether programs should be expanded or contracted and how programs should be modified to enhance effectiveness.

Extensive evaluation, both quantitative and qualitative, has been applied to Freshman Interest Groups (FIGs). FIGs are small groupings of first quarter freshmen who take the same classes and meet weekly with a peer advisor or faculty member. Research showed that FIGs improve student performance and retention rates. This result led to their steady expansion such that approximately two-thirds of the entering freshmen are now members of a FIG group. In addition, all FIG students are surveyed each year to evaluate specific components of the program and the seminar leaders. The results of these surveys are carefully analyzed and used to make further programmatic improvements. Similarly, a smaller number of Transfer Interest Groups (TRIGs) are available for new transfer students each fall. Research has also shown these groups to be effective in reducing attrition and improving graduation rates. Thus, they also are being expanded and they are being improved through regular participant surveys.

Evaluations of the Freshmen Seminars, a program that was started in the Fall of 1993 for the purpose of allowing new students and faculty to come together and learn in an intimate setting, showed that both faculty and students were very favorably disposed toward the courses and saw great benefit. Hence, the Freshman Seminar program continues with enthusiastic support. During the current academic year we project that at least 45 courses serving 670 students will be offered.

The UWired program is also aimed at new students. This program was implemented during the 1994-1995 academic year and has included a strong assessment component from its inception. It began as integrated year-long instruction to three FIG groups in use of computer technology for research and instruction. Assessment results showed it was valuable in enabling students to productively use the educational resources that technology provides, but it fell short of providing adequate curriculum development support for faculty. Over the subsequent years, the program has evolved to provide one quarter of instruction in computer usage in all FIG groups (over 1200 students). Further, the faculty who teach FIG students are given extensive support for making use of technology in direct instruction and in requiring work from students that is consistent with their newly gained technological skills. Additionally, in response to student-expressed access problems two large computer labs have been created to support the FIG computer-based instruction and instruction in other innovative classes. In response to faculty needs another lab has been created for course development activities.

During the early fall for the last two years, UW has provided an extensive four week Bridge Program for new athletes and high-risk Educational Opportunity Program students. This program enjoys heavy involvement of faculty and has been assessed with surveys of the participants, the results of which are distributed to the entire instructional staff. In addition, the subsequent academic success of students will

be compared to earlier cohorts who did not have the benefit of this program. Early data provides evidence of significantly improved academic performance, thus encouraging the program's continuation. Student evaluations have been used and will continue to be used to modify the program.

The New Faculty Fellows program provides training in teaching for new faculty, both in an intensive ten day period prior to their first UW classes and with seminars and mentoring throughout the year. This program is operated and instructed by senior faculty. In its first two years of operation, it was open to about 25 new faculty in several colleges. Assessment results have shown that the participants highly value this program and find it of great utility in improving the quality of their teaching and in enhancing their success as UW faculty more generally. Thus, the program was expanded to include all new faculty this year and was attended by more than 60.

DIVERSITY

Increasing the diversity of the faculty and student body has been a long-term goal of the UW. Recently attention has also been turned toward transforming the curriculum to improve coverage of and openness to diverse points of view and matters of American pluralism and multiculturalism. With assistance from the Ford Foundation and the National Fund for the Humanities, 60 faculty have been offered extensive training in transforming their courses. Assessment of the impact of these programs has been integral, but it has taken place mostly on a course by course basis. However, the average rating of recent graduates' satisfaction with the UW's contribution to their growth in *Understanding differing philosophies and cultures* has risen dramatically, from 3.33 for the 1989-90 graduating class to 3.66 for the 1995 graduating class (on a 5 point scale).

To achieve some of the above goals, a debate raged among the faculty and students over several years concerning whether there should be a Cultural and Ethnic Diversity course graduation requirement. To aid the discussion, assessment research was conducted on several related topics. To provide information from students enrolled in courses that might satisfy such a requirement, a questionnaire was developed and administered to twelve classes. The purpose of this questionnaire was for students enrolled in the courses to assess how much they learned and how much they value a set of important CED-related outcomes. To determine the feasibility of a CED requirement, simulations were performed to determine how many 1993-94 graduates would have met the requirement had it been in effect during their tenure. In performing these simulations we assumed that taking and passing any one of a set of nominated courses would have met the requirement for each given student. To provide evidence of the attitudes of the seniors, questions about the need for and value of courses on cultural and ethnic diversity were included on the 1994 and the 1995 senior survey.

From this research, the Faculty Senate was able to assess the probable impact of the requirement on student learning outcomes and the feasibility of the requirement given existing course availability. After much debate, it was decided that the existence of a requirement would not best serve achievement of the intended goals. Rather an approach of developing greater numbers of courses across the curriculum that would achieve these goals was encouraged, with academic units being given the responsibility for this development. The cultural and ethnic diversity requirement debate represents an excellent example of decisions informed by assessment research.

GRADUATION RATES AND TIME TO DEGREE

Over the life of formal assessment, a great deal of research has been focused on graduation rates and time to degree. As these issues receive more salience from the legislature, the research is becoming of greater importance. To briefly summarize, we have surveyed beginning students on their expectations of obtaining a degree and the length of time it will take. We have asked seniors who expect to take more than four years to graduate for ratings of various reasons why this is so. We have done research on the academic and demographic correlates with persistence and time. For example, we know that changing majors adds time and that students who live at home while attending school tend to take longer than those who live in fraternities or sororities. Area-specific studies of reasons for delayed graduation have been done as a part of end-of-program assessment, and centrally produced data on average graduation time have been made available to departments. We have also conducted efficiency studies and learned of areas of particular inefficiency (e. g., transfer students who earn Bachelor of Science degrees).

Many academic departments have restructured their curricula and course offerings based on data that students were delayed because of problems getting courses. For example, Zoology, Microbiology, Botany, Psychology, History, and Fisheries have increased access to their courses to help students graduate more quickly, most College of Engineering departments have decreased the number of required credits for graduation, and Dance and Social Work have improved academic advising. The senior registration priority system was put into place to address the same issue. As mentioned earlier, distribution and proficiency requirements were changed to both enhance educational quality and to eliminate barriers to timely graduation. These changes seem to be having a positive impact as UW graduation rates have steadily increased and time to degree has steadily decreased over the last decade. However, we also have ample data to indicate that institutional factors are only part of the reason for attrition and longer degree times and that further improvements are going to be very difficult beyond a certain point.

ACCREDITATION

Programs continue to undergo periodic review consistent with HEC Board guidelines and many academic units also are reviewed every seven years by outside accrediting bodies. These reviews include evaluation by scholars outside the institution and are taken very seriously at all levels. Units use assessment to satisfy the information needs of the reviewers, and these information needs also motivate and direct assessment activity.

Significantly, the university as a whole underwent its decennial review by the Northwest Association of Schools and Colleges Commission on Colleges in 1993. Work on the 475 page self-study document, *the theme of which was undergraduate education*, and the campus visitation which followed focused campus attention on the quality of the undergraduate experience. It is clear that UW has become a pace setter for what has come to be expected of all institutions undergoing accreditation by the Northwest Association of Schools and Colleges Commission on Colleges. The strength of the UW undergraduate program and of assessment activities was attested to in the reviewers' final report.

The excellence and strength of the University is evidenced in a multitude of ways and by way of commendation we . . . note: . . . Recognition of the importance of undergraduate education and the campus commitment to emphasizing it and improving it.

*The quality and appropriateness of educational assessment at UW place it above many of its peers.*⁷

FORGING LINKS AMONG INSTITUTIONS

Early in this document, we drew attention to the fact that an unanticipated benefit of conducting the research on standardized testing of sophomores (communication, computation, and critical thinking) was the development of a strong spirit of cooperation among the institutions, both two-year and four-year. This spirit of helping has continued among assessment coordinators and faculty. It is most clearly evidenced by the annual assessment conferences, attended by well over 300 people, and the annual baccalaureate institution assessment colloquy. In addition, meetings of faculty and staff around such diverse topics as math curriculum, teaching writing, remedial education, and time to degree measures have been more effective because a foundation of mutual respect has been built and because assessment has given us a common language and a base of knowledge.

FUTURE DIRECTIONS

In an earlier report,⁸ we suggested that one could see three phases in the assessment movement at UW. *Phase one* concentrated on standardized testing and its focal point was inter-campus comparisons. Work during this phase was carried out by small inter-institutional committees and its activities had little direct impact on UW or other institutions except to arouse suspicion, discomfort, and distrust among administration, faculty, and state government. The driving force behind phase one activities was institutional improvement by way of accountability. *Phase two* essentially began in 1989 with a dramatically different focus. The HEC Board offered institutions freedom to develop assessment programs within broad areas according to their own goals and resources, with primary emphasis on institutional accountability by way of improvement. Major campus activity involved developing specific assessment programs and selling assessment to the campus community as a valued and worthwhile activity. In *phase three*, assessment is integral to campus planning and evaluative activities. Having reached substantial agreement about the importance and necessity of assessment, the overarching issue is how to expand assessment's role in the institution's strategic planning by guiding efforts toward enhancing educational effectiveness and successfully managing undergraduate education.

In a large institution with a complex organizational structure, the entire campus does not operate within the same phase with regard to assessment. What assessment has accomplished thus far has been to shine lights in dark corners, cause the administration to rethink priorities, and force faculty to face problems. It has compelled the campus community to look at problems that we have ignored before and has aided in formulating consensual solution paths. In looking ahead, what has been seen as the developing phases of assessment now appear to be concurrent goals. The future challenge may lie in fruitfully bringing the tools and orientation of assessment to bear on accountability, improvement, and strategic planning in a consistent manner, such that to pursue one is to pursue all.

⁷ Northwest Association of Schools and Colleges Commission on Colleges: Evaluation Committee. University of Washington, Seattle, Washington, April 26-29, pp. 2, 32.

⁸ Introduction, 1993-95 University of Washington Assessment Plan to the Higher Education Coordinating Board. November, 1993.

Accountability. The UW is a public institution and as such has an obligation to be answerable to its many constituents: students, parents, citizens of the state, legislators, the federal government, etc. Ironically, quality and efficiency in higher education may be easier to achieve than to demonstrate because intended and valued outcomes are complex and defy easy measurement. Indeed, UW leaders welcome being accountable but have found past accountability measures to provide an overly simplistic and often misleading representation of a complex montage.

In moving from phase one to phase two, the focus of assessment shifted from standardized outcome measures and inter-institutional comparisons to the demonstration of resulting authentic efforts toward improvement. However, demonstrating accountability via stories of improvements alone is no longer sufficient. The institutions and the HEC Board have been explicitly charged with developing accountability indicators, and the assessment coordinators are an important part of the team in both the development of these indicators and in their application. This obligation presents two very difficult challenges that require assessment research at the highest level of thought and quality. First, it is important that the measures are indicative of good organizational behavior. Poor measures are those that merely reflect surrounding events (e. g., the state of the economy) or those showing "improvements" in institutional activities that actually decrease educational quality. We need to find valid, credible measures that reflect valued outcomes and that reinforce valued behavior.

Second, we need to take care that efforts toward accountability do not detract from educational improvement and strategic planning. There are at least three dangers here. First is time alone. We cannot afford to spend large amounts of time on accountability issues if this work is not also contributing to other goals. A second danger is that of losing faculty interest and involvement. Initially, it was important to emphasize improvement to gain support from faculty for assessment. If it looks like State interest and the reward structure will not extend beyond simple-minded accountability measures, institutions may resort to minimal compliance, lowest level of accountability, and again begin to erect fortresses against true cooperation with the State. The third danger is the flip-side of the need for measures that lead to good behavior. If the accountability measures that are used by the State to judge the quality of the institution are inconsistent with the assessment goal of improved educational effectiveness, we will end up working at cross purposes with ourselves. The likely result is that we will shove accountability off into the corner, only to dust it off at the last possible moment to fulfill annual reporting requirements. The stakes are high on this issue.

Improvement. Assessing on-going and new programs will continue to be important in order to improve effectiveness, as well as for providing data useful for accountability and strategic planning. The HEC Board resolution of May 1989 included six areas in which assessment should be performed. Further, at the beginning of each biennium we have been required to submit our assessment plans for the entire biennium.

Currently, the six specific areas seem less relevant than an emphasis on assessing student outcomes within a developmental framework over the students' entire college career, and after. In addition, there has been an evolving shift in emphasis from the assessment of continuing programs to the assessment of new programs as UW attempts to grapple with how to improve educational quality in the face of issues such as student access, shrinking resources, diversity of the student body, and new technology. The emphasis on new programs does not come at the expense of assessing continuing programs, which is on-going and thereby requires less attention than in the past. Rather, the change in emphasis comes from the fact that not only are there more new initiatives, but assessment is playing a much larger role in

these initiatives. Assessment expertise is being called upon early in the planning and at all phases of the implementation. This thrust necessitates that assessment planning over an entire biennium be flexible. It is very difficult to plan for a biennium at any kind of detailed level. For assessment to be meaningful, it must be opportunistic. This opportunism will become even more important as assessment moves into strategic planning.

Strategic Planning. There are two compelling and highly related reasons for assessment to become fully involved in strategic planning. First, important questions of "educational effectiveness" extend far beyond undergraduate student learning outcomes. As faculty and administrators raise new and complex questions about institutional functioning, they need the data behind the outcomes, and they need help with interpreting those data to inform their thinking. For example, to appraise general education outcomes adequately, one must understand students' course access problems and course-taking patterns. Secondly, in this era of shrinking resources, we recognize the need to continue to enhance the quality of the education that students receive with no growth in resources and persistent growth in competing demands. Greater efficiency alone is not satisfactory: questions of quality must be continuously addressed.

UW is well-positioned to advance significantly and successfully, and assessment is well-positioned to play a critical role. The University Strategic Analysis Group (USAG) has been formed. It is composed of eight members from around the campus including the *assessment coordinator*. The overriding purpose of USAG is to enhance UW's capability to gather and analyze information that permits strategic efforts in maintaining excellence and moving toward strengths. We have already made progress in such areas as access and enrollment, program evaluation, curriculum management and departmental responsibility, planning and budgeting procedures, and accountability, both internal and external. Central to the efforts of USAG is a relational database that contains data essential for addressing management questions. Included in the complete data set are student transcripts, faculty courses taught, departmental expenditures, evaluative ratings, research citations, faculty awards, etc. Among the goals of the group is to make these data readily available to all decision-makers. Overlaying this work is the explicit recognition of the importance of quality and accountability in strategically positioning the UW for the future.

Thus, we conclude that the future direction of assessment needs to rest firmly on three legs: accountability, improvement, and strategic planning. Each of these areas needs to support and reinforce the other. The future appears both daunting and exhilarating.