

**Diablo Valley College
Pleasant Hill, California**

**College Guide for
Assessment of Student Learning
Outcomes**

November 18, 2004

College Guide for Assessment of Student Learning Outcomes

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Background

What should be the result of a student's education?

This is one of the most natural questions to ask when considering an educational institution, program or course. It is a question as old as education. *“What mathematical skills should a person have after completing their general education?” “What course teaches a student how to write a proper business letter?” “What kinds of positions should a graduate of our HRM program be qualified for?”*

In June 2002, the ACCJC (Accrediting Commission for California Junior Colleges) established new accreditation standards (see excerpt in info packet) which ask colleges to systematically establish learning outcomes by considering questions such as those written above. In addition, the standards ask colleges to assess the actual results – how well *does* the education we provide produce the results we are hoping for? *“What percent of the students who completed that course could, in fact, write a proper business letter?”* And finally, the standards ask us to maintain an ongoing, self-reflective dialogue about the results and ways to improve upon them if desired. *“Currently only 60% of those students could write a proper business letter. What can we do to increase that?”* That cycle (observing that the process is inherently cyclical – set goals, see results, modify strategies) will serve to enhance a campus-wide sense of educational purpose.

In January 2003, the DVC Faculty Senate created a task force called the Teaching Strategies/Student Learning Outcomes Task Force [TS/SLO]. In April 2003, the Faculty Senate adopted the recommendations of the task force (with slight modifications), which focused on the adoption of a five-part assessment cycle, based partly on a model which was presented to many faculty members by the Nichols in January 2003. The assessment cycle is intended to be phased in incrementally over five years, with the first year being considered a learning cycle, so that faculty own the process by understanding it completely. Last year was the learning cycle, where three departments experimented with starting an assessment cycle and following the template. This year we are expanding the number of departments which participate.

Diablo Valley College is making giant strides – seeking out those who otherwise would have the narrowest hope of succeeding and giving them a real opportunity to participate in the state's economy and contribute to society. For some students, DVC is offering a genuine chance to graduate from the University of California and California State

University. For other students, success amounts to a skill and a job, and DVC is the link between them.

However, there is more to be done in order to enhance the quality of student learning and therefore improve students' chances for success in either the transfer or the vocational programs. Enhancing the quality of learning will depend largely on the existence of an effective, systematic, and ongoing process for assessing student learning outcomes.

For the assessment process to be effective, it must be *comprehensive* (encompassing all academic and educational support services of the college), *participatory* (inclusive of faculty, staff, administration and students), *realistic*, *flexible*, and *relevant* to the educational and teaching environment of the college. Furthermore, assessment of student learning outcomes must be *dynamic*, subject to continuous updating and revision; and must adapt as the college itself evolves and changes.

In 2002, the Leadership Council at DVC took the initiative to begin a discussion of student learning outcomes. Two committees were established to establish the guidelines and oversee the development and implementation of assessment of student learning on the campus. These two committees include a college-wide umbrella committee and a faculty senate committee. The Student Learning Outcome Committee is a college-wide committee that was established in 2003 to coordinate the development and implementation of a comprehensive program for the assessment of student learning outcomes at all levels of the institution with emphasis on student services. The Senate committee on the other hand has the responsibility of coordinating the implementation of assessment of student learning outcomes at the instructional level.

According to DVC's *Handbook on College Committees* (2004), the College-Wide committee has the following roles and responsibilities:

- Establish a level of consensus and clarity regarding the overall direction of student learning outcomes and the steps that must be taken to produce desired results
- Coordinate institutional efforts and initiatives regarding student learning outcomes, including activities carried out by the instructional units and student support units
- Encourage sharing of information and expertise among the faculty and staff at all levels
- Provide a stronger basis for making decisions regarding the allocation of resources needed to enhance student learning outcomes
- Provide specific guidance and coordination of assessment efforts for student services and other administrative units

On the other hand, in 2003, the Faculty Senate Committee completed a report and developed the broad guidelines for assessment of student learning. This report is quoted in this document. The following statement of philosophy and guiding principles are based on the 2003 Senate report.

Philosophy Statement

Assessment at Diablo Valley College is an on-going faculty-driven process for understanding and improving student learning. Efforts are directed toward the improvement of institutional effectiveness.

[Assessment] involves making our expectations explicit and public; setting appropriate criteria and high standards for learning quality; systematically gathering, analyzing, and interpreting evidence to determine how well performance matches those expectations and standards; and using the resulting information to document, explain, and improve performance. When it is embedded effectively within larger institutional systems, assessment can help us to focus our collective attention, examine our assumptions, and create a shared academic culture dedicated to assuring and improving the quality of higher education. (Angelo, T., 1995, p.7)

Assessment is important because it

- helps to *demonstrate* and *improve* student learning and student success.
- includes systematic collection of data and information from courses, program, and the institution.
- is an integral part of teaching and learning and is used to help both.
- supports Diablo Valley College's mission to maintain a high-quality teaching/learning environment.
- focuses on outcomes, but also includes process, especially in seeking ongoing improvement.
- is needed for accreditation, accountability, and institutional effectiveness.

The focus of the assessment effort is enhanced student learning and a process by which program accomplishments may be identified and validated. The faculty will drive this effort and use gathered data for academic program improvement.

Guiding Principles

1. Assessment of student learning outcome processes at Diablo Valley College is an academic issue and, as such, will be a faculty-driven process.
2. Assessment efforts will be respectful of academic freedom, faculty responsibility for the curriculum, and shared governance.
3. Assessment will be decentralized process that will build upon departmental assessment efforts already in place, efforts that are directed by the faculty.

4. Assessment will include systematic collection of reliable data that will be used to improve student performance.
5. Assessment results will be used to guide practices affecting student learning outcomes and student success. It is a means to improve student learning; it is not an end in itself.
6. Assessment results will be used for identifying strengths and shortcomings in academic programs based on analysis and reflection by the faculty.
7. Assessment will be a process of ongoing dialogue and analysis of data that will result in improved student success.
8. Assessment should be ongoing and institutionalized and become part of the accepted culture of the college.
9. Assessment will not be used for any faculty evaluation
10. Assessment will not be used for any personnel or student evaluation.

Characteristics of Effective Assessment

An effective assessment process consists of the following five basic components:

- A clearly-defined statement of institutional purpose as it relates to student learning outcomes.
- A set of educational goals or expected educational outcomes.
- Assessment methods for evaluating the extent to which those goals are being achieved.
- Criteria for assessment to measure the extent of goal accomplishment.
- A mechanism for using assessment results to improve educational programs, services, and operations.

The order in which these five components are listed may create the impression of a linear process wherein one neatly-packaged set of activities follows another in an established, orderly sequence. The reality is that institutions are likely to be involved simultaneously in assessing yesterday's results, addressing today's problems, and planning tomorrow's possibilities. The assessment process is therefore understood to be dynamic, interactive and ever-changing.

Accreditation Standards

The Accrediting Commission for Community and Junior Colleges (ACCJC) revised the accreditation standards in 2002 and placed emphasis on improving student learning outcomes. The approved standards of June 2002 state that the primary purpose of an ACCJC-accredited institution is to foster learning in its students. An effective institution

ensures that its resources and processes support student learning, continuously assess that learning, and pursue institutional excellence and improvement. An effective institution maintains an ongoing, self-reflective dialogue about its quality and improvement. The new accreditation standards consist of four parts as follows:

Standard I indicates that the institutional mission should provide the impetus for achieving student learning and other goals that the institution endeavors to accomplish. The institution should provide the means for students to learn, assess how well learning is occurring, and strive to improve that learning through ongoing, systematic, and integrated planning.

Standard II states that instructional programs, student support services, and library and learning support services facilitate the achievement of the institution's stated student learning outcomes.

Standard III emphasizes that human, physical, technology, and financial resources enable these programs and services to function and improve.

Standard IV states that ethical and effective leadership throughout the organization guides the accomplishment of the mission and supports institutional effectiveness and improvement.

The specific reference to instructional programs is presented below.

Standard II: Student Learning Programs and Services

The institution offers high-quality instructional programs, student support services, and library and learning support services that facilitate and demonstrate the achievement of stated student learning outcomes. The institution provides an environment that supports learning, enhances student understanding and appreciation of diversity, and encourages personal and civic responsibility as well as intellectual, aesthetic, and personal development for all of its students.

A. Instructional Programs

The institution offers high-quality instructional programs in recognized and emerging fields of study that culminate in identified student outcomes leading to degrees, certificates, employment, or transfer to other higher education institutions or programs consistent with its mission. Instructional programs are systematically assessed in order to assure currency, improve teaching and learning strategies, and achieve stated student learning outcomes. The provisions of this standard are broadly applicable to all instructional activities offered in the name of the institution.

1. The institution demonstrates that all instructional programs, regardless of location or means of deliver, address and meet the mission of the institution and uphold its integrity.
 - a. The institution identifies and seeks to meet the varied educational needs of its students through programs consistent with their educational preparation and the diversity, demographics, and economy of its communities. The institution relies upon research and analysis to identify student learning needs and to assess progress toward achieving stated learning outcomes.
 - b. The institution utilizes delivery systems and modes of instruction compatible with the objectives of the curriculum and appropriate to the current and future needs of its students.
 - c. The institution identifies student learning outcomes for courses, programs, certificates, and degrees; assesses student achievement of those outcomes; and uses assessment results to make improvements.
2. The institution assures the quality and improvement of all instructional courses and programs offered in the name of the institution, including collegiate, developmental, and pre-collegiate courses and programs, continuing and community education, study abroad, short-term training courses and programs, programs for international students, and contract or other special programs, regardless of type of credit awarded, delivery mode, or location.
 - a. The institution uses established procedures to design, identify learning outcomes for, approve, administer, deliver, and evaluate courses and programs. The institution recognized the central role of its faculty for establishing quality and improving instructional courses and programs.
 - b. The institution relies on faculty expertise and the assistance of advisory committees when appropriate to identify competency levels and measurable student learning outcomes for courses, certificates, programs including general and vocational education, and degrees. The institution regularly assesses student progress towards achieving those outcomes.
 - c. High-quality instruction and appropriate breadth, depth, rigor, sequencing, time to completion, and synthesis of learning characterize all programs.
 - d. The institution uses delivery modes and teaching methodologies that reflect the diverse needs and learning styles of its students.

- e. The institution evaluates all courses and programs through an on-going systematic review of their relevance, appropriateness, achievement of learning outcomes, currency, and future needs and plans.

Levels of Assessment

Identification of intended educational outcomes is crucial for the success of assessment efforts. These educational outcomes may be addressed at three levels:

- Institutional level
- Program level
- Course level

Assessment at the **institutional level** will focus on college-wide programs such as general education, transfer, or developmental education. Regarding general education, DVC is fortunate to have a fairly developed set of educational goals/objectives that appear in the Catalog (*DVC Catalog 2003-04*, pp. 42-43). These goals fall into seven categories as follows:

- Language and Reasoning (English Composition, Communication, Analytical Thinking, and Mathematics)
- Natural Sciences
- Arts and Humanities
- Social and Behavioral Sciences
- Physiological and Psychological Studies (Human Health, Interpersonal Relations, and Physical Education)
- Multicultural Studies
- Information Competency

At the **program level**, assessment will focus on student learning outcomes for the exiting inventory of degrees and certificates as well as for other clearly definable programs related to specific groups of students (e.g. mathematics for science and engineering students)

At the **course level**, assessment will focus on student learning outcomes for individual courses. Multiple-section courses should share the same learning outcomes, regardless of the teacher or the time for offering (day vs. evening and weekend; longer terms vs. shorter terms, etc.)

It is important for the intended educational outcomes to be consistent with the institutional mission or the institutional purpose. Furthermore, these outcomes should be reasonable and attainable given the ability of the students enrolled at DVC.

Assessment Methods:

Assessment methods can be indirect, using criteria that assume learning has taken place, or they can be direct, that is using criteria that measure student learning directly. Examples of indirect measures include grades, success rates, retention rates, enrollment patterns, degree and certificates awarded, placement, outcomes in special programs, and student equity data. Direct student learning outcomes are measures of competencies or attainment levels reached by students, i.e. skills, abilities, knowledge. At this juncture, colleges are at various stages of development and implementation of assessment plans that can lead to evidence of student learning. You will want to look for evidence that the institution is at the minimum beginning to plan for assessment of student learning outcomes.

As you look for evidence that the institution is evaluating student learning outcomes, you will want to think about the **designed** curriculum, the **taught** curriculum, the **learned** curriculum, bearing in mind that grades are not the best evidence of student learning. The designed curriculum is what is in the college catalog and in official courses outlines, the taught curriculum can be found in syllabi, and the learned curriculum is what assessment is all about---what have students learned? What can they do? What do they care about? Included among the methods commonly used to assess student learning are:

- capstone experiences (research papers, ways that demonstrate attitudes
- and values, case studies)
- classroom assessment techniques
- dance productions, music productions
- evaluation by advisory councils
- evaluation by employers
- exit exams
- exit interviews
- faculty-developed rubrics for scoring student work
- licensure information
- locally developed tests
- paintings, drawings, newspaper articles, computer programs
- portfolios (student work is collected and reviewed for evidence of learning and development)
- practicum and internship evaluation
- standardized tests

Regarding general education, you might seek evidence that the faculty have had dialogue about their philosophy of general education and that the goals and objectives of course outlines guide the faculty in teaching the courses. You might want to assess the utility of goals and objectives as the basis for assessment.

The Commission's expectation for general education is that the courses introduce students to the humanities and fine arts, the natural sciences, and the social sciences and that the institution can provide evidence that students know how to: investigate, analyze,

use critical thinking skills, relate to and negotiate with others, be sensitive to the values of others, develop a sense of responsibility for actions, and develop and enthusiasm for learning on a continuous basis.

Regarding student services, you might seek evidence that those services are part of a program review and that these services are at least beginning to look at their role as contributors to student development and that assessment of each of these services is occurring. Some of the methods used by student services might include:

- transcript analysis (course taking patterns)
- surveys (student satisfaction surveys)
- retention and completion rates
- extracurricular activity and its role in developing leadership abilities or such
 - things as self-esteem and confidence
- assessment of learning strategies courses and learning communities
- tracking counseling
- tracking transfer
- analyzing “alert plans”
- studying outcomes of students identified or referred who utilized
 - services (vs. non-users)
- follow up on EOP&S students
- exit interviews with students
- longitudinal studies of cohort groups with specific student groups
 - (international, Puente, other high risk groups or gender, age,
 - ethnicity)
- looking at risk-taking, career selection, decision-making, leadership
- assessing orientation: what students supposed to learn? what did they learn?
- assessing success rates for at-risk students

The typical output measure of student services include course completion rates, basic skills completion, retention rates, persistence rates, graduation rates, transfer rates, success after transfer, and job placement.

Direct assessment of cognitive learning may be related to either general education or to specialized knowledge in the major field.

Assessment of General Education:

General education emphasizes the breadth of knowledge attainment across the curriculum rather the in-depth study in a given discipline. Assessment of general education should reveal the student’s understanding and grasp of basic concepts and skills in the liberal arts

and sciences including communication, computation, critical thinking, social and natural sciences, and humanities. Instruments used for assessment may be of two types:

- Nationally-developed standardized tests
- Locally-developed tests by the faculty

Several standardized tests for assessing general education have been available in the market for more than 15 years. These tests include:

- ACT Assessment
- College Outcome Measures (COMP)
- Collegiate Assessment of Academic Proficiency (CAAP)
- Scholastic Aptitude Test (SAT)
- College-Level Examination Program (CLEP)
- Graduate Record Examination (GRE)
- Academic Profile by the Education Testing Service (ETS)
- College BASE developed by the University of Missouri

Choice of Method:

Faced with this wide assortment of instruments, faculty members and administrators should consider their indented learning outcomes together with the strengths and weaknesses of standardized and locally developed examinations before committing to any particular program.

Advantages and Disadvantages of Standardized and Locally-Developed Tests

Type of Test	Advantages	Disadvantages
Standardized Tests	<ul style="list-style-type: none"> • Origination by a panel of experts reduces charges of subjectivity or bias. • Normative data from other institutions are available for comparison. • Easy to administer. • Validation and reliability are established. 	<ul style="list-style-type: none"> • Contents may not reflect the institution’s intended student outcomes. • Scores may not be reported in a meaningful for assessment. • Normative comparisons may not be appropriate. • Expensive to purchase and score.

Locally-Developed Test	<ul style="list-style-type: none"> • Contents can be tailored to match expected student learning outcomes. • Detailed analysis is possible to accomplish assessment needs • Faculty members are more likely to use the results. • Faculty ownership is assured. 	<ul style="list-style-type: none"> • Commitments of faculty time and energy over an extended period of time to develop, score, and maintain the test. • Lack of normative data for comparison. • Little external credibility for accountability purposes. • Absence of validity and reliability research.
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Assessment in the Major Field (Vocational Areas):

Assessment in the major field aims at measuring the in-depth understanding of specific subjects or disciplines. Once again, the college has a choice between the standardized tests and the locally-developed tests. These tests are developed for the most part in the vocational and technical areas. There are several tests developed by national organizations.

Tests developed by the *National Occupational Competency Testing Institute* (<http://www.nocti.org>; telephone # 1-800-334-6283) include the following:

Auto Diesel Mechanics Automotive Technician Building Construction Building Trades Maintenance Business Information Processing CAD/CAM Cabinet Making Carpentry Clothing and Textile Management & Production Collision Repair Commercial Foods Computer Programming Computer Technology Construction Electricity Construction Masonry Cosmetology Dental Assisting Diesel Engine Mechanics Early Childhood Care & Education Electrical Construction Electronics Food Production, Management and Services Forestry Products and Processing General Drafting and Design Graphic Communication Technology Health Assisting Heating, Ventilation & Air Conditioning Heavy Equipment Maintenance and Repair	Home Health Aide Horticulture Hospitality Management Industrial Electricity Industrial Electronics Industrial Maintenance Mechanic Law Enforcement Manufacturing Technology Marine Mechanics Medical Assisting Metal Working and Fabrication Microcomputer Repair Motorcycle Mechanics Nursing Assisting Painting and Decorating Plumbing Precision Machining Production Agriculture Refinishing Technology Retail Commercial Baking Retail Trades Robotics Technology Technical Drafting Truck and Bus Mechanics Warehousing Services Welding Workplace Readiness
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Tests developed by the *National Institute for Certification in Engineering Technologies* (<http://www.nicet.org> ; telephone # 1-888-476-4238), include the following:

- Building Construction/Water and Waste Plants
- Construction Material Testing
- Electrical Communication Systems
- Fire Protection
- Geotechnical
- Industrial Instrumentation
- Land Management and Water Control
- Transportation (Bridge Safety and Highway)
- Underground Utilities Construction

In addition, licensure examinations are also available for community college graduates in the following areas (examples):

- Aviation Maintenance
- Computer Applications
- Computer Systems Engineering and Network Management
- Dental Hygiene
- Diagnostic Medical Imaging
- Dietetics
- Nursing (RN, LVN, CNA)

Major Field Achievement Tests (MFAT) are also available through the Educational Testing Service (ETS) for specific disciplines in business, chemistry, and psychology. These tests are more designed for the four-year baccalaureate programs.

Locally-developed instruments aimed at program improvement have been developed by various colleges and universities.

Choice of Method:

Arguments for and against the use of standardized tests (versus faculty developed local tests) echo those presented earlier under general education. While there is no single “correct” solution, it is important for the faculty to compare the curriculum content and the intended student learning outcomes for the program with the questions on the standardized tests prior to making a final decision. The appropriate answer to the question of whether to buy or develop a test may vary among departments and programs.

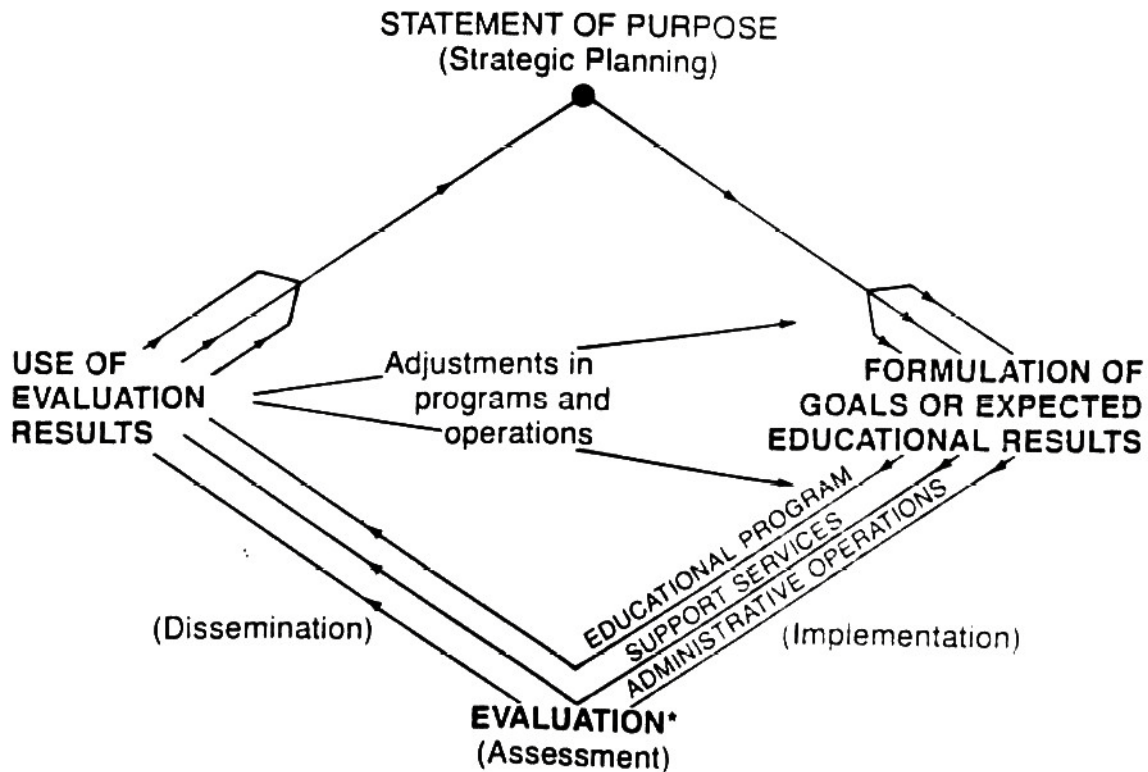
Student Learning Outcomes Model for Diablo Valley College

The success of an effective assessment of student learning outcomes must be anchored in an ongoing planning and evaluation process that takes into consideration the use of assessment results to improve programs, services, and operations. The process of “closing the loop” or use of results is crucial to the success of the assessment program. The proposed model consists of five basic components, namely:

- Development of a clearly defined statement of institutional purpose.
- Formulation of goals or expected learning outcomes.
- Development of procedures for assessing the extent to which those outcomes are being achieved.
- Analysis of the assessment results
- Use of assessment results to improve educational programs, services, and operations.

Each one of these components will be discussed in the following pages. A pictorial presentation of the model appears below.

Student Learning Outcome Model



a. Statement of Purpose:

The statement of institutional purpose is frequently identified as the mission statement and it should include the following:

- A brief history of the institution (including founding date, founders, location or locations, and significant developmental changes over the years).
- Pertinent descriptive information (e.g., public/private, two-year, rural/suburban/urban, coeducational, affiliation, etc.)
- Statements expressing essential beliefs, values, or intent of the institution.
- Description of the types of students that the institution hopes to attract, often accompanied by students about the types of occupations or endeavors for which graduates will be prepared to undertake.
- Delineation of the geographic region for which the institution intends to provide services.
- Outline of the major functions of the institution (e.g., general education, developmental education, vocational and technical education, professional education, student development, community or public service, research, continuing education, etc.)

- General description of the skills, knowledge, experiences, and attitudes ideally to be acquired or developed by the institutions students.

Because a clear statement of purpose describes in general terms the desired results of the educational programs, it also defines the fundamental criteria for evaluating institutional effectiveness. The statement, therefore, may serve several important functions:

- To provide guidance for administrative decisions regarding the overall direction of the institution.
- To provide direction to each of the divisions and departments of the institution, creating an “umbrella” under which those units may plan, operate, and evaluate their program.
- To establish a general “blueprint” for the development of processes for assessing and improving institutional effectiveness.
- To provide a framework for the formulation of more specific goals, including expected student learning outcomes.

Individual divisions, departments, and programs may articulate their own statements of purpose that express the institutional purpose at their own respective levels.

b. **Formulation of Goals or Expected Student Learning Outcomes**

While goal setting may occur at various levels of the institution, the congruence of those goals is important, and the connecting theme is their relationship to institutional purpose. Again, that relationship is critical because it is through the evaluation of goal achievement that the institution’s effectiveness in fulfilling its purpose will be judged. As a starting point, goal statements at DVC may be formulated at two levels:

Institution-wide Aspirations: These broad aspirations may fall into four categories:

- The outcomes of general education
- The outcomes of the transfer program
- The outcomes of developmental education.
- The personal development of students

Specialized Goals for Academic Departments: The great bulk of departmental and institutional effort will be consumed in the implementation of plans through the development of programs and curricula, offering of classes, provision of support services, conduct of administrative operations, and other important work of the educational enterprise. Assessment of student learning outcomes at the departmental or program level will focus on student competencies related to degrees, certificates

approved by the State of California as a starting point. The following certificates are currently in place:

Administration of Justice	Early Childhood Education – Site Supervisor
Alcohol and Drug Studies	Early Childhood Education – Teacher
Architecture Technology	Electronics Technology
Broadcast Communication	Engineering Technology – Civil Engineering
Business - Accounting	Engineering Technology – General Drafting
Business – Office Professional	Engineering Technology – Material Testing
Business – Real Estate	Engineering Technology – Mechanical Drafting
Business – Real Estate Broker's License	Engineering Technology – Surveying
Business – Real Estate Sales Person's License	Horticulture
Business – Retailing	Horticulture – Landscape Design
Business – Small Business Management	Horticulture – Landscape Maintenance
Computer and Information Science	Hotel/Restaurant Management – Baking/Pastry
Computer Science – Computer Hardware	Hotel/Restaurant Management – Culinary Arts
Computer Science – Microcomputer Software Support	Hotel/Restaurant Management – Hotel Administration
Computer Technician	Hotel/Restaurant Management – Restaurant Management
Construction and Building Inspection	Library and Information Technology
Construction Management	Machine Technology
Construction – Supervision	Management Studies
Dental Assisting	Multimedia – Advanced
Dental Hygiene	Multimedia - Basic
Dental Laboratory Technology	Music Industry Studies
Early Childhood Education – Associate Teacher	Respiratory Therapy
Early Childhood Education – Family Day Care Provider	Women's Studies
Early Childhood Education – Master Teacher	

c. **Assessment Methods/Procedures**

The institution's task is to identify the specific means of evaluating each of the significant goals set forth by various components of the institution. In describing both expected student learning outcomes and assessment procedures, the following conditions should be met:

- Use clear and explicit language with action verbs.
- Specify appropriate time frames (e.g., for periodic assessment for achievement of particular goals over several years, etc.)
- Address both minimum standards and targets for excellence.
- Indicate at what level (e.g., program, department, division, institution, etc.) the assessment will be conducted and used.
- Designate responsibility for implementing assessment and for assuring appropriate use of assessment results.

A variety of assessment methods are available. The following list provides examples of student learning outcomes frequently employed in the assessment process:

- Student achievement in general education
- Student achievement in the major field
- Student perceptions of their development toward educational objectives
- Opinions of program quality given by student, alumni, employers, and drop-outs

- Job replacement rates
- Rates of placement and indicators performance in graduate/professional education
- Performance after transfer from 2-year to 4-year institutions
- External recognition of achievements of students and graduates.

Despite the variety of methods and instruments currently available, the expectation is that DVC will have processes that are appropriate to its purpose, resources, and environment. No ideal set of universally appropriate methods for assessment presently exists. Though it can be anticipated that experience over time will engender development of many new evaluation techniques, it will remain necessary and entirely proper for DVC to choose among the variety of assessment methods available, and, on occasion, to devise unique procedures. The important objective is to identify that array of assessment procedures which most clearly and accurately reflects the level of achievement of institutional goals and student learning outcomes.

d. **Use of Results**

An important component of this model is the clear communication of pertinent assessment results to the institution's academic constituents. Data or information provided to or by each department should focus primarily upon that unit's operations and/or the accomplishments of its students. The information provided should meet certain quality standards and should be available in a central location. Furthermore, there should be a commitment on the part of the institution to use the results with a keen awareness of the extensive interdependency that may exist among the college components.

Quality of Information: The information should be

- Easily understood by the persons expected to use it.
- Clearly related to pertinent statements of goal or expected student learning outcomes
- Compared (when feasible) to appropriate reference groups, either internal or external.
- Analyzed in reference to comparable assessments repeated at period intervals.

Central Location: Also desirable is the designation of a central location where copies of assessment reports are filed. The information base thereby developed will be useful at the institutional level in planning, in the process for reaffirmation or

accreditation, in the refinement of planning and evaluation procedures, and in a variety of other operations.

Interdependency: Following review and discussion of assessment findings, DVC and/or its appropriate units should determine the uses of significant findings in improving programs and operations. In describing uses of assessment findings, the college should recognize the extensive interdependency that exists among institutional components. An evaluation of admissions procedures, for example, may produce findings pertinent not only to the admissions office but also to the public relations unit, the counseling office, the president, and department faculty.

Commitment: In the absence of commitment to useful assessment results, all previous steps in the planning and evaluation process would become little more than futile exercises which an institution can ill afford, and the institution’s planning and evaluation process could not be considered adequate. The application of this model should enable the college to identify any substantial discrepancies between statements of purpose and goals and the results of assessment and to indicate steps planned or taken to address those discrepancies.

(See Appendix for assessment models for general education and vocational programs)

Calendar of Assessment Cycle

Basic Cycle

1. State general purpose
2. State desired outcomes
3. Decide how to measure
4. Apply/collect
5. Use results to make changes

Suggested Timeline

Note: Departments/programs/divisions/committees should adapt this to suit individual needs.

Aug	Sept	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May
results	purpose outcomes	How to							
	Apply and collect (ongoing)				Apply and collect				

August/September

- Summarize results from previous year.

- List of results from previous year posted.
- Ongoing statement of purpose and outcomes posted.
 - Faculty suggests changes to statement in writing.
Suggestion: have a paper posted next to the statement for two weeks for people to write on, to facilitate a relaxed exchange of ideas.
 - Reaffirm or modify statement at (department/program/division/committee) meeting

October/November

- List of past year's measuring methods posted (could be same as "results")
 - Faculty indicates which measuring methods they want to continue.
 - Faculty adds new suggestions for how to measure.
- Suggestion: Have a paper posted next to the statement for one month for people to write on, to facilitate a relaxed exchange of ideas.
 - Finalize at (dept./prog./div./comm.) meeting
 - Determine who will be responsible for collecting/summarizing.

December

- Collect results for fall for ongoing methods already in place, or new methods for which the data is already or readily available.

January - May

- Apply measures and collect data.

Ongoing

- At any time in the cycle, department/program/division/committee uses results to suggest changes.

Language Standards for Course Outlines

In 1956 Benjamin Bloom edited the now classic Taxonomy of Instructional Objectives. He maintained that not only was the identification of program or course objectives inherently valuable for clarifying the purpose of the educational offering, but that well constructed objectives guided selection and organization of learning experiences. This, of course, is a key consideration to promoting not only the achievement of the objectives, they are educational outcomes or standards against which we can evaluate achievement. The Taxonomy identified three areas in which learning takes place and which can be

addressed by objectives or standards – the cognitive, affective, and psychomotor domains.

The Cognitive Domain We are most accustomed to dealing with the cognitive domain, which deals with the recall or recognition of knowledge and the development of intellectual ability. Six major classes are usually identified: (a) knowledge, (b) comprehension, (c) application, (d) analysis, (e) synthesis, and (F) evaluation. Each of these classes becomes progressively more complex and in theory builds upon the previous level. In other words, not only is synthesis a more complex operation than knowledge, but the ability to synthesize depends upon the foundation of knowledge possessed by the learner.

The following list of verbs is arranged by the classes above. The verbs are measurable and observable behaviors expected of the learner. While it is certainly admirable to “gain an understanding,” it is not possible to observe or measure understanding itself. What does the learner have to do to indicate that he or she “understands?” Use of an action verb enables both the teacher and learner to know what comprises successful learning. It is preferable to use only one verb in each standard although there are instances when two are needed for clarity or texture.

[Verbs eliminated to avoid redundancy with first page – definitions given slightly different]

Knowledge: (Standards that ask the learner to recognize and recall facts and specifics)

Comprehension: (Standards that ask the learner to summarize or paraphrase given information)

Application: (Standards that ask the learner to use information in a situation different from the original learning context)

Analysis: (Standards that ask the learner to separate the whole into its parts, to better understand the organization of the whole and the relationships between the parts)

Synthesis: (Standards that ask the learner to combine elements learned into a new entity)

Evaluation: (Standards that ask the learner to make decisions, judge, or select based on criteria and rationale)

The Affective Domain Objectives or standards which emphasize a feeling tone, an emotion, or a degree of acceptance or rejection fall within the affective domain. They are sometimes classed simply as attitudes. These standards require internalization, not just acquiring a body of knowledge. In the history of curriculum construction and the study of

objectives, a marked decrease, almost a cessation, has occurred in the attention given the affective domain. This almost assuredly is not due to a belief that this is an unimportant area, but is due instead to the difficulty encountered in stating observable behaviors for measurement of these standards.

The key to observing desired outcomes in the affective domain lies with a choice of personal action that the learner is expected to exhibit. Often, learner self-assessment measures are used to evaluate these standards or outcomes. Since choices are often inextricably linked to a situation, frequently the situation under which the behavior is expected must be stated. For example, a nursing student would demonstrate an enjoyment of *being or becoming* a nurse if spare time during the day is spent with a patient rather than at the nurses' station. A student would demonstrate an increased appreciation or interest gained from a survey art appreciation course by the numbers and varieties of museums or exhibits attended voluntarily.

The achievement of an affective standard is often not a met/not met situation, but rather achievement somewhere on a continuum since it is a process of learner internalization and change. Bloom and his colleagues felt that there were levels of complexity within the affective domain as there were within the cognitive domain. A learner would first become aware of a phenomenon and be able to perceive it, and then be willing to focus on it, followed by a positive response and eventually a seeking out behavior. These levels are identified as (a) receiving, (b) responding, (c) valuing, (d) organization, and (e) characterization by a value.

The Psychomotor Domain This domain largely involves motor skills, one of the most obvious kinds of human capabilities. A verb very frequently associated with this domain is executed. The emphasis is on the performance of certain specified skills. Frequently these outcomes are criterion-referenced and the learner is held against a specified standard. An example for a student learning word processing would be a set words-per-minute expectation.

The standards (objectives or outcomes) are pivotal in the construction of a good course outline. They operationalize the purpose of the course and provide a basis for evaluation. However, even more importantly they identify clearly for the learner what he or she is expected to do or learn to be successful.

CRIMINAL JUSTICE (Associate Degree)

CIP 43.0104

Intended educational Outcomes and Means of Assessment/Criteria for Success

1. Student will gain the skills necessary to continue education in the field of Criminal Justice without the loss of credit and without the increased time input at the institution.

- a. Ninety percent of all graduates will continue their education by transferring to four year institutions in an attempt to attain baccalaureate degrees.
 - b. Ninety percent of all Criminal Justice graduates attempting to obtain baccalaureate degrees will report no increase in expended time input at the institution to which they transfer and will receive comparable credit hours for classes taken at the institution to which they transfer.
2. Students not desiring a baccalaureate degree will be able to enter into and be successfully employed within the criminal justice field.
 - a. Thirty percent of all graduates not desiring a higher degree will report employment in one of the four basic subsystems of the criminal justice field (i.e., courts, corrections, law enforcement, or probation/parole) on the Alumni Survey conducted annually.
 - b. Twenty percent of all graduates not desiring a higher educational degree will report employment in a related private security position that will directly utilize the knowledge base obtained from their associate degree educational experience as reported by respondents to the Alumni Survey conducted annually.
3. Students will be proficient in and possess an in-depth understanding of the criminal justice system and they will be capable of applying this knowledge in the field upon graduation.
 - a. Eighty percent of all graduates will be prepared during their seventh quarter of study to complete and successfully pass a locally developed and standardized Criminal Justice Proficiency Examination
 - b. Seventy percent of all Criminal Justice employers responding to the Employer Survey will indicate that 90% of their agency's employees, who graduated in Criminal Justice from the institution at hand, have the necessary skills and knowledge base to successfully be rated as highly competent employees.
4. Criminal Justice agencies will be more receptive to hiring college graduates possessing associate degrees in Criminal Justice.
 - a. Criminal Justice agencies and practitioners will indicate a 90% approval rating of hiring Criminal Justice graduates from the institution on the Employer Survey.
5. Graduating students desiring to enter the law enforcement profession will be certified in the Basic Law Enforcement Training Program.
 - a. One hundred percent of all Criminal Justice graduates desiring to enter into the law enforcement profession as an active law enforcement officer will be certified in the Basic Law Enforcement Training Program during the eighth quarter of studies at the institution.
 - b. One hundred percent of all Criminal Justice graduates participating in the Basic Law Enforcement Training Program will indicate on the Alumni Survey that the institution adequately prepared them for the academic work related to the program.
 - c. Eighty percent of all Criminal Justice graduates will score 80% or higher on the Criminal Justice Standards Examination.

NOT TO BE CONSIDERED AS A MODEL BUT AS AN EXAMPLE

MARKETING/RETAILING (Associate Degree)
CIP 08.0708

Intended Educational Outcomes and Means of Assessment Criteria for Success

1. Graduates of the Marketing/Retailing program will be employed in the field.
 - a. Fifty percent of the responding graduates of the Marketing/Retailing program will report employment in the field or obtaining additional education on the

- Graduating Student Survey administered within the first five months after graduation.
- b. Eight percent of the responding (previous year) graduates of the Marketing/Retailing program will report employment in the field or in additional education at a four-year institution on the Alumni Survey distributed one year after graduation.
2. Graduates of the Marketing/Retailing program will be technically proficient.
 - a. At the close of their final term, 90% of the graduates will be able to identify problems and opportunities and construct good decisions within a given period of time in case studies and computer simulations prepared or “as directed” by the Marketing/Retailing program faculty in the Capstone course Retail Merchandising Management (MKT 249).
 - b. Ninety percent of student will successfully complete the Marketing and Retailing internship (MKT 248) with an organization as rated by the employer.
 3. Employers of the Marketing/Retailing program graduates will rate the technical and academic skills of the employees as average or above.
 - a. The Employer Survey conducted each year will rate the graduates as above average on the three course are performance (competency) survey questions. “Above average” is higher than a 3.0 on a 5.0 scale; however; if any of the three survey questions has an individual rating below 3.0 that individual course are performance will be reviewed further.
 - b. Sixty percent of the respondents to an Employer Survey conducted each year will respond that they would employ future graduates of the Marketing/Retailing program.

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ELECTRONICS AND COMPUTER ENGINEERING (Associate Degree)
CIP 15.0301

Intended Educational Outcomes and Means of Assessment Criteria for Success

1. Graduates will have a strong basic understanding of the fundamental principles of electricity and electronics and specific technical expertise in their area of specialization.

- a. Server-five percent of graduating students responding to a survey will indicate that they “strongly agree” or “agree” that they have a basic understanding of the fundamental principles of electricity, electronics, and specific technical expertise in their area of specialization.
- b. Seventy percent of those employers responding to the Employer Survey will “strongly agree” or “agree” that the students educated by the institution at hand have a basic understanding of the fundamental principles of electricity, electronics, and specific technical expertise in their area of specialization.
2. Graduates will be able to obtain gainful employment by applying the above skills to business and industry.
 - a. Sixty percent of graduates responding will be employed in the field or enrolled in a four year institution when surveyed one year after graduation.
3. Employers of the new graduates will indicate a willingness to hire more graduates of the program.
 - a. Seventy-five percent of employers of recent Electronics and Computer Engineering graduates will indicate in a telephone survey that they are satisfied with the level of training the employee has for the workplace.

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DENTAL HYGIENE (Associate Degree)
CIP 51.0602

Intended Educational Outcomes and Means of Assessment Criteria for Success

1. Graduates of the Dental Hygiene program will be able to demonstrate a sound grasp of basic skills and knowledge in the basic sciences, dental sciences, general education, and dental hygiene science.

- a. Eighty-five percent of the Dental Hygiene program graduates taking the Dental Hygiene National Board will pass the examination.
2. Graduates of the Dental Hygiene program will be technically proficient.
 - a. At the close of their final term, 100% of the graduates will be able to demonstrate dental hygiene skills with a 77% proficiency rate as evaluated by the Dental Hygiene program faculty in the Capstone course Clinical Dental Hygiene V (DEN 217).
 - b. Eighty-five percent of the Dental Hygiene program graduates taking a State Licensure Examination will pass the examination.
3. Graduates of the Dental Hygiene program will be employed in the field.
 - a. Fifty percent of the responding graduates of the Dental Hygiene program will report employment in the file on the Graduating Student Survey administered in the first five months after graduation.
 - b. Seventy-five percent of the responding (previous year) graduates of the Dental Hygiene program will report employment in the file on the Alumni Survey distributed one year after graduation.
4. Employers of the Dental Hygiene program graduates will rate the technical and academic skills of the employees as average or above.
 - a. The Employer Survey conducted each year will rate the graduates as above average on the three course area performance (competency) survey questions. “Above average” is higher than a 3.0 on a 5.0 scale; however, if any of the three survey question has an individual rating below 3.0, that individual course are performance will be reviewed further.
 - b. Seventy-five percent of the respondents to an Employer Survey conducted each year will respond that they would employ future graduates of the Dental Hygiene program.

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Your Community College, College Parallel, General Education Program

Expanded Statement Institutional Purpose

Mission Statement: Your Community College operates in the belief that all individuals should be...provided an opportunity to equip themselves for a fulfilling life and responsible citizenship in a world characterized by change.

Goal Statement: Insure that all recipients of an Associate of Arts Degree will be able to:

- a. Express themselves clearly and correctly in writing.
- b. Read and understand literature and current event articles commonly found in the print media.
- c. Perform the basic mathematical calculations required to function in society.

Program Intended Educational Outcomes:

4. Compose an essay concerning a current events topic assigned using standard writing English.

5. Read with understanding.

6. Accomplish basic mathematical skills.

Means of Program Assessment and Criteria for Success:

1a. 80% of those writing samples selected at the end of English 202 will pass the faculty written standards rubrics. No single rubric will exhibit more than ¼ of the students' ratings of "needs improvement" or "unsatisfactory"
1b. No more than 30% of those students skills scores on the "writing as a process" or the "conventions of written English" will be reported as "low" on the Collage BASE examination.

2a. Combined "high" and "medium" reported skills scores in "reading critically" will comprise 80% of those taking the Collage BASE examination.

2b. Combined "high" and "medium" reported skills scores in "reading analytically" will comprise 75% of those taking the Collage BASE examination.

3. An average of at least 300 will be achieved on the "General Mathematics" component of the Collage BASE examination and no more than 35% of the skill scores reported on any of its area will be "low"

Summary of Data Collected:

1a. 82% were found overall "acceptable" by the faculty panel. However, 41% were rated either "needs improvement" or "unacceptable" on the Thematic Organization rubric.
1b. 19% were reported as "low" on the "writing as a process" skill and 26% on the "conventions of written English" skill.

2a. 61% of scores were reported in the "high" or "medium" range.

2b. 78% of the scores on the "reading analytically" skills score were reported to be in the "high" or "medium" range.

3. The average score on the "General Mathematics" cluster was reported as 327. However, 27% of students scores were reported as being "low" in the "Using Statistics" skill areas.

Use of Results:

1a. . "Thematic Organization" rubric now emphasized in critique of English Comp I & II classes.
1b. Match of the "Conventions of Written English" skill area on CBASE with course syllabi reviewed. Additional collaboration with "writing center" has doubled the number of student writing examples reviewed in Comp I & II.

2a. History 106, Literature 105, Political Science 202, modified to require students on several occasions to read a passage critically, recognizing assumptions and implications, and evaluation ideas.
2b. No action this academic year, continue to monitor.

3. Math 107, Quantitative Reasoning, is now required for all college parallel students.

General Transfer Program

Expanded Statement Institutional Purpose

Mission Statement: YCC is an open-admissions community-based, comprehensive college designed to provide inexpensive, quality educational opportunities (college transfer, career/technical and continuing education)...

Goal Statement:

Serve tradition students seeking the first two years of instruction leading to a bachelor's degree.
 a. Recipients of ...degree will be readily accepted...
 b. Graduates will complete their bachelor's degrees a same rate as native students.
 c. Graduates will be as well prepared for their junior and senior year as native students

Program Intended Outcomes:

1. After one year of adjustment to the four-year college, the grades of students transferring will be similar to those of students who initially enrolled at four-year colleges.
2. Graduates transferring to a four year college as a full-time student will complete their baccalaureate degree at almost the same rate as those students originally enrolling at the four-year college.
3. The general education learning/skills developed in the college parallel program at YCC will be roughly comparable to that of native students

Means of Program Assessment and Criteria for Success:

1. Analysis of data concerning the grades of students transferring to four-year colleges will indicate that the differences between the average of transfer student's "GPA"s and that of native students is statistically insignificant one year after enrollment at the four-year college.
2. Analysis of data received from each of YCC three primary transfer student destinations will indicate that the difference in the average number of semesters to baccalaureate degree completion of full-time transfer students from YCC and students originally enrolling in four-year college is statistically insignificant.
3. Where available from four year colleges, the average score of YCC transfer students (when adjusted for entrance/placement examination differences) on standardized and locally developed means of assessment in general education will be roughly comparable by field to native four-year college students.

Summary of Data Collected:

1. Overall GPA of transfers found to be slightly (not significant) less than native students, but significantly less in math classes.
2. Degree completing time of YCC transfer students found to be virtually identical to native students.
3. Only Major State University reported comparative general education data. YCC graduates compared favorably (less than on MSD difference from MSU native students) except in the area of science reasoning where scores were almost 1.5 SD below mean of native students.

Use of Results:

1. Math 107 (college algebra) is being strengthened to better relate with calculus at four-year institutions.
2. No change necessary
3. Comparison of natural science syllabus at YCC vs MSU indicates that "scientific reasoning methodology" rather than specific knowledge regarding science subjects is emphasized at MSU. After serious consideration, YCC science faculty have decided not to change courses at YCC due to content emphasis of other institutions to which YCC students transfer.

Business Transfer Program

Expanded Statement Institutional Purpose

Mission Statement: YCC is an open-admissions community-based, comprehensive college designed to provide inexpensive, quality educational opportunities (college transfer, career/technical and continuing education)...

Goal Statement:

Serve tradition students seeking the first two years of instruction leading to a bachelor's degree.
 d. Recipients of ...degree will be readily accepted...
 e. Graduates will complete their bachelor's degrees a same rate as native students.
 f. Graduates will be as well prepared for their junior and senior year as native students

Program Intended Outcomes:

Students transferring from YCC after completing the Business Transfer program will:

1. After one year of adjustment, exhibit grades similar to those of students originally enrolled at four-year colleges.
2. If pursuing a degree as a full-time student, complete their BA degree in Business at almost the same rate as native business students enrolled at the four-year college.
3. Possess roughly the same level of knowledge/skills in basic business fundamentals as those native business students enrolled at the four-year college.

Means of Program Assessment and Criteria for Success:

1. Analysis of data concerning the grades of business transfer students from YCC at four-year colleges will indicate no substantial difference in grades in business courses from native business students enrolled at the four-year college.
2. Analysis of data received from each of YCC three primary transfer destination institutions will indicate that the difference in the average number of semesters to BA degree completion of full-time business transfer students and students originally enrolling in four-year college is statistically insignificant.
3. The scores of YCC business transfer students on the ETS Major Field Test in Business Administration (designed to assess the "common body of knowledge" covered in lower division business courses) administered by four-year college business schools will be similar to those native business students enrolled at the four-year college.

Summary of Data Collected:

1. Overall GPA of business transfer students not statistically different (-.07) than native business students. However, grades in junior level accounting courses substantially lower (almost .74) than native students. Student's from YCC found to be inexperienced in use of PC's.
2. Degree completing time of YCC transfer students found to be virtually identical to native students.
3. MFAT in business administration scores of YCC's business transfer students received for 327 students (72%) of those transferring. Overall YCC's scores quite similar to native students except in accounting where YCC's student score was substantially less.

Use of Results:

1. Use of PC's in YCC Accounting 201 greatly expanded to include four entirely computer based major accounting projects.
2. No change necessary
3. Accounting 101-102 and 201-202 sequences have been completely overhauled and brought into compliance with AACSB and AICPA guidelines. See extensively revised syllabus for each course.