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Development, Progress, and Accomplishments
of Institutional Assessment at
Western Washington University
1990 to 1996

(Report 1996-02)

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Introduction

The original purpose of the higher education assessment movement in the State of Washington was to improve the quality of programs and provide performance accountability. These basic tenets have changed little since 1990. There are, however, two things that have changed. For one, because of assessment Western is a better school today than it was six years ago. For another, the scope of assessment activity at Western has broadened remarkably.

Yet assessment did not just begin at Western in 1990. Before the statewide mandate for assessment, Western was already carrying out assessment activities. For instance, program reviews were being conducted, as were end-of-program assessment through capstone experiences. Some alumni surveys had been conducted, and in-coming freshmen surveys had been administered about every four or five years. The Junior Writing Exam was in place, as was the Math Placement Test. After the formalization of assessment, these activities provided a valuable basis from which to begin a much more encompassing and thorough approach to assessment. For instance, surveys on in-coming freshmen had begun in 1971. Findings from these surveys have given assessment researchers a rich statistical base for comparative longitudinal analyses.

In its fledgling stages, Western Washington University's Office of Institutional Assessment and Testing (OIAT) simply gathered information. A Student Tracking System was established and tapped for its wealth of data, and numerous surveys were conducted. To ensure that assessment findings reached an audience befitting them, technical reports and data memos were written and distributed widely--to selected university administrators, college deans, State of Washington assessment coordinators, and appropriate Higher Education Coordinating Board (HEC Board), Office of Financial Management (OFM), and Council of University Presidents personnel. Additionally, summaries of OIAT reports were published in Western's faculty and staff newsletter, called FAST.

That basic function of collecting useful information continues to be a primary focus of assessment activity at Western. Indeed, OIAT researchers have gathered and continue to gather so much data that eventually they created the Assessment Data Bank (ADB), a vast and remarkable collection of survey and study findings. The ADB is regularly up-dated and constantly referenced and cross-referenced. The ADB includes findings from surveys and studies of students, faculty, staff, and administrators; of alumni, employers, and would-be employers of Western students; of non-matriculated former students, students admitted to Western who chose not to enroll, students who are the first in their family to attend college, and students participating in special programs such as Access and University 101. The ADB contains findings from analyses of English 101 writing samples and Fairhaven College student portfolios. The ADB contains findings

from reports comparing various cohorts of native and transfer students. The ADB contains findings from reports tracking longitudinally the changes in students between their freshmen and senior years. The ADB is one of the only sources of information on parental income levels, and has been a favorite source of that data by Washington State's Office of Financial Management. The ADB contains findings on retention and graduation rates for an array of cohorts, including males and females overall, male and female athletes, male and female ethnicities, native and transfer students, and in- and out-of-state students. Most importantly, the ADB is readily accessible. With it, OIAT researchers can access an amazing array of information sources with relative quickness and ease.

By providing evidence that changes in current programs and processes, or that entirely new programs and processes were needed, assessment findings began to inform decision making at Western. Soon a pattern emerged that would rapidly become the paradigm of the OIAT's activities. The pattern worked, and continues to work like this: as initial assessment studies informed recommendations for new programs and/or processes, new assessment studies and surveys were commissioned to provide support for these new programs and processes, and to measure their effectiveness. Currently, assessment findings have been incorporated into nearly all facets of the University's purview: administrative, student services, and curricular. Assessment efforts inform the largest to most modest tasks. At Western, no new program can begin, nor can old programs continue without an assessment component.

One area in which assessment has proven particularly valuable is that of enrollment management. In 1990, the Enrollment Management Group was established to work with the Colleges, Admissions, and the Registrar to better monitor and predict enrollment trends, and to enhance the coordination of access to majors and progress towards degree completion. This group relied and continues to rely heavily on OIAT findings. Some of the recommendations advanced by the Enrollment Management Group and implemented by the University include:

- The General Studies Degree, a major designed for students who want to focus their major studies across courses and departments of their choosing. The major offers a wide range of choice within each of the following areas: humanities, social sciences, and sciences;
- The RSVP touch-tone telephone registration system, first used by Spring Quarter, 1994, registrants. This system's efficiency has been tracked and studied, and found to be superior to the in-person system preceding it;
- A new requirement that students declare a major by the time they have earned 110 college credits, and that they do so only through the college or department, which in turn notifies the Registrar; and

- A new requirement that students complete their Junior Writing Exam (JWE) requirements by the time they have completed 110 college credits. Failure to do so results in a student's registration being impacted.

The OIAT has also worked diligently in the area of evaluation and assessment of new programs. Take, for instance, the OIAT's work with the recently added majors: Politics/Philosophy/Education, and Political Science/Economics. Besides supplying program developers with background information, the OIAT provided the evaluation material necessary for the major to be granted HEC Board approval. Currently, the OIAT is working closely with program developers in the Woodring College of Education on an interdisciplinary teacher education curricula designed to reduce the time it takes to earn a degree in this area.

Moreover, the OIAT has formed a strong relationship with the Assessment Committee, a sub-committee answering to the Academic Coordinating Commission of the Faculty Senate. This committee has become exceedingly active, and relies heavily on assessment findings and information. Among the committee's many activities are:

- Launching an extensive study of Running Start Program participants attending Western. In Running Start, high school students attend both college (usually a community college) and high school. Some of these students have earned both a high school degree and an Associate's degree by the time they enter Western, and present a unique challenge;
- Revising the student evaluation of teaching forms. Results from these forms are not just valuable in-put for instructors, but also become part of their evaluation and assessment portfolio, used for issues of tenure, merit pay, and promotion;
- Developing the faculty workload questionnaire. This survey will inform many areas, not the least of which will be Western's up-coming self-accreditation study;
- Offering one-day faculty retreats focused on assessing student learning; and
- Assisting the Expository Writing Committee in its revision of the Junior Writing Exam.

In organizing its research, program evaluation, and outcomes assessment activities, the OIAT strives to generate information relevant to the following fundamental questions: 1) What do we look like as an institution and how can we improve the quality of the academic and sociocultural climate? 2) What factors contribute to general and specific changes in Western students' attitudes, knowledge, and skills? 3) How can we enrich classroom and instructional experiences in order to promote effective learning? 4) How successful are curricular and program activity components and how do they benefit from changes suggested by assessment findings? and 5) What are the effects of administrative decisions on faculty, students, alumni, parents, boards, agencies, and the community in which Western functions?

Additionally, Western's assessment activities are influenced and driven by: 1) strategic action plans contained in Western's Strategic Plan adopted in February, 1992; 2) general assessment categories identified by the Washington's Higher Education Coordinating Board; 3) recommendations forwarded by Western's academic and student services programs and committees; 4) findings generated from previous assessment studies; and 5) information and recommendations found in the institutional research and assessment literature in higher education.

Since 1990, the OIAT has published over forty-five technical reports and thirteen Focus Research Summaries, as well as edited and published Western's highly popular **InfoFact** series of brief summaries of assessment findings. In each of the past six years, the OIAT has been called upon to produce scores of data-based memoranda, some lengthy (as many as ten or twelve pages), some as brief as a page or two. As mentioned above, the OIAT now contributes significantly to budget requests and, in the up-coming biennium, will play a significant role in Western's accreditation review and self-study process. Moreover, along with conducting surveys and collecting data from a variety of respondent populations, the OIAT continues to maintain, along with the Registrar's Office, the Student Tracking System (STS). Among its many annual and/or on-going projects, the OIAT tracks enrollment patterns, persistence to degree, and factors that contribute to retention and academic progress. Freshmen surveys and graduating student profiles are conducted annually; senior surveys are currently conducted semi-annually, but are soon to be conducted annually; health and wellness surveys are conducted semi-annually. Informally, OIAT staff support numerous graduate student projects by maintaining an open-door policy when it comes to sharing their expertise in the area of data analysis and management.

Different Forces Affecting the Assessment Process

At Western, one of the forces most strongly affecting the assessment process is the dramatically changing student body that has been entering Western in the early 1990's. Because of a multitude of outside influences--including the post-baby boom population mini-explosion called the "baby boom echo," the increased number of high-technology jobs created by regional companies and corporations (Microsoft and Boeing, for example), and the reputation the Pacific Northwest as having a high quality of life--Western changed from a school that was relatively easy to access to a school that began turning a lot of students away. Beginning with admissions for the entering class of 1990, a new policy was enacted to deal with the sudden increase in demand. Instead of first-come, first-served, the University accepted admissions applications up to a specified date, then selected from the attendant pool of applicants the best-prepared students. Currently, a few thousand applicants per year are turned away--not in most cases because those students are not adequately prepared, but because so many students apply for admission that only the best-prepared can be accepted. Witness, for instance, the average high

school gpa of students entering Western, which rose from around a 3.00 in the mid-1980's to over 3.5 by the mid-1990's.

Part of this change had also to do with internal forces. National academic and efficiency accolades have increased the interest in Western as a first-choice university among Washington's many fine four-year schools. Indeed, the percentage of in-coming freshmen indicating that they were planning to transfer from Western fell from 29.8% in 1976 to 9.8% in 1995. Moreover, the percentage of in-coming freshmen indicating that Western was their first-choice college rose from 72.2% in 1985 to 82.3% in 1995. These trends have been documented in the OIAT's series of Freshmen (CIRP) Surveys (**OIAT technical reports 1991-05, 1992-06, 1993-04, 1993-05, 1994-02, 1995-03, and Focus Research Summary, vol. 1, issue 4**). Findings from these same surveys indicate that, in a sense, Western has created some of its own access problems by its push toward excellence. For example, in 1971, only 16.9% of entering freshmen indicated that they had chosen Western because of its academic reputation; by 1995, that figure has risen to 60.1%.

In addition to more academically-prepared student body, Western also faced the challenge of educating a larger student body. The Washington State Legislature is asking Western to accept more students, and to develop or identify methods for educating them more efficiently. The issues created by these mandates are exacting, and require careful, informed planning. For instance, an idea such as an expanded Summer Session sounds good, but are the two groups needed to make it work--teachers and students--really interested in it? To this end, the OIAT and the Office of Survey Research conducted two surveys--one of faculty, one of students--as to the viability of an expanded Summer Session (**Focus, vol. 1, issue 5, Faculty Judgments Concerning Expanding Western Washington University's Summer Session; and Focus, vol. 1, issue 6, Student Demand for an Expanded Summer Session**).

As well as careful planning, improving efficiency in education faces exacting definitions. What is considered to be 100% efficiency? What factors contribute to the lessening of efficiency? When cast in the cold light of statistical analyses, factors that may appear to contribute to inefficiency are not always what they seem. Take, for instance, the issue of changing majors. Inherently, changing majors would *seem* like a factor of inefficiency, yet OIAT findings have indicated that oftentimes changing majors increases efficiency--for instance, when a student veers toward a degree program requiring fewer credits in the major, thus allowing more flexibility in course load. This finding is an example of how the OIAT has kept the debate over degree efficiency accurate and focused.

Another area affected by the degree efficiency debate is that of non-traditional students: part-time students, students returning after time away from college, or students beginning college for the first time after a career or experience in the workplace. Such students rarely meet the traditional standard of attaining a degree within four years. Yet if such a

student earns a degree within the required number of credits,¹ even if that student has taken six or eight years to earn that degree, has that student's educational career been an efficient or inefficient use of public resources? Though some might argue that taking six or eight years to earn a bachelor's degree is the epitome of inefficiency, a student earning the exact number of credits required for graduation has actually taken up *no more classroom space than has been absolutely necessary* and has thus achieved maximum, or 100% efficiency. To account for such students, and for use with "traditional" students as well, the Graduation Efficiency Index, a formula based on seat space efficiency was developed to provide the myriad of off-campus and satellite program education planned for Washington State's future a flexible and necessary statistical tool. This Graduation Efficiency Index (GEI), though brand new, has already been put to use at Western (**Focus, vol 1, issue 11, The Graduation Efficiency Index: an Alternative Measure of Time-to-Degree Progress**).

It is likely that the word 'more' will continue to be the defining word most affecting Western, and assessment at Western, into the next century. There will continue to be more students, and those students will continue to be more academically prepared. The OIAT's intention is to continue to meet the challenges wrought by these factors the same way it has in the years preceding: through timely and innovative survey design, through exacting and thorough planning, and through the objective scrutiny of survey and other data. Most importantly, the OIAT will continue to listen closely to the concerns of Western administrators, faculty, staff, and students, as well the concerns of the greater community Western serves in Bellingham and Whatcom and Skagit Counties, the directors of Washington State's higher education community, and the community of Washington state legislators.

Assessment Categories

The assessment categories listed below are the original six assessment categories identified by the Washington's Higher Education Coordinating (HEC) Board, plus a category for miscellaneous activities. Since 1990, the category Employer Perception has been deleted from the HEC Board's requirements, though Western's OIAT continues to survey employer perceptions and needs. Rather than consider this work as miscellaneous, the Employer Perception category has been maintained.

I. Baseline Student Data

Baseline student data informs nearly all aspects of the assessment effort at Western. Baseline data, for instance that are collected in freshmen, senior, and alumni surveys, cover wide-ranging topics, including issues relevant to student services and health, retention, time-to-degree, and academic outcomes.

¹ For example, 180 credits, the standard number of credits required by most of the state's institutions of higher education.

The Registrar's Office at Western compiles and maintains an academic-based Student Tracking System (STS) dedicated to tracking student admissions, retention, and progress. The system constitutes an up-to-date database that permits continual monitoring of enrollment patterns, persistence, graduation rates, gender, and ethnic identification, as well as program enrollments and student performance measures for all academic units. The OIAT regularly uses this information to prepare required reports, as well as to enhance and complement analyses of student responses to questionnaires, interviews, standardized tests, and opinion and behavior surveys.

Baseline data is supplemented by information from the Cooperative Institutional Research Program (CIRP), which was administered periodically to entering freshmen from 1971 to 1989, and annually since 1989. Since 1995, transfer students are also surveyed annually, using the CIRP questionnaire. The CIRP is an ongoing project at the Higher Education Research Institute at UCLA, compiling data from hundreds of participating schools. The CIRP augments Western's student database with the addition of demographic information on student backgrounds, attitudes, and opinions on a wide range of topics. The CIRP and STS databases combined provide an extensive data profile of Western students.

STS and CIRP data are further extended by the College Student Survey (CSS), administered currently in alternate years (soon annually) to June seniors who took the CIRP as freshmen. (In the near future, the CSS will be administered to transfers reaching senior status as well.) CSS data can be merged with information from the STS and CIRP to track changes over time in student descriptors, such as attitudes, perceptions, self-perceptions of competencies, and personal goals.

The OIAT's profile of 1993 graduates (*Report 1994-04, A Profile of Selected Characteristics of the 1993 Western Washington University Graduating Class*) presented an example of how combined data bases can be utilized. From that graduating class, 152 had taken the Freshmen (CIRP) Survey in 1989. These students were found to have been considerably more efficient at earning their degrees than other 1993 graduates (59.9% of CIRP graduates required 12 quarters or less, compared to 14.3% of all other native graduates). By cross-referencing CIRP data, certain findings of interest emerged: 1) the parents of CIRP graduates were more likely to have attended college than non-graduating CIRP respondents; 2) during their college careers, CIRP graduates spent more time studying than non-graduating CIRP respondents; and 3) a higher percentage of CIRP graduates than non-graduating CIRP respondents indicated they were likely to be "satisfied with their college (i.e., Western).

Combined with Student Tracking System information, a statistical snapshot of these more "efficient" students emerged: 1) they had study habits learned prior to entering college that were relatively better than that of their peers; 2) their planning and preparations for college were relatively better; 3) they had a more "up-beat" attitude about attending

Western; 4) they were somewhat more academically prepared before starting college; 5) they were less likely to have earned a BS degree²; and 6) their parents were more likely to have attended college themselves.

Beginning in 1994, the OIAT's already extensive databases are being further extended by the Close-in Surveys of Student Enrollment and Curricular Experience, which gather information on otherwise unmeasured parameters, such as residence experiences, course quality, advising, registration, course access, and major selection.

SALIENT THEMES

A salient theme arising from baseline data that struck OIAT researchers as noteworthy was found in Senior (CSS) Survey data (*Focus, vol.1, issue 7, The 1995 Senior Survey: A Longitudinal Study of 1991 Freshmen*), and focused on student's self-awareness of their skills and abilities. The percentage of June, 1995, seniors reporting "much stronger" knowledge of a particular field was 73.2%; the percentage reporting "much stronger" general knowledge was 48.0%; and the percentage reporting "much stronger" critical thinking abilities was 30.1%. In other words, students felt quite confident in their knowledge in a specific area, but less confident in their analytical abilities.

It is curious that in an area the University (and higher education generally) espouses to value highly, the ability to think critically, students indicate their least amount of confidence. It may be that as students concentrate on mastering the rote knowledge required in a particular academic area, they are unaware of the fact that they are also learning to think critically. Alumni findings, for instance, indicate a high degree of satisfaction with Western's contribution to the area of problem solving--a minimum of 65% in each of the four surveys of graduates 12-18 months out, and over 75% for the survey of graduates 36 months out. Yet this is only conjecture. Meanwhile, the issue would seem worthy of deeper study and analyses.

CHANGE (GENERAL)

Baseline data from a variety of sources (both survey data and data found in the Student Tracking System) indicated change in the following areas:

- Freshmen retention rates have increased from 71% in 1985 to 84% in 1994;
- The percentage of entering freshmen graduating within five years increased from 36% for 1985 freshmen to 51% for 1990 freshmen;
- Performance has improved on Western's required intermediate level writing exam, the Junior Writing Exam;

² This report is not in any way, shape, or form advocating avoiding earning a BS degree in order to increase degree efficiency. It is simply a statement of fact that at this point in time earning a BS can potentially affect the time-to-degree efficiency.

- When admissions decisions for entering freshmen were changed in 1989, from first-come, first-served to use of a deadline window, average high school GPA and SAT scores both rose measurably, giving Western a significantly more talented student body than before, with shifting program demands;
- The percentage of ethnic-minority students at Western has increased from 700 students in 1991 to 1682 students in 1996; of these, 820 are Asian-Americans;
- Senior (CSS) Survey results indicated that over 80% of spring, 1993 and 1995, seniors indicated they were very satisfied with their overall college experience; and
- Freshmen (CIRP) Survey results show that entering students citing good academic reputation as a very important reason for selecting Western increased from 17% in 1971 to 60.1% in 1995.

CHANGES (STUDENT LEARNING)

Comparison of responses to the 1991 Freshmen (CIRP) Survey with responses to the 1995 Senior (CSS) Survey provided some measure of changes in student learning. Spring, 1995, seniors reported:

- Higher levels of satisfaction with Western than anticipated as freshmen;
- Higher levels of satisfaction with the courses in their major field compared to June, 1993, seniors;
- Improved levels of satisfaction with programs delivering services that traditionally--and nationally--receive lower levels of satisfaction than do academic programs, including percentage increases in satisfaction with academic advising (up from 31.6% to 36.8%); career counseling (up from 29.4% to 37.8%); and financial aid (up from 27.9% to 34.1%);
- Less concern for money and more concern for meaning (as freshmen, 52.4% of 1995 seniors indicated as "essential" or "very important" that they be well off financially, while as seniors that figure fell to 35.1%; as freshmen, 47.9% of 1995 seniors indicated as "essential" or "very important" that they develop a meaningful philosophy of life, while as seniors that figure rose to 59.9%).

II. Intermediate assessment of quantitative and writing skills

A variety of data sources enable the OIAT to assess quantitative and writing skills, including scores of the Junior Writing Exam and Math Placement Test, and survey results from Freshmen (CIRP) Surveys, Senior (CSS) Surveys, and alumni surveys. A new longitudinal study of student writing skills was begun in 1995 and will conclude in 1999.

The assessment of writing and quantitative skills poses difficult questions. What, for instance, should be the measure of writing skills: how much students write, the quality of that writing, or a ratio of emphasis between the two? What, for instance, should be the

measure of improved quantitative skills: the number of math courses a student has taken, or a broader measure?

Regarding writing skills, since 1990 Western has increased its emphasis on improving writing skills, with the OIAT supporting a number of writing assessment projects, including technical support for the Writing Center, conducting surveys and studies of both the quantity and quality of student writing at Western, and launching a four-year longitudinal assessment of English 101 portfolios.

Regarding quantitative skills, Western's assessment program was one of the first to point out that quantitative thinking encompassed a wide variety of disciplines: mathematics, of course, but also logic, statistics, economics, music, science, and many critical thinking areas in the humanities. This broader definition of quantitative skills affected strongly the scope of how to identify and assess quantitative skills.

SALIENT THEMES

Writing and quantitative skills are valued highly by employers, educators, legislatures, and others--so valued, in fact, that in 1992 they were assigned a separate assessment category by the HEC Board. Yet nothing is more difficult to assess than these two skills. Writing skills, for instance, are best assessed through in-depth analysis of student writing portfolios--not generally utilized by Washington's public colleges and universities, with two notable exceptions: The Evergreen State College and Western's Fairhaven College. Portfolios made available to Western's Office of Institutional Assessment and Testing by Fairhaven College constituted the data upon which a highly informative study was based (*Report 1995-01, Portfolio Analysis and Cognitive Development at Fairhaven College*).

At Fairhaven, each course assessment is based on student writing assignments. Course assignments become part of a Fairhaven student's overall college portfolio, which includes a lengthy self-reflective piece due at the end of the program. This portfolio was analyzed by outside researchers using the Measure of Intellectual Development (MID). These scores were adjusted to the Perry Scheme, and indicated a change from 3.37 (early writing samples) to 3.68 (late writing samples), a finding that was statistically significant.

The Fairhaven study was so successful that a new study was launched that would apply similar assessment strategies to the general population of Western students. During the 1995-96 academic year, the OIAT, in collaboration with the English Department's Composition Program, collected nearly 500 English 101 portfolios. In the academic year 1999-2000, these students will be asked to submit a new sampling of writing assignments which can be compared to their earlier work. This study will give writing assessment researchers at Western a new and insightful assessment tool.

CHANGE (GENERAL)

Writing

Assessment of writing at Western has become multifaceted. One method has been to track quantity. After all, in order to improve a student's writing ability, opportunities to write must be available. A survey conducted by the OIAT in 1991 (*Report 1991-03, Summary Report of Admissions and Graduation Requirements of Selected Units and Programs at Western Washington University*) included a section where the quantity of student writing was measured department by department. This quantity was found to vary widely. The report fueled much discussion about the issue of writing opportunities, and helped spur the Writing Center activity of accumulating and making available to instructors a variety of writing assignments, including those applicable to large GUR classes.

The OIAT also has monitored and studied the quality of student writing. Among other methods, the OIAT began by simply keeping track of Junior Writing Exam (JWE) results, especially since 1991, when the JWE became more than a diagnostic for student preparedness for upper division writing intensive classes but also a requirement to graduation. The JWE has been, and probably will continue to be a focus for writing issues at Western, just as assessment will continue to provide those faculty committees studying the JWE with findings upon which they can base decisions. Recently, through support of the OIAT, a thorough analysis of JWE objective section results using statistical modeling procedures was completed. This study should provide a wealth of data regarding the efficiency and usefulness of the objective section of the JWE.

Quantitative

Outside of the student learning changes delineated in the next section, assessment of quantitative skills relies, at this point, on findings from a variety of survey sources: the Freshman (CIRP) and Senior (CSS) Surveys, plus alumni and former student surveys.

CHANGE (STUDENT LEARNING)

Writing

In addition to the over-arching changes in policies and programs affecting student writing skills that assessment findings have contributed through committee and/or administrative recommendations, at least one OIAT report exacted a direct and immediate change. The essay writing skills study (*Report 1991-08, Analysis of Student Essay Writing Skills in Entry-Level English composition Courses at Western Washington University*) enabled the English Department to change course registration policies. Those students in English 100 (a writing skills remediation course) were allowed guaranteed placement in an English 101 course if they registered for that course in the next quarter.

Another source of change in student learning comes through the Freshman (CIRP) Survey and its longitudinal follow-up, the Senior (CSS) Survey. Items related to writing ability are included in both questionnaires, and can be tracked. Alumni surveys, too, contain questionnaire items concerning writing skills and abilities. For instance, alumni survey findings indicated that satisfaction with Western's contribution to writing skills rose from 55.3% in 1990 to 61.6% in 1996.

Quantitative

Similar to the circumstance stated above, an OIAT study affected a direct and immediate change in the area of quantitative skills. A series of studies comparing math course grades to Math Placement Test (MPT) scores generated a direct and immediate policy change (**Report 1991-06, *The Math Placement Tests: Relationships to Mathematics Course Performance, Mathematics Course Selection, and Other Predictors of Academic Achievement; and Report 1992-03, An Analysis of the Effects of a Readjustment of the Math Placement Test Cutoff Scores***). The first report concluded that the MPT scores needed readjustment. In some instances, students were being placed in courses for which they were under-prepared, and in others in courses for which they were over-prepared. The Mathematics Department made the adjustments and the second report tested those adjustments for efficiency, finding that the new cutoff scores worked much better.

As noted above and similar to writing assessment, other sources of data monitoring of change in quantitative learning include the Freshman (CIRP) Survey, Senior (CSS) Surveys, and alumni surveys. Unfortunately, this is an area in which a deficit has been noted in the available data. While the issue at stake is the improvement of *quantitative* knowledge, most of the data sources query students as to their *mathematical* knowledge--but one subset of a thorough assessment of overall quantitative skills. Tackling this problem will be one of the primary goals of the OIAT in the next couple of years.

III. End-of-Program

More than any other, end-of-program assessment addresses directly the issue of accountability. Though the "end product" of an institution of higher learning is not a product at all but an educated individual, institutions still need methods to measure how successful at that job they have been. At Western, this process is, like many other assessment processes, multifaceted. Indeed, one of the OIAT's first studies focused specifically on departmental end-of-program activities (**Report 1991-03, cited above**).

SALIENT THEMES

At Western, so much had already been done at the department level before assessment began that Western's assessment efforts were freed relatively early to expand into areas that other assessment programs are only now beginning to address. The report done in late 1990 and published in 1991 on department-level end-of-program assessment indicated that nearly all of Western's departments had capstone experiences, whether

they were senior papers, projects, or theses; senior seminar courses; state accrediting tests; internships or student teaching; or senior recitals, exhibitions, or portfolios. Departments that did not have capstone experiences at the time of the report have since implemented them.

Yet end-of-program assessment does not stop at the department level. For overall analysis of end-of-program efficiency, the OIAT uses a number of techniques, including basic student accounting: how many students graduated? what was their overall Western gpa? how many earned honors? This chore is accomplished through the OIAT's annual Graduating Class Profile reports (*one report has been produced each year since the spring of 1990, plus Report 1992-02, Selected Characteristics for a Decade of June Graduating Classes at Western Washington University: 1981 to 1991*). This database of graduate characteristics is vital to decision making and program planning.

Another method of assessing end-of-program success is to ask students themselves how well they thought Western did. This is accomplished through surveys of seniors and alumni. These surveys ask students how well they believe Western has prepared them for life beyond higher education, how much their skills have improved in various areas (writing and quantitative skills, for example), and how their perceptions and attitudes have changed during their tenure at Western.

In recent years especially, assessment's efforts to study and track graduation rates and time-to-degree have become important. A major study mounted in 1994 (*Report 1994-03, Strategic Plans and Procedures to Improve Degree Progress and Persistence at Western Washington University*) presented a wide-ranging discussion of the issues effecting the time it takes a student to earn a degree; included in the study were statistical regression and correlation analyses. This study did much to dispel incorrect notions of where the bottlenecks in degree efficiency were (changing majors, for instance, was not as big a factor as many thought), as well as pointed out where bottlenecks really did exist (advising, for instance, was one area in which the University could improve services and have some affect on graduation efficiency).

CHANGE (GENERAL)

Since 1990 Western has been able to de-emphasize its scrutiny of department-level end-of-program activities and concentrate more on the over-arching end-of-program issues. This is partly due to the fact that nearly all academic departments had already or have since implemented capstone experiences. Also, with students crowding at Western's doors for admission, it has been imperative that the University address its access problem--without losing its academic integrity. This mandate has put decision makers in a position of needing accurate, objective findings upon which to base those very important decisions, some of which have included the expanding of Summer Orientation for in-coming freshmen and implementing a new Summer Orientation for in-coming transfers, the implementation of a General University Degree, the possibility of

expanding Summer Session (*Focus Research Summaries 5 & 6, cited above*), the possibility of changing from a quarter to semester system (*Focus, vol. 1, issue 3, WWU Faculty Survey Concerning Semester versus Quarter Schedules*), and many others.

CHANGE (STUDENT LEARNING)

Student learning through assessment findings has certainly been effected by assessment efforts since 1990. For one, programs that had not yet implemented an end-of-program capstone experience have since done so, or are actively pursuing one at this time. For another, assessment findings greatly influenced advising at Western, both through the Office of Academic Advising and academic advising programs offered at the department level. Assessment findings from Senior (CSS) Surveys and alumni surveys particularly have been influential. These findings have indicated that directing resources toward better advising will have a positive outcome on degree efficiency. Also, programs such as the General University Degree have a direct and immediate influence on the numerous students in need of such programs.

Another end-of-program assessment activity that should exert some strong influence in the future is the Longitudinal Study of English 101 Portfolios. This study will rely on holistic portfolio analyses of student writing over time--i.e., during their freshmen year and again in their senior year. This end-of-program study should provide the University with a depth of student writing analysis unavailable heretofore.

IV. Alumni Survey Common Items

In the past six years, Western Washington University has conducted five surveys of alumni which included, among other survey questions, the fourteen statewide common items relating to the respondent's satisfaction with the University's contribution to learning and understanding in specific areas. These surveys included surveys of the graduating classes of 1990, 1992, 1994, and 1996, as well as a three-year follow-up survey of the class of 1992 conducted in 1995, and labeled "92-3" in the accompanying table (in overleaf, Table 1).

The original survey questions included five levels of satisfaction ranging from "very" to "not at all" satisfied. The three-year follow-up survey used a four-level scale, from "very" to "not at all" satisfied. Responses to the three-year follow-up were rescaled to be compatible with the senior survey results. It should be noted that inspection of the original data suggests the possibility that graduates three years out are more likely to report being very or mostly satisfied with their educational experience than they were as seniors; however, this possibility must be viewed with caution because of the different rating scale on the follow-up survey

Class of	1990		1992		92-3**		1994		1996	
	n	mean	n	mean	n	mean	n	mean	n	mean
Writing	1183	2.44	1398	2.46	844	2.42	1388	2.45	1374	2.31
Speaking	1172	2.57	1380	2.61	844	2.64	1379	2.69	1374	2.57
Analyzing Writing	1192	2.25	1403	2.31	844	2.39	1394	2.33	1374	2.20
Independent Learning	1195	1.93	1412	1.93	844	1.99	1392	1.94	1374	2.03
Understanding the Arts	1140	2.35	1341	2.38	844	2.53	1324	2.39	1374	2.77
Scientific Principles	1132	2.61	1323	2.71	844	2.59	1325	2.76	1374	2.64
Quantitative Methods	1147	2.41	1352	2.50	844	2.46	1341	2.56	1374	2.49
Problem Solving	1194	2.16	1405	2.26	844	2.23	1390	2.21	1374	2.21
Working Cooperatively	1192	2.09	1411	2.07	844	2.09	1396	2.08	1374	2.14
Career Readiness	1190	2.66	1404	2.82	844	2.88	1389	2.90	1374	2.81
Grad Study Readiness	1140	2.42	1223	2.75	844	2.81	1223	2.86	1374	2.66
Cultural Differences	1178	2.35	1383	2.38	844	2.24	1376	2.39	1374	2.40
Social/ Environmental	1166	2.41	1379	2.40	844	2.35	1369	2.42	1374	2.33
Citizenship	1142	2.74	1335	2.82	844	2.69	1347	2.91	1374	2.81

*Senior surveys used a five-point satisfaction scale: 1= very, 2=mostly, 3=somewhat, 4=a little, 5= not at all

**Three-year follow-up survey results converted from a four-point scale

Table 1. Sample Sizes and Mean Satisfaction Scores for Alumni Survey Common Items.

SALIENT THEMES

Inspection of Table 1 reveals a remarkable consistency of responses over the six-year period. Mean scores are consistent across years for most categories, and across categories for each year, showing the same relative levels of satisfaction among the different items for each class. Two noteworthy exceptions are the ratings for satisfaction with career readiness and satisfaction with readiness for graduate study, both of which appear to vary more from year to year than the other items; these differences were even more pronounced in the original survey data. Given the importance of these two items in the lives of graduates, these might be fruitful areas for more detailed investigation.

CHANGE (GENERAL)

Four areas of interest for possible further investigation are highlighted in Table 1. Three may be causes for concern at the policy level. First, there appears to be a decline in satisfaction with preparation for understanding and appreciating the arts over the six-year period. Second, there appears to be a decline in the perception of readiness for a career over the six-year period. Third, the perception of readiness for graduate education appears to have declined over the six-year period.

In addition, the three-year follow-up students seem to have a generally more favorable impression of their Western education almost across the board, compared to their impressions at graduation. It is worth noting, however, that the one exception to this trend is the item regarding readiness for graduate education. Therefore, the alumni survey as well as the senior surveys suggest this as a possible area for further investigation.

V. Employer Satisfaction and Needs Surveys

From the beginning of Washington State's assessment effort, employer satisfaction surveys ran headlong into a number of problems. For instance, due to legal reasons, one of the largest regional employers of Western students would not respond to the survey. Still, that survey was completed and the subsequent published report is still instructional (*Report 1991-04, Survey of Employers' Satisfaction With Western Washington University Graduates*).

Yet most of Washington's institutions of higher education did drop the idea of employer satisfaction surveys--most did not even complete the first, much less begin a second. After its initial employer satisfaction survey, it was Western's decision to drop such surveys as well. Instead, assessment researchers decided to poll employer needs. This goal seemed to fit well with Western's intention to maintain a dialogue with Washington employers as a means of assessing the adequacy of student preparation for the work force, the potential for improving University programs, and the changing needs of employers.

SALIENT THEMES

At the behest of the Office of University Extended Programs, three such surveys have been completed thus far. All of these surveys have targeted off-campus programs, which are especially thirsty for knowledge about what programs and classes are needed in particular areas. Off-campus programs are quite dependent on current trends and needs in the job market. Improving job skills, or acquiring new ones are issues of high importance to people considering off-campus programs. When developing new programs, Continuing Education directors and staff need information that is as up-to-date as can be provided, including what skills employers think future employees will need.

CHANGE (GENERAL)

Western's first survey of Washington employers was conducted in 1988 and completed in 1991. The survey included the responses of both personnel managers and immediate supervisors. Both groups indicated high levels of satisfaction with Western graduates, 80.6% and 89.8%, respectively. Among the qualities most valued by employers were reliability, cooperation with others, and ability to learn. In addition, employers reported that related work experience or internship experience was considered a particularly desirable quality in prospective employees.

CHANGE (STUDENT LEARNING)

The following studies affected student learning in that they addressed specific course and curricular needs. In 1994, Western's University Extended Programs commissioned a survey of potential demand for a program in Environmental and Resource Management to be located on the Olympic Peninsula (**Report 1994-06, Port Angeles Area Employer Survey: Demand for Training in Environmental and Resource Management**). Results of the telephone survey projected that about 100 employees per year would take courses in such a program if it were available. This information was an important factor in the subsequent expansion of Western's extended program in environmental studies at its Port Angeles site.

In 1996, Western's University Extended Programs commissioned a survey of potential demand for a program in computer science on the Kitsap Peninsula (**Focus, vol 1., issue 13, Assessment of Kitsap Employers' Needs Regarding Computer Science Training**). Response rates were particularly low, even after several follow-up efforts. Nonetheless, findings distinguished between the demands for computer science training and computer skills training, and suggested low overall demand, though with some potential for limited offerings in a few specific areas.

VI. Program Enhancement/ Review

A central responsibility of Western's OIAT is to serve the program analysis needs of various client units of the University. These analyses have covered a wide range of topics, some of which are covered below.

1) Liberal Arts Cluster Course Study.

In fall of 1993, Western initiated a series of cluster courses and accompanying seminars for entering freshmen as an option for completing General University Requirements in humanities and communications. In 1995, OIAT conducted a survey of student perceptions of the program, and combined survey results with baseline profile data on participating students. Results have been submitted to a University-wide faculty committee evaluating alternatives to the GUR curriculum.

2) Cultural and Geographic Literacy Study

In 1991, a sample of 600 undergraduate students were tested on basic cultural and geographic facts. Another sample was tested in 1993. These data have assisted faculty in designing courses which deal with cultural diversity, and provide a baseline measure of cultural literacy on which to base comparisons in the future.

3) Summer School Schedule Survey

At the request of the Provost and the director of Western's Summer Session, the OIAT and the Office of Survey Research designed and administered both a faculty survey and a student survey to assist the administration's assessment of a proposal to expand Summer Session to "full-time" operation, comparable to other academic quarters (*Focus Research Summaries, vol.1, issues 5 and 6, cited above*). Findings indicated a fifty percent increase in student participation for summer session classes if a full curriculum were available in their majors, tuition were comparable to other quarters, and comparable financial aid/work study were available. Faculty survey results indicated strong support for the program, although only about 45% of the faculty would be available in any given summer, and paradoxically, the faculty strongly opposes hiring of summer-only faculty.

4) Semester/Quarter Faculty Survey

In 1995, the OIAT developed and conducted a survey of all part-time and full-time faculty regarding relative advantages and disadvantages of the semester and quarter schedules, at the request of the Faculty Senate (*Focus Research Summary, vol. 1, issue 3, cited above*). Results split to fit a textbook example of a bipolar outcome, with over half the faculty evenly split between strongly favoring or strongly opposing a switch, with a relatively low percentage remaining indifferent. Faculty opinion was strongly influenced by years at Western, teaching experience in a semester system, and academic discipline. While no shift to a semester system is currently being planned, this survey provides valuable basis for discussion.

5) Client Services

The OIAT also assists individual academic units to conduct their own program reviews. Assistance includes providing units with database information about their students and graduates, assistance in constructing surveys, and specialized assistance as requested.

These services have recently been provided to the Departments of Engineering Technology, Physical Education, Theater/Dance, and Communications.

VII. Miscellaneous Assessment Activities

Western has numerous activities that fall under the miscellaneous category. Though not directly related to activities in the six categories listed above, most miscellaneous activities are either related to, if not outright culled from the activities in those six categories.

Western, for instance, has done at three major studies, and one smaller study, of issues related to student health. Why? Because findings from alumni and senior surveys, and a survey of non-matriculated students have indicated that student health can have a strong influence on learning outcomes.

Similarly, the OIAT responds to requests from administrators and academic departments needing data relating to a myriad of issues that ultimately effect student outcomes: expanding summer school, changing from a quarter to semester system, expanding Wilson Library hours and services, measuring faculty attitudes toward scholarship and teaching, discovering where and when students study, tracking the opinions of ethnic-minority students, understanding the nature of community service by Western students, and investigating academic integrity.

Below are some of the highlights of the OIAT's long list of assessment activities that do not fit directly into the first six yet exert an influence on the activities those categories describe.

1) Student Health

Salient Themes

Early OIAT findings alerted administrators at Western that there was a link between student health and graduation efficiency. From a study of non-matriculating former Western students it was uncovered that while at Western many of them experienced negative effects due to alcohol and/or other drug use, including the inability to compete academically. Further studies indicated that, indeed, students appeared to have a blind spot when it came to recognizing the negative effect of drinking on their academic abilities (*Report 1993-06, WWU Lifestyles Project: Patterns of alcohol and Drug Consumption and Consequences Among Western Washington University Students; and Report 1996-01, WWU Lifestyles Project Follow-up: Patterns of Alcohol and Drug Consumption and Consequences Among Western Washington University Students*).

Change (General)

Supported by assessment findings, Western's Primary Prevention and Wellness Center received federal grants that supported programs such as Project WE CAN. Project WE CAN took a proactive approach to alcohol and other drug abuse, disseminating information, arranging seminars, and advocating knowledge as the best tool to prevent abuse. Other programs initiated by the Wellness Center include Wellness Halls, where

students pledge to live alcohol and drug free, and the Hospitality Alliance, where bar and restaurant owners meet with coordinators of alcohol and other drug programs to promote mutual understanding and agree on mutual goals. The Hospitality Alliance has been a rousing success; the Wellness Hall program has exceeded all expectations.

Change (Student Learning)

The point of Wellness Halls, anti-alcohol and drug abuse programs--of student health focus in general--is to improve students' chances of succeeding in college. It is the contention at Western that healthy students imbued with facts of the effects of alcohol and other drugs are students who stand a better chance of succeeding in college. In the two years between studies, findings indicated that the programs instituted were having some effect on student drinking patterns. While in no way causal, the findings were at least encouraging.

2) Academic Integrity

Salient Themes

In 1994, Western was a participant in a nationwide study of the extent and nature of cheating in American colleges and universities. This study was of particular interest because a similar study had been done at Western in 1962--thus changes in attitudes about cheating could be compared for cohorts thirty years apart. The findings indicated that Western's pattern of student cheating was unremarkable compared to national findings. While attitudes toward cheating by cohorts thirty years apart were somewhat different, cheating was no more nor less prevalent at Western than at other schools.

Change (General)

Though the findings did not single out Western as being different from other schools, the impact of the survey was still important. For one thing, any complacency that might have existed about cheating was dispelled. Faculty, administrators, students--all were reminded that cheating exists, that it is intrinsically wrong, and that a renewed effort to keep cheating at bay should be mounted. In response, administrative guidelines regarding cheating were reviewed, and faculty colloquia on the issue of cheating were established.

Change (Student Learning)

Obviously, student outcomes should not be influenced by cheating. Safeguards against cheating must be established and rigorously maintained if student outcomes are to remain valid. Western's renewed efforts to keep cheating out of its student outcomes formulae is a small, but important part of its overall effort to maintain its high academic standards.

3) Diversity Efforts

Salient Themes

Mandates for a public institution like Western include reaching out to members of diverse populations, be they ethnic-minorities, the disabled, or veterans. Such responsibilities have one thing in common: how should programs that address those responsibility be

assessed. Again, one way is to describe the phenomena: in other words, track the number of ethnic-minorities, disabled, and veterans that attend and graduate, as well as track their gpa's and academic accomplishments. The other way to assess effectiveness is to acquire survey information from the cohorts the institution is trying to serve. The OIAT has worked diligently in both areas: besides making diverse groups a part of regular assessment retention and graduation rate findings, the OIAT has conducted surveys of ethnic-minority student opinion.

Change (General)

Studies such as the OIAT's Ethnic-Minority Student Opinion Survey serve a multitude of functions: 1) they inform the University as to what ethnic-minorities think about the job Western is doing for them; 2) they inform the offices offering the programs set up for ethnic-minorities as to the job they are doing; and 3) they keep the issues alive in the day-to-day campus discourse.

Change (Student Learning)

Similarly to the issues discussed above--student health and academic integrity--the issues affecting students from diverse backgrounds can be addressed or ignored. If addressed, outcomes should improve; if not addressed, outcomes will remain stagnant or worsen. Western again chooses a proactive approach: 1) through subjective findings, isolate the areas where change would enhance efficiency; 2) discuss thoroughly any and all possible solutions; and 3) wherever possible, implement programs that would best bring those improvements about.

4) Issues Affecting Faculty

Salient Themes

The essence of education is twofold: a teacher teaches; a student learns. Neither has anything without the other. When assessing the effectiveness of programs and policies, both teacher and student need to be considered. At Western, faculty opinion is actively sought through a variety of studies. Faculty have been surveyed concerning switching from a quarter to semester system, about their judgments regarding an expanded Summer Session, and as to their opinions of the balance between undergraduate teaching and faculty research, as well as teaching and faculty scholarship. Moreover, departmental efficiency (i.e., faculty productivity as a function of instructional cost, student credit hours, and faculty instruction load) has been studied.

Change (General)

Studies of faculty opinion have had strong influence over administrative decisions. Based partially on the strength of faculty opinion regarding the change from a quarter to a semester system, the project was essentially shelved--a case where sometimes no change is better than change. Also based partially on the strength of faculty opinion, plans for an expanded Summer Session remain viable--a case where enough interest warranted continued interest.

Change (Student Learning)

Change in student learning through faculty assessment is predicated on the idea that changes that effect faculty will eventually find their way into the classroom. If faculty efficiency improves, for example, one would expect to see incremental improvements in student learning. No where would this effect be more noticed than in the debate between undergraduate teaching and faculty research. Though not considered a "research" university, grants fund important projects that positively effect student learning. What balance should Western's faculty strike? The discussion is important, as are the assessment findings that fuel that discussion.

What Needs Attention

Increased student enrollments have created a number of areas that assessment will need to pay close attention to in the up-coming years. What, for instance, will be the effect on the quality of student learning as more students enter Western (especially if the number of faculty per student decreases)? What other resources will be impacted by the increased number of students: housing? recreation? student programs?

Indeed, student learning is affected by more than just classroom time. As enrollments increase, will student services be able to keep pace with student demand? Academic advising, for instance, has been shown to be instrumental in improving time-to-degree efficiency, and at Western steps have been taken, and assessment findings have indicated that improvement in this area has occurred. Will the increased numbers of students affect these improvements?

In addition to more students, Western's in-coming student body is better prepared academically, and this fact bears close scrutiny, too. In the last two years the average gpa of Western graduates has been around 3.15; previously, the average gpa of Western graduates was around 3.05. In what other ways might these better prepared students affect outcomes? In what ways might curricula respond to these outcomes? More generally, are the demands of better prepared students different? If they are, how are they different?

Another issue that needs monitoring is the increase in esteem for Western's academic reputation. More students than ever are choosing Western because of its academic reputation, and more than ever expect to be satisfied with Western before they have had even one class. How might this unprecedented trend affect student outcomes? Will it make easier or harder for instructors? Will the rising expectations have a positive or negative affect on the satisfaction levels of graduates?

Currently, not very much is being done to measure the affect that Western has on the quantitative skills of students. For that matter, there seems to be somewhat of a quandary statewide as to how to deal with this issue. What has been accomplished is that

researchers have identified the fact that quantitative knowledge should not mean knowledge of mathematics particularly. What is currently called quantitative knowledge might more accurately be called the ability to think critically.

Yet whatever name it is given, there is currently no direct outcomes measurement criteria for quantitative knowledge. This differs from writing ability, for instance, where Western has initiated longitudinal studies based on already successful studies of writing ability, and where already available findings are relatively unambiguous. For quantitative knowledge, available findings (from freshmen, senior, and alumni surveys) are very much ambiguous, or deal only with mathematical ability. As we move into the end of the 20th century and into the 21st, this area may, in fact, be one of the most challenging for assessment programs statewide.

Appendix A:

Office of Institutional Assessment and Testing
Technical Report Series

WESTERN WASHINGTON UNIVERSITY
OFFICE OF INSTITUTIONAL ASSESSMENT AND TESTING
TECHNICAL REPORT SERIES

1988

Simpson, C. (1988, May). **The Western Washington University Student Survey Series (Volume One: Western Washington University Students)**. Bellingham, WA: Office of Survey Research, Western Washington University.

Simpson, C., Buck, K. (1988, May). **The Western Washington University Student Survey Series (Volume Two: Student Experiences and Perceptions)**. Bellingham, WA: Office of Survey Research, Western Washington University.

Simpson, C. (1988, May). **The Western Washington University Student Survey Series (Volume Three: Western Washington University Students Five Years Later)**. Bellingham, WA: Office of Survey Research, Western Washington University.

1989

Council of Presidents and State Board for Community College Education (1989, May). **The Validity and Usefulness of Three National Standardized Tests for Measuring the Communication, Computation, and Critical Thinking Skills of Washington State College Sophomores: General Report**. Bellingham, WA: Office of Publications, Western Washington University.

Council of Presidents and State Board for Community College Education (1989, September). **The Validity and Usefulness of Three National Standardized Tests for Measuring the Communication, Computation, and Critical Thinking Skills of Washington State College Sophomores: Technical Report**. Bellingham, WA: Office of Publications, Western Washington University.

1990

McKinney, G.R., Trimble, J.E., Andrieu-Parker, J.M. (1990, September). **A Profile of Selected Characteristics of the Spring 1990 Western Washington University Graduating Class (Report 1990-01)**. Bellingham, WA: Office of Institutional Assessment and Testing, Western Washington University.

1991

Thorndike-Christ, T.K., Trimble, J.E., Andrieu-Parker, J.M. (1991, February). **The Relationship between Academic Performance, Students' Admission Status, and Selected Student Characteristics (Report 1991-01)**. Bellingham, WA: Office of Institutional Assessment and Testing, Western Washington University.

McKinney, G.R., Trimble, J.E., Andrieu-Parker, J.M. (1991, February). **Systemwide Indicators for Western Washington University (Report 1991-02)**. Bellingham, WA: Office of Institutional Assessment and Testing, Western Washington University.

McKinney, G.R., Thorndike, R.M., Trimble, J.E. (1991, February). **Summary Report of Admissions and Graduation Requirements of Selected Units and Programs at Western Washington University (Report 1991-03)**. Bellingham, WA: Office of Institutional Assessment and Testing, Western Washington University.

McKinney, G.R., Andrieu-Parker, J.M., Thorndike, R.M., Simpson, C., Trimble, J.E. (1991, March). **Survey of Employers' Satisfaction with Western Washington Graduates (Report 1991-04)**. Bellingham, WA: Office of Institutional Assessment and Testing, Western Washington University.

Thorndike-Christ, T.K., Thorndike, R.M., Andrieu-Parker, J.M., McKinney, G.R., Trimble, J.E. (1991, April). **The Cooperative Institutional Research Program (CIRP) Survey of Western Washington University Freshmen: A Comparison of the 1985 and 1989 Incoming Classes (Report 1991-05)**. Bellingham, WA: Office of Institutional Assessment and Testing, Western Washington University.

Thorndike-Christ, T.K., Andrieu-Parker, J.M., Trimble, J.E. (1991, May). **The Math Placement Tests: Relationships to Mathematics Course Performance, Mathematics Course Selection, and Other Predictors of Academic Achievement (Report 1991-06)**. Bellingham, WA: Office of Institutional Assessment and Testing, Western Washington University.

Thorndike-Christ, T.K., Andrieu-Parker, J.M., Trimble, J.E. (1991, June). **An Addendum to The Math Placement Tests: Relationships to Mathematics Course Performance, Mathematics Course Selection, and Other Predictors of Academic Achievement (Report 1991-06a)**. Bellingham, WA: Office of Institutional Assessment and Testing, Western Washington University.

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McKinney, G.R., Andrieu-Parker, J.M., Trimble, J.E. (1991, August). **Analysis of Student Essay Writing Skills in Entry-Level English Composition Courses at Western Washington University (Report 1991-08)**. Bellingham, WA: Office of Institutional Assessment and Testing, Western Washington University.

1992

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McKinney, G.R., Andrieu-Parker, J.M., Trimble, J.E. (1992, April). **Selected Characteristics for a Decade of June Graduating Classes at Western Washington University: 1981 to 1991 (Report 1992-02)**. Bellingham, WA: Office of Institutional Assessment and Testing, Western Washington University.

McKinney, G.R., Andrieu-Parker, J.M., Trimble, J.E. (1992, April). **An Analysis of the Effects of a Readjustment of the Math Placement Test Cutoff Scores (Report 1992-03)**. Bellingham, WA: Office of Institutional Assessment and Testing, Western Washington University.

Simpson, C., McKinney G.R., Andrieu-Parker, J.M., Trimble, J.E. (1992, June). **Western Washington University Alumni Attitudes and Perceptions of Their Undergraduate Experiences--1987 and 1989 (Report 1992-04)**. Bellingham, WA: Office of Institutional Assessment and Testing, Western Washington University.

Gould, G.S., McKinney, G.R., Andrieu-Parker, J.M., Trimble, J.E. (1992, July). **Western Experience Survey (Report 1992-05)**. Bellingham, WA: Office of Institutional Assessment and Testing, Western Washington University.

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Wharton, D.A., McKinney, G.R., Andrieu-Parker, J.M., Trimble, J.E. (1992, September). **Chose Not to Enroll: Survey Results of Nonenrolled Students Admitted to Western Washington University (Report 1992-07)**. Bellingham, WA: Office of Institutional Assessment and Testing, Western Washington University.

1993

Hayes, P.E., McKinney, G.R., Andrieu-Parker, J.M., Trimble, J.E. (1993, January). **The Everett Human Services Program: Alumni Attitudes and Perceptions (Report 1993-01)**. Bellingham, WA: Office of Institutional Assessment and Testing, Western Washington University.

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Senecal, B.A., McKinney, G.R., Trimble, J.E. (1993, August). **The Relationship between Participation in the Access Program and the Academic Achievement and Retention of Minority and Non-Minority First-Year Undergraduates (Report 1993-03)**. Bellingham, WA: Office of Institutional Assessment and Testing, Western Washington University.

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Fabiano, P.M., McKinney, G.R., Bates, S.C., Trimble, J.E., Pearson, K M. (1993, December). **WWU Lifestyles Project: Patterns of Alcohol and Drug Consumption and Consequences Among Western Washington University Students (Report 1993-06)**. Bellingham, WA: Office of Institutional Assessment and Testing, Western Washington University.

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1994 (cont.)

McKinney, G.R., Andrieu-Parker, J.M., Trimble, J.E. (1994, April). **The Cooperative Institutional Research Program (CIRP) Survey of Western Washington University Freshmen for the 1993 In-coming Class (Report 1994-02)**. Bellingham, WA: Office of Institutional Assessment and Testing, Western Washington University.

Trimble, J. E., Simpson, C.H., McKinney, G.R. (1994, June). **Strategic Plans and Procedures to Improve Degree Progress and Persistence at Western Washington University (Report 1994-03)**. Bellingham, WA: Office of Institutional Assessment and Testing, Western Washington University.

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Simpson, C.H., Clark, L. (1994, September). **Community Service Activity by Western Washington University Students: Its Extent, Nature, and Impact on the Surrounding Community (Report 1994-05)**. Bellingham, WA: Office of Institutional Assessment and Testing, Western Washington University.

Simpson, C.H., Clark, L. (1994, September). **Port Angeles Area Employer Survey: Demand for Training in Environmental and Resource Management (Report 1994-06)**. Bellingham, WA: Office of Institutional Assessment and Testing, Western Washington University.

Simpson, C.H., Clark, L., McKinney, G.R., Trimble, J.E. (1994, September). **The Masters Degree Program at Western: A Follow-up Survey of the Masters Class of 1993 (Report 1994-08)**. Bellingham, WA: Office of Institutional Assessment and Testing, Western Washington University.

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1995

Eaton, Marie D., McKinney, G.R., Trimble, J.E., and Andrieu-Parker, J.M. (1995, May). **Portfolio Analysis and Cognitive Development at Fairhaven College (Report 1995-01)**. Bellingham, WA: Office of Institutional Assessment and Testing, Western Washington University.

1995 (cont.)

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