

CHAPTER II

LEARNING OUTCOMES

EDUCATING MEN AND WOMEN

FOR

COMPETENCE, CONSCIENCE, AND COMPASSION

The first sentence of Santa Clara’s Mission Statement declares: “Santa Clara University is a Catholic and Jesuit institution that makes student learning its central focus, promotes faculty and staff learning in its various forms, and exhibits organizational learning as it deals with the challenges facing it.” The power of this commitment to student learning is that it gives a unifying purpose to the activities of teaching, scholarship, and service; it aims to concentrate academic, administrative, and support service organizations on how well their work advances that primary goal. By adopting this focus, the University is not saying that it will accept whatever students might wish or demand; rather it exists to advance something of perhaps less immediate utility but arguably more enduring value—namely their learning. The University also recognizes that it must continually refine its own understanding of the broad learning goals for students at a Jesuit institution and how those goals might be achieved. Thus, the “Mission Statement” declares the University’s intention to exhibit “organizational learning” as it deals with the challenges it faces.

The challenge for Jesuit institutions has remained constant over a 450-year history of involvement in higher education. In a message on the anniversary of the approval of the Society of Jesus (Exhibit II.1.1), the superior general of the Jesuits, Peter-Hans Kolvenbach, S.J., profiled the ideal graduates of a Jesuit education:

[W]e should recall that mediocrity has no place in Ignatius’ world view; he demands leaders in service to others in building the Kingdom of God in the market place of business and ideas, of service, of law and justice, of economics, theology and all areas of human life. He urges us to work for the greater glory of God because the world desperately needs men and women for competence and conscience who generously give of themselves for others.

To become “leaders in service to others,” students at a Jesuit institution must expand their

knowledge, hone their intellect, deepen their ability to make ethical decisions, and develop a responsible sensitivity to the needs of all members of society, especially those who are most in need. On the undergraduate level this means that, through their academic programs and co-curricular activities, graduating seniors will have acquired the knowledge, skills, and sensitivities to become responsible, wise, and creative leaders who will use critical thinking and good judgment in their work and communities. The graduate professional programs, which focus on a more specified body of knowledge, seek to prepare graduates to excel in their chosen profession, humanize their work environment, and contribute to society through the socially and ethically responsible practice of their profession.

The phrase “competence, conscience, and compassion” has emerged at Santa Clara as a shorthand expression of the Jesuit ideal of educating integrated persons who reach their full human potential. These three qualities are not seen as discrete and independent one from the other, but as the constitutive and complementary components of a fully human being. In Jesuit education, *human being* refers simultaneously to the individual person and to a way of being in the world that is distinctive of humanity. The way of being that characterizes humanity at its best is intelligent, moral, and socially responsible. The least human way of being in the world is to pursue one’s own interests without regard for the good of the community or, even worse, at its expense.

Competence intends to give pride of place to the acquisition of knowledge, the practice of critical thinking, the pursuit of lifelong learning, and the application of what one knows. It assumes basic familiarity with the broad areas of knowledge—the arts; the humanities; and the natural, social, and behavioral sciences—as well as a deeper knowledge of one field or discipline. The guiding principle is that the more one knows, the more satisfied and fulfilled one will be as a human being, and the more one can and should contribute at all levels of life. *Conscience* informs and develops the ethical and moral dimension inherent in all human beings, regardless of their religious or cultural background. *Compassion* nurtures the human desire and will to fashion a more humane and just world; it means using knowledge for the well-being of all, especially the poor and powerless. It explicitly recognizes that the absence from the University of whole segments of the global society may deny us access to universal human experience and thereby not reflect the classic premise of a humanistic education: *nil humanum alienum est a me*—“nothing

human is alien to me.” Educating for competence, conscience, and compassion is based on the fundamental assumption that all aspects of human experience are worthy of study and understanding.

Santa Clara’s commitment to offering students an education that simultaneously develops intelligence, ethical thinking and acting, and a disciplined and reflective sensitivity to all human experience is grounded in the conviction that persons who achieve this completeness can best advance the human enterprise. The University believes the educational environment that offers the best hope of nurturing such people is one that integrates rigorous inquiry and creative imagination with reflective engagement such that individuals will evoke from deep within themselves a commitment to creating a more humane and just world.

The blending of these academic, moral, and humane values is central to our identity as a Jesuit university. Santa Clara, as the statement of “Fundamental Values” in its *Strategic Plan* indicates, is committed to preserving and renewing its Jesuit tradition, which is an expression of Christian humanism: “Faith and reason animate the most fundamental of human quests, the pursuit of truth and goodness.”

LEARNING OUTCOMES OF THE UNDERGRADUATE PROGRAM

FOUR GOALS OF AN UNDERGRADUATE EDUCATION

Central to the concept of undergraduate student learning at this Jesuit university is that, through their academic programs and their co-curricular activities, graduating seniors should have acquired the knowledge, skills, and sensitivities to become responsible, wise, and creative leaders in society. Student learning, in other words, is about preparing leaders with recognized competence, guided by a well-developed conscience, and motivated by compassion for the world in which they live.

This broad purpose of the Santa Clara undergraduate program is realized through the achievement of four goals, which build on students’ prior educational and life experience and are nurtured and reinforced by Santa Clara’s curricular and co-curricular programs:

- 1) *Reasoning and Communicating*: Graduates will demonstrate the ability and inclination to think and to communicate effectively as individuals and in collaboration with others in the framing and resolution of problems.
- 2) *Breadth of Learning*: Graduates will demonstrate the acquisition of a broad, humanistic education in the liberal arts and sciences as reflected in the knowledge, skills, and sensitivities that constitute the learning outcomes of the University Core Curriculum, reinforced by an integrated co-curricular undergraduate experience.
- 3) *Depth of Learning*: Graduates will demonstrate a working knowledge of the principles, questions, methods, standards, theories, and applications of at least one academic discipline or professional field as reflected in the successful completion of an academic major.
- 4) *Community*: Graduates will demonstrate the ability and inclination to work ethically and effectively within and across diverse communities in order to promote the common good.

These four are the University's overarching undergraduate learning goals. Individual departments, schools, co-curricular programs, and many other University programs often articulate learning objectives, but these are not intended as alternative or additional goals. Rather, they are seen as ways of focusing on elements within the four University goals. By the same token, none of the four University goals or any of their objectives should be conceived of as the product of a single course, program, or event. However focused and effective any specific effort to address the goals may be, no one course, program, or event can be thought of as the singular institutional contribution to advancing or reinforcing a given goal or objective. Whatever perceived advantage there might be for administrative and academic organizations within the University to highlight their contributions to particular goals, from the learner's perspective, an undergraduate education cannot be sharply compartmentalized in these ways.

The four global goals of the undergraduate degree program have been formulated into more detailed learning outcomes that identify the intended knowledge, skills, and sensitivities students should acquire. Although arguably each more specific outcome can be related in some way to all

four of the goals, it is helpful to think of each as perhaps more closely associated with one goal than the others.

Learning Outcomes for Goal No. 1: Reasoning and Communicating

- 1.1 Advanced-level skills, positive habits of mind, and informed human sensitivities in the integrated processes of critical thinking, problem solving, writing and communication, and ethical decision making.
- 1.2 A practical, hands-on skill in problem solving with those information technologies that facilitate human communication and can improve the quality of one's work; as well as the understanding and resilience to keep pace with changes brought about by increasingly sophisticated technology, and an informed sensitivity to positive and negative impacts of these technological changes on human beings individually, socially, and culturally.

Learning Outcomes for Goal No. 2: Breadth of Learning

- 2.1 A functional understanding of the methods of reasoning, theoretical frames of reference, and fundamental conceptualizations of reality that are characteristic of the natural, social, and behavioral sciences.
- 2.2 A deeply humanistic involvement with American, Western, and world cultures, including those social, historical, economic, technological, political, scientific, philosophical, literary, artistic, and religious issues, concepts, belief structures, and ideals which shape our lives and communities.
- 2.3 A clear sense of how to connect and how to integrate what is learned in the major with what is learned through the University Core Curriculum and with knowledge in related disciplines.

Learning Outcomes for Goal No. 3: Depth of Learning

- 3.1 A personal intellectual and affective connection to at least one academic major which includes not just the study of that major but active participation, at a level appropriate to an undergraduate, in the scholarly, professional, intellectual, or artistic life of that field or discipline.
- 3.2 A deep understanding of the fundamental questions, concepts, theories, methods, evidence, and standards of inquiry and practice in at least one academic major.

Learning Outcomes for Goal No. 4: Community

- 4.1 A reflective understanding of what it means for someone with a Santa Clara undergraduate education and the specific major he or she has selected to be a person of competence, conscience, and compassion; and the knowledge, skills, sensitivities, and inclination to strive individually and collaboratively to bring about the common good.

The University Core Curriculum, college- and school-specific degree requirements, and the

requirements of various academic majors support these four global goals, as do the learning objectives of co-curricular programming.

THE UNIVERSITY'S CORE CURRICULUM AND THE FOUR GOALS

The Santa Clara University Core Curriculum is that part of the undergraduate experience required of all students and, as such, expresses the University's strongest values in an integrated whole. The Core became effective in fall quarter 1996, culminating a four-year effort to update and revise the previous University Curriculum, which had been in place since 1981. The Core consists of a set of requirements to be satisfied by all students. It is managed by a governance structure consisting of a broad-based University Core Curriculum Committee responsible for general oversight and a series of subcommittees responsible for each of the requirements (Exhibit III.1.15). The subcommittees approve courses as satisfying the learning objectives defined for the requirement, periodically evaluate the success obtained in achieving those learning objectives, and propose enhancements within the broad curricular guidelines developed by the faculty and approved by the Board of Trustees.

The Core Curriculum is designed to mesh with co-curricular learning activities, such as the Freshman Residential Community or the Eastside Project, and with college/school and major requirements to provide a complete and well-rounded undergraduate education. Students should experience the Core requirements not simply as individual courses but rather as related educational experiences that help give meaning and structure to their whole undergraduate experience.

The Santa Clara Core Curriculum predominantly supports undergraduate learning goal 2 (Breadth of Learning), but certain requirements also support undergraduate learning goal 1 (Reasoning and Communicating), and undergraduate learning goal 4 (Community). The Core is structured as a series of three themes, with clusters of courses that explore those themes. The progression of the themes is not strictly chronological, nor does every student study Core courses in exactly the same sequence. In its three themes, the Santa Clara Core Curriculum expresses the psychological dynamics of focusing on one's own identity within the community (Who am I? Who are we?), moving out to encounter new realities (What is the world like?), and then returning to

oneself to integrate these new realities into one's own world view as a basis for leading others (What is my relationship to the world? How should I act?).

The first theme of the Santa Clara Core is *Community: A Sense of Person and Place*. The learning outcomes defined for this theme are grouped into four clusters:

- *English Composition*: Students will be able to comprehend, summarize, analyze, and critique complex texts; to locate appropriate primary and secondary sources; to identify, analyze, and evaluate multiple perspectives and evidence fairly; to develop appropriate theses, assertions, reasoning, and conclusions; to organize ideas logically and effectively; to produce clear and grammatically correct written work; and to employ relevant documentation systems.
- *Religious Studies (First Course)*: Students will be able to reflect in an informed and critical manner upon the relationships and connections between religion and the human condition; to comprehend the historical, ethical, or theological aspects of Christian and other religious traditions; and to understand the methods of scholarly inquiry utilized in the study of scripture, religion, and theology.
- *United States*: Students will attain a level of critical and informed familiarity with American civilization that enables them to function responsibly as informed citizens of the United States; will be able to think and to write critically about the North American historical, cultural, literary, or social traditions; and will be able to engage both disciplinary and interdisciplinary methodologies in the study of the United States.
- *Western Culture*: Students will attain a level of cultural literacy with respect to Western intellectual and cultural institutions that enables them to function responsibly as knowledgeable and reflective members of contemporary society; will be able to think and to write critically about Western intellectual and cultural traditions; and will be able to engage both disciplinary and interdisciplinary methodologies in the study of Western culture.

The second theme of the Santa Clara Core is *Global Societies: Methods of Inquiry, Interaction, and Analysis*. Six clusters are used to explore this theme, with learning outcomes as defined below:

- *Mathematics*: Students will be able to demonstrate proficiency in the techniques of mathematics; to apply the mathematical method for solving problems; and to evaluate logical arguments.
- *Natural Science*: Students will attain an ability to analyze scientific problems, generate logical hypotheses, evaluate evidence, and tolerate ambiguity.

- *Technology*: Students will demonstrate an understanding of the nature of technology and its social context; of the ways computer networks are structured and how they can be used as sources of information in the student's particular field of interest; and of some applications specific to the discipline in which the course is based.
- *Social Science*: Students will be able to think and write critically about explanations of human behavior, cognitive processes, or cultures that are represented in one of the social sciences; will demonstrate an ability to apply that discipline to contemporary social problems in different communities and global societies; and will attain an appreciation of the different methodological approaches in the social science disciplines.
- *Second Language*: Students will demonstrate verbal and written proficiency in a second language sufficient to make basic communication genuinely possible and will demonstrate appropriate sensitivity to cultural differences.
- *World Cultures and Societies*: Students will attain a level of critical and informed familiarity with a non-European civilization so that they can function responsibly as informed citizens with an international perspective; will be able to think and write critically about the historical, cultural, literary, or social traditions of this civilization, or (in the case of an international course) a particular disciplinary perspective on the international system; and will be able to engage both disciplinary and interdisciplinary methodologies in the study of a non-European culture.

The third theme of the Santa Clara Core is *Leadership: Integration and Perspective*. The learning outcomes defined for the three clusters used to explore this theme are:

- *Ethics*: Students will be able to think and write critically about classic and contemporary moral problems; about moral concepts like right/wrong conduct and good/bad character; and about ideals like justice, happiness, dignity, rights, and equality.
- *Religious Studies (Second and Third Courses)*: Outcomes are the same as for the first religious studies course above.
- *Third Writing Course*: Students will be able to read complex texts critically; to develop opinions or positions that are informed by critical inquiry; to develop a well-focused thesis and appropriate support; to use and integrate multiple sources to advance the student's own position; to use a formal documentation system appropriate to a particular discipline; to adhere to the specific written conventions of a particular discipline or related disciplines; to produce writing that is clear, concise, controlled, and grammatically correct; to present information clearly and effectively in both small group discussions and formal oral presentations; and to develop an awareness of the ethical dimensions of communication, including sensitivity to audience and proper use of source

material.

The three themes imply a progression from understanding oneself and one's community, to expanding one's horizons and experience with other cultures, to integration into a personal world view and basis for action and involvement. In practice, few students follow the progression closely, and the connection between some requirements and the theme in which they are located is not obvious. This is particularly true of the first theme, for while the United States and Western Culture requirements explore the broad community and predominant cultural influences affecting most of our students, and the first Religious Studies requirement causes students to reflect on their own spirituality, the relation of Composition and Rhetoric to the Community theme is tenuous. The relationship of the required courses in the second theme, Global Societies, is more obvious: the World Cultures and Societies and the Second Language requirements push the student out into parts of the physical world that are unfamiliar to them, and the Mathematics, Natural Science, Technology, and Social Science requirements push the student out into unfamiliar intellectual worlds. The courses in the third theme offer potential for true integration of the ideas covered earlier in the Core and those of the student's major, since all but the Ethics course are required to be taken in the sophomore year or later. However, there is anecdotal evidence that integration is not taking place. Further work on issues of integration within themes, across themes, and between the Core and major courses is a significant agenda item for the University Core Curriculum Committee during the 1999–00 academic year.

COLLEGE AND SCHOOL REQUIREMENTS AND THE CO-CURRICULUM

Achieving the undergraduate goals of the University includes more than completing the requirements of the Core. Students enrolled in majors in the College of Arts and Sciences or in the Schools of Business or Engineering must complete a limited set of school-specific degree requirements that are based on learning outcomes appropriate to the particular academic or professional field of study. Student affairs professionals identified specific co-curricular program objectives that support the University's educational goals for all undergraduates. Additional information can be found in the self-study reports of these organizations. The information below is meant only to convey how the college and school requirements and the co-curricular

programming objectives connect to the four global goals of a Santa Clara undergraduate education.

The **College of Arts and Sciences** adds two more learning outcomes for all of its students.

- *Arts Performance Experience*: A basic appreciation for the arts through a participatory experience in at least one of the fine arts.
- *Ethnicity and Gender in America*: An involvement through study and reflection, if not active engagement, in working within and across communities that reflect the significant ethnic and gender concerns of contemporary American society.

The purpose of the first of these two arts and sciences requirements is to support undergraduate learning goal 2 (Breadth of Learning) with an enriching, participatory experience in the fine arts. Learning goal 4 (Community) is strengthened for all Arts and Sciences majors with the outcome related to ethnicity and gender as issues in American society. The College of Arts and Sciences designed its course approval and assessment support of these learning outcomes using the same structures as the University Core Curriculum Committee and its sub-committees comprised of both provider and client department faculty. These two outcomes were the subjects of student outcomes assessment projects sponsored by the College of Arts and Sciences in 1993–95. The result of those two projects was, in both cases, a clearer understanding of the learning outcomes to be achieved and greater focus on the ways in which student work might be evaluated in terms of those outcomes. In each case, the faculty developed outcome-oriented scoring rubrics to apply to student work. The reports of these two projects are included in Exhibit II.2.4.

The **Leavey School of Business and Administration** has identified six learning outcomes for all students majoring in the school as a basis for its school-specific degree requirements. These six outcomes support undergraduate learning goals 1 (Reasoning and Communicating), 3 (Depth of Learning), and 4 (Community) for students with majors in business. More detailed information on the ways the Business School seeks to achieve these outcomes and on student success on these dimensions of professional school learning is available in the self-study of the School of Business and in its most recent AACSB (American Assembly of Collegiate Schools of Business) accreditation report (Exhibit I.4.6). For business students the six outcomes are:

- *Creation of value in markets*: Develop graduates who can make business decisions that lead to the creation of maximum value in the marketplace, who

understand how markets change and how social, political, legal, economic, and technological forces drive and influence such change.

- *Innovation and technology:* Develop graduates who can foster innovation in organizations, respond effectively to new circumstances; and through their actions, enable organizations and society to realize the potential of new technologies.
- *Effective business management:* Develop graduates with rigorous understanding of core business functions and with problem-solving skills reflecting an integration of functional perspectives. Graduates should be prepared to assume positions of leadership and contribute immediately to the improved performance of their organizations.
- *Business responsibility and ethics:* Develop graduates with knowledge of the social responsibilities of business to its stakeholders—graduates who are able to identify ethical dilemmas and understand frameworks for selecting and defending a right course of action.
- *Management use of information:* Develop graduates with the capability to organize, describe, and make intelligent inferences from empirical evidence. Graduates should be able to apply sophisticated statistical techniques to data; make informed forecasts of business trends; and formulate, solve, and interpret quantitative business decision models.
- *Human values and teamwork:* Develop graduates who understand and value individual differences and have collaborative skills for working effectively in functionally and culturally diverse teams.

The **School of Engineering** has identified 11 learning outcomes for students majoring in the school, adapting the basic outcomes required by the ABET (Accreditation Board for Engineering and Technology) accreditation criteria with an orientation appropriate for Santa Clara University. Achieving these learning outcomes will supply a strong foundation for the study of engineering and assist students in connecting their more specialized training to broader professional issues. The 11 learning outcomes for engineering students are:

- *Basic math and science knowledge:* Demonstrate an ability to apply basic knowledge of mathematics, science, and engineering in the analysis and ultimate solution of technically oriented problems.
- *Experimental design and analysis:* Demonstrate an ability to design and conduct experiments, as well as to analyze and interpret data resulting from those experiments.
- *Need-driven design:* Demonstrate an ability to design a system, component, or process to meet desired needs.

- *Teamwork*: Demonstrate an ability to function effectively on multidisciplinary teams.
- *Engineering problem solving*: Demonstrate an ability to identify, formulate, and solve engineering problems.
- *Professional responsibility*: Demonstrate an ability to identify and respond ethically to professional dilemmas.
- *Communication*: Demonstrate an ability to communicate effectively in both written and oral forms.
- *Technology*: Demonstrate an ability to understand the concepts underlying contemporary technological issues.
- *Societal impact*: Demonstrate an ability to understand the impact of engineering solutions in a global/societal context.
- *Skills with tools*: Demonstrate an ability to use the techniques, skills, and modern engineering tools necessary for engineering practice.
- *Continual learning*: Demonstrate an ability and desire to engage in lifelong learning as needed to maintain professional competency.

The school-specific requirements support undergraduate learning goals 1 (Reasoning and Communicating), 3 (Depth of Learning), and 4 (Community) for students with majors in engineering. The School of Engineering modifies the University Core requirements by recommending, but not requiring, second language proficiency. It also amplifies the goal of Depth of Learning by requiring students to take a variety of courses in mathematics, science, design, and technology, and offering an innovative collection of integrated education options, including study abroad, that focus on the student's professional development. Some of these courses are accomplished with the support of provider departments outside the school itself, including Chemistry, Physics, and Mathematics and Computer Science in the College of Arts and Sciences. More detailed information on the ways the School of Engineering seeks to achieve these outcomes and on student success on these dimensions of professional school learning is available in the self-study of the School of Engineering and in its 1998 ABET report (Exhibit I.4.6).

The programs and offices that formerly comprised the Division of Student Affairs (now reorganized under the new provostial structure) offer **co-curricular programming** that supports each of the University's broad educational goals and, in some cases, some of the specific learning outcomes described above. Given the age range of our students, it is clear that maturation and

personal development are inextricably intertwined with the more academic elements of the undergraduate experience at Santa Clara. Co-curricular programming focuses most directly on undergraduate learning goal 4 (Community), with support also afforded to goal 1 (Reasoning and Communicating). Co-curricular programs aid students' growth and development through assisting them with:

- *Achieving a strong sense of self:* Students will be capable of reflecting on and integrating their intellectual, social, spiritual, ethical, and aesthetic experiences in clarifying their personal beliefs and values and developing a lifelong love of learning and an evolving understanding of life's meaning.
- *Appreciating the relationship of the individual to the community:* Students will develop the capacity for effective interpersonal interactions and the ability to work collaboratively with others, including a respect and appreciation of human diversity (gender, culture, race, ethnicity, socioeconomic status, sexual orientation, etc.).
- *Making critical choices:* Students will make decisions within a moral and ethical framework and assume personal responsibility for their learning, beliefs, decisions, and actions.
- *Deepening the understanding of leadership as service to the community:* Students will develop and strengthen their leadership skills and develop their desire to make a positive contribution to the good of society as moral, just, and ethical leaders.
- *Setting and communicating goals (both personal and organizational):* Students will be capable of developing a plan and managing and organizing the time, talent, and resources necessary to achieve those goals.

ACTIONS TO STRENGTHEN THE UNDERGRADUATE PROGRAM

THE CORE CURRICULUM

The primary activity affecting all undergraduate education since the last accreditation visit is the adoption of the University Core Curriculum in 1993, with the new requirements applying to freshmen who entered in fall 1996.

At the time of the 1987 visit, the breadth requirements of a Santa Clara undergraduate education were embodied in the University Curriculum, which had been adopted in 1981. The University Curriculum established specific course requirements intended to achieve seven

educational goals:

- An ability to write clearly and effectively and to read critically
- An understanding of the history of Western culture and the methods of inquiry characteristic of the humanities
- An understanding of another culture through the study of a foreign language
- An understanding of human behavior and the methods of inquiry characteristic of the social sciences
- An understanding of the natural world and the methods of inquiry characteristic of mathematics and the natural sciences
- An ability to make decisions based on ethical principles
- An understanding of the religious dimensions of life

While specific requirements varied between the college and schools, all students were expected to meet the seven common educational objectives. All of the courses that satisfied University Curriculum requirements were offered through the College of Arts and Sciences. There was very little attention to, or focus on, learning outcomes in the conception of this Curriculum.

The University Curriculum was administered by the Dean of the College of Arts and Sciences, in some cases with the assistance of committees composed of a representative from each department offering courses in the program, or in other cases working in consultation with the department chair. This approach sometimes led to departmental protectionism and a sense of control or ownership of the course offerings included in the University Curriculum. While the University intended for the University Curriculum to be a means for achieving the seven common educational objectives, some faculty viewed the University Curriculum as a means for sustaining enrollment in their department and, therefore, justifying additional resources from the University. In some cases, courses were seen only as introductory to the various majors and not in terms of the objectives of the University Curriculum.

The final report of the 1987 accreditation visiting team noted that this structure posed “problems in terms of the renewal or even continued development of the University Curriculum” and observed further:

A more formal structure, such as a standing committee on the University Curriculum, would assist the University in defining its general education program as a special enterprise with goals distinct from the Major, would facilitate the monitoring of existing course offerings and the development of new courses, and would assist in developing a resource plan that would guard against the demands of a university requirement straining resources needed to support a departmental major. Such a committee could provide a forum for discussion of several plans the college has developed (e.g., the consideration of the feasibility of a common Core program to replace the variants now offered, or the exploration of the possibility of sequencing the University Curriculum to extend through the four years of undergraduate study).

The visiting team recommended that “the University consider establishing a structure representing all academic constituencies that considers specifically the course offerings and syllabi related to the University Curriculum.”

During the 1992–93 academic year, President Paul Locatelli, S.J., appointed an eight-member faculty committee with a charge to construct a foundational experience for Santa Clara undergraduates based on an assessment of the “knowledge, skills, and sensitivities that our graduates need to be effective and contributing members of a global society in the 21st century.” The committee founded the revision process on the principles of consensus decision making, faculty competence on the curriculum, and broad input. It consulted widely with faculty, staff, students, administration, and alumni. While some members of the University community were reluctant to modify the existing University Curriculum, there was general agreement that the world had changed significantly in the dozen years since that Curriculum had been adopted. During the course of the campus-wide discussion, all the constituent groups became actively engaged in the dialogue, and many faculty, staff, students, and alumni offered suggestions on how to improve the educational experience of undergraduates.

In spring 1993, the committee presented two alternative proposals to the faculty and organized a vote of the faculty on those alternatives. In the canvass, the faculty indicated that they liked specific aspects of both models and made written suggestions for further development of the Core Curriculum. At the end of the 1992–93 academic year, the committee recommended a new Core Curriculum based on the results of the faculty vote. The Board of Trustees formally adopted the University Core Curriculum at its meeting in October 1993. A permanent University Core Curriculum Committee (UCCC) was established to administer the Core.¹

During the 1993–94 academic year, the faculty voted for representatives to the UCCC, discussed the Core Statement of Principles in open meetings, and participated in the 13 subcommittees appointed by the UCCC to set criteria for the various Core requirements. During fall 1994 the UCCC, in consultation with its subcommittees, adopted purposes and student outcomes for the individual requirements. It also developed a four-year budget for implementation of the new Core, which was recommended and approved by the University Budget Council. Full implementation of the new University Core Curriculum was initiated in September 1996.

Substantial University resources have been placed behind the implementation of the Core. Eight new faculty positions were funded to support new requirements. Some of these positions were “split,” with half funding coming from the UCCC and the other half from an academic division. Thus the eight positions yielded 12 new faculty members in 11 departments, equally divided to support the natural science, technology, and world cultures and societies requirements.

The major differences between the old University Curriculum and the new Core Curriculum are greater uniformity of requirements (the only non-uniform aspect of the current Core is that engineering majors are excused from the second language requirement, although college- and school-specific requirements extend the University-wide Core); the addition of requirements in technology, the United States, and world cultures and societies; and a natural science requirement for business majors. Many of the requirements carried over from the University Curriculum were substantially revised. A critical component of the new Core is the definition of specific learning outcomes for each of the requirements. These learning outcomes provide the standard by which the subcommittees approve individual courses as satisfying a particular Core requirement, and they also provide a basis for assessment activities.

Because the new Core is based on learning outcomes and not content areas defined in terms of specific academic departments, it can more easily be conceived as a continually evolving common experience, with minor changes in requirements over time, revisions of learning outcomes based on assessment actions, and lists of courses that satisfy the learning outcomes for each requirement. As an example, the Core natural science requirement will change to require a laboratory science experience for all students, beginning with freshmen in the 2000–01 academic year. Course approval processes as well as outcomes assessment mechanisms now vest

responsibility for the Core in the faculty of the University, with voice given to the provider departments and the client departments as well.

It seems, as well, that the new Core governance structure has been successful in broadening faculty participation in the common undergraduate experience. Over 300 courses have been approved as meeting the learning objectives of one or more Core requirements, including courses from the Schools of Business and Engineering. Moreover, requirements that had been controlled by a single department under the old University Curriculum (e.g., English, philosophy, religious studies) can be satisfied by courses offered by several other departments under the Core Curriculum.

THE FRESHMAN RESIDENTIAL COMMUNITY

One of the objectives defined by the UCCC for the new Core Curriculum was to “create a learning environment rooted in ... mutual understanding and respect, an environment in which diverse perspectives interact to enrich and broaden one another.” The 1992–93 Committee had advocated “shared enrollment, cross-disciplinary cooperation, and other types of integration,” and the UCCC felt these were such worthy goals that they encouraged experimentation even before the complete new Core was implemented.

Thus, the Freshman Residential Community (FRC) was initiated during the 1994–95 academic year as a joint project of the UCCC; the Core subcommittees for Western culture, written and oral communication, religious studies, and residential education and orientation; the departments of Art, English, History, Philosophy, and Religious Studies; and the Office of Housing and Residence Life. The plan was to house a group of 120 freshmen together, and enroll them in three-course Western culture sequences that were linked vertically and in English composition or religious studies courses that were linked horizontally. There would also be residence hall-based, one-unit classes and other programs. It is important to note that the FRC is not an honors program, and the demographics of participants have closely mirrored those of incoming freshman classes taken as a whole.

The goals of the FRC are:

- To increase the academic and cultural content of student life, thereby inculcating habits and attitudes that lead to lifelong learning.

- To foster collaborative learning and expectations of collaborative learning.
- To encourage interdisciplinary learning and the students' desire and ability to relate courses both in content and methodology.
- To support the first cluster of the Core: Western culture, introductory religious studies, and English composition [subsequently expanded to include United States].
- To aid the formation of community among FRC students and all freshmen.

These are ambitious goals, some of which are, indeed, too long-term to be measurable yet. Reviews after the first and second year (Exhibit II.2.3) indicated that the program was quite successful at developing community and supporting the first cluster of the Core, somewhat less successful at fostering collaborative learning, and most challenged at encouraging interdisciplinary learning. There was also some evidence that FRC students experienced a higher retention rate and completed a greater number of units than the freshman class as a whole.

Overall impressions of the program were sufficiently positive that it was spun off from the UCCC for the 1997–98 academic year, with a separate director and a separate budget. Beginning in the 1999–00 academic year, the concept of linked courses is being extended beyond the FRC sections through new residentially based learning communities.

THE ACADEMIC MAJORS

The College of Arts and Sciences undertook a program review process aimed at understanding its 30 or so undergraduate major programs in the light of the most recent thinking in the disciplines and in American higher education more generally. The project, called “Criteria of Excellence,” ran for two academic years, 1990–92. The college followed up with departmental-based outcomes assessment efforts launched in 1996. The Criteria of Excellence project, and related discussion based on the AAC&U booklet *Connecting Learning*², opened up new ways of thinking about the major as the intellectual “home” of students as well as faculty. Another welcome impetus for development of the academic majors, and particularly for integrating them with the Core, was the process by which new faculty positions were allocated after the new Core was approved. To compete successfully for one of these positions, many departments reviewed how the additional tenure-track faculty line would allow them to advance the interests of both the Core and their major. The specific changes made to specific major

programs are reported in the departmental documents supporting the College of Arts and Sciences self-study. Those documents are on file in the dean's office.

The School of Business undergraduate curriculum underwent small-scale revisions in 1989 and 1994. The school's self-study notes that these revisions have resulted in improved education in statistics and global aspects of business, as well as a streamlined economics sequence and diverse routes to completing the capstone requirement. Economics revised the upper-division requirements for the major (1996), revised the principles of economics sequence (1999), and added several new upper-division electives and an introductory course to serve the needs of non-majors and non-business students. The Management Department has strengthened its course offerings in business ethics and leadership. Department chairs and the school's Undergraduate Learning Team are the best sources of information about specific majors in the School of Business.

The School of Engineering's self-study describes the development of the majors in engineering, with particular emphasis on the success of the senior engineering design project as a capstone experience. Innovative scheduling of required junior-level engineering courses allows students in the Departments of Computer Engineering and Electrical Engineering to use their spring quarter for study abroad, internships, or a variety of elective learning opportunities. The dean's office or department chairs can provide information about the changes in specific major fields.

ASSESSMENT ACTIVITIES

Among the first formal assessment activities at Santa Clara were 10 pilot projects conducted during the 1993–94 and 1994–95 academic years by the College of Arts and Sciences. These projects were aimed at specific areas under revision in the Core Curriculum and were undertaken more to learn how to engage in meaningful outcomes assessment than necessarily to generate data that would lead to change. Among the benefits of these pilot assessment projects were (a) the faculty of the college came to see areas of the Core as a concern for the whole faculty, not just the purview of individual departments, (b) teams of faculty from “provider” departments and “client” departments came to consensus on outcomes statements for the 10 areas reviewed, much of which informed the student outcomes adopted by the UCCC for the individual Core requirements,

and (c) faculty teams developed various designs, both qualitative and quantitative, by which to seek meaningful data to understand the extent to which students were achieving the learning outcomes that the faculty intended. In addition to these efforts, the Arts and Sciences chairs' retreat in fall 1997 focused on assessment.

Experience from the Arts and Sciences assessment efforts has informed the assessment activities related to the Core Curriculum. The University Core Curriculum Committee has approved a five-year rolling plan to assess the outcomes of each of the components of the new Core. The subcommittees for each requirement conduct the assessments.

In the first year of these assessment efforts (1997–98), the UCCC focused on the Community theme of the Core and its four components: English composition, the first religious studies course, the United States requirement, and the Western culture requirement (Exhibit II.2.2). Data collection efforts were conducted in each area, and evaluation of those data continued in the 1998–99 academic year. English composition and religious studies had quite successful assessment activities but of very different scales. The assessment effort by the Western Culture Subcommittee was handicapped by diminishing student involvement over the academic year. New assessment activities in 1998–99 focused on the second language, social science, and world cultures requirements from the Global Societies theme of the Core.

There has also been an increased focus on assessment for the discipline-oriented major programs. In particular, interest grew in articulating more explicitly the intended outcomes of academic programs, ensuring that those programs were achieving the desired purposes, and in exploring best educational practices. From 1990 to 1992, the College of Arts and Sciences "Criteria for Excellence" initiative focused the attention of faculty on external measures of program, student, faculty, and departmental success. The accrediting associations of the two undergraduate professional schools (ABET and AACSB) began discussions about changing the emphasis of their accreditation toward an outcome-assessment orientation. The next accreditation visits for both schools will emphasize assessment and its impact on programs much more heavily.

ASSESSMENT OF LEARNING OUTCOMES

Santa Clara University has been collecting data of various sorts that provide evidence of performance relevant to several of the learning outcomes described above. In addition, there were several data collection efforts conducted specifically to provide additional evidence of performance for this self-study. However, we do not have assessment data for all eight learning outcomes. Many of the survey data listed below reflect self-reported responses. Most of the rest of the data are the result of objective tests or third-party subjective evaluations.

Among the existing data sources that have been used in this assessment are:

- Annual surveys of admitted freshmen and graduating seniors (Exhibits II.2.9 and II.2.10)
- Results of pilot assessment efforts in ten academic subject areas conducted by the College of Arts and Sciences in 1993–95 (Exhibit II.2.4)
- Crane marketing surveys in 1997 of undergraduate students, their parents, and undergraduate alumni (Exhibit II.2.8)
- An analysis of Crane survey data pertaining to the conscience and compassion of our graduates, compiled by Professor Ed McQuarrie of the Marketing Department in 1998 (Exhibit II.2.7)
- An analysis of 1995–97 Higher Education Research Institute data (College Student Survey and Survey of Incoming Freshmen), compiled by Ed McQuarrie in 1998 (Exhibit II.2.6)
- A longitudinal study of the critical thinking habits of Santa Clara undergraduates, conducted by Carol Giancarlo of the Liberal Studies Program and Peter Facione, Dean of the College of Arts and Sciences in 1998 (Exhibit II.2.5)
- A survey of undergraduate research activities conducted by the University Research Committee in 1998 (Exhibit III.1.6)
- University Core Curriculum Committee assessment reports from 1998 related to the English composition, first religious studies, and Western culture requirements (Exhibit II.2.2)
- Comparative pass rate information for Santa Clara students taking the Engineer in Training

professional certification exams (Exhibit II.2.14)

- Judge evaluation sheets from the School of Engineering senior design contest (Exhibit II.2.15)
- Analysis of MCAT and other standardized test scores of exiting seniors (Exhibit I.4.6)

New data collection efforts, completed during the 1998–99 academic year specifically for this self-study, that are relevant to evaluating our success in achieving the undergraduate learning objectives include:

- Surveys of alumni, faculty, and staff conducted by the Institutional Research Office in consultation with the self-study task force chairs in fall 1998. Many of the questions on this survey were also included in the existing Crane Survey although using a different response scale. Note that the alumni data from this survey only reflect members of the class of 1996, whereas the Crane Survey reflects a balanced sample of all alumni. (Exhibit III.1.3 to III.1.5)
- An appraisal of students' reasoning abilities administered to a broad cross-section of undergraduate classes during fall 1998 and an analysis compiled by Peter Facione, Dean of the College of Arts and Sciences, comparing the results with the earlier Giancarlo and Facione study (Exhibit II.2.16)
- Critical readings by select Santa Clara faculty of senior papers from spring 1998 for capstone courses in anthropology, economics, and political science/religious studies (Exhibit II.2.17)

FINDINGS RELATED TO LEARNING OUTCOMES

A detailed report of findings related to undergraduate learning outcomes is presented in Appendix B. Here we shall briefly summarize these findings.

Learning Outcome 1.1: Advanced-level skills, positive habits of mind, and informed human sensitivities in the integrated processes of critical thinking, problem solving, writing and communication, and ethical decision making.

Evidence related to this outcome is available from portfolio reviews conducted by the Core Curriculum Written and Oral Communication Subcommittee, studies based on administration of the California Critical Thinking Skills Test (CCTST) and the California Reasoning Appraisal (CRA), and survey responses from freshmen, seniors, faculty, and alumni. Self-reported evidence supports the conclusion that Santa Clara does provide an education that enhances critical

thinking, problem solving, writing and communication, and ethical thinking. Objective evidence supports the same conclusion for critical thinking and for writing and communication. There are several areas in which students studying composition and rhetoric can improve, however, and changes will be effected in the introductory courses to try to accomplish that. And while faculty goals for and student reports of requirements for critical thinking are congruent, objective measures show our students' orientation toward critical thinking is in the 60th percentile nationally—not as high as we would like. Responses to the alumni surveys also argue for some modesty about claims.

Learning Outcome 1.2: A practical hands-on skill in problem solving with those information technologies that can facilitate human communication and improve the quality of one's work; as well as the understanding and resilience to keep pace with changes brought about by increasingly sophisticated technology, and an informed sensitivity to positive and negative impacts of these technological changes on human beings individually, socially, and culturally.

Survey results show strong support for the importance of this outcome, but do not provide objective evidence of its accomplishment. A scheduled assessment of the technology requirement in 1999–00 by the relevant subcommittee of the University Core Curriculum Committee should provide useful data on this outcome.

Learning Outcome 2.1: A functional understanding of the methods of reasoning, theoretical frames of reference, and fundamental conceptualizations of reality that are characteristic of the natural, social, and behavioral sciences.

Findings from pilot assessments conducted in 1993–95 by the College of Arts and Sciences were fairly disappointing. A University Core Curriculum assessment of the social science requirement was conducted in 1998–99, but results are not yet available. A similar assessment of the natural science requirement is scheduled for 1999–00.

Learning Outcome 2.2: A deeply humanistic involvement with American, Western, and world cultures, including those social, historical, economic, technological, political, scientific, philosophical, literary, artistic, and religious issues, concepts, belief structures, and ideals which shape our lives and communities.

Faculty and alumni survey responses show strong support for the importance of these learning objectives. The primary objective data come from University Core Curriculum assessment projects conducted in 1997–98 for the first religious studies course (based on student questionnaires) and for the Western culture sequence (based on portfolio analysis). These data

are supplemented by the pilot assessments (using focus groups and evaluation of class discussions) conducted by the College of Arts and Sciences in 1993–95. The findings provide some support for a conclusion that these courses are achieving their stated learning objectives.

Learning Outcome 2.3: A clear sense of how to connect and how to integrate the learning in the major with learning through the University Core Curriculum and with knowledge in related disciplines.

The assessment of the first religious studies requirement cited above found troubling evidence that students did not see much connection between their religious studies class and the Core Curriculum, or between different Core subjects. Alumni survey responses provide a mixed picture of this issue.

Learning Outcome 3.1: A personal intellectual and affective connection to at least one academic major which includes not just the study of that major but active participation, at a level appropriate to an undergraduate, in the scholarly, professional, intellectual, artistic life of that field or discipline.

The primary evidence for this outcome consists of statistics about student engagement in professional societies, department clubs, honor societies, senior theses, capstone projects, and scholarly collaboration with faculty, along with survey responses from students, alumni, and faculty. The evidence is generally positive.

Learning Outcome 3.2: An in-depth understanding of the fundamental questions, concepts, theories, methods, evidence, and standards of inquiry and practice in at least one academic major.

This outcome is discussed in the individual self-studies of the college and schools. Further evidence is provided by survey responses, independent evaluations of student performance in senior capstone experiences, professional exam pass rates, and performance on standardized professional and graduate school admissions tests. Findings are generally, though not uniformly, positive.

Learning Outcome 4.1: A reflective understanding of what it means for someone with a Santa Clara undergraduate education and the specific major he or she has selected to be a person of competence, conscience, and compassion; and the knowledge, skills, sensitivities, and inclination to strive individually and collaboratively to bring about the common good.

While Santa Clara views “competence, conscience, and compassion” as a unified goal, the assessment of this learning outcome has focused on conscience and compassion, since evidence

adduced for the other learning outcomes speaks directly to the question of competence. In assessing this learning outcome, we have made use of readings of capstone papers and analysis of survey data. In general, the data indicate that Santa Clara graduates are people of conscience and compassion, with both the skills and the incentive to contribute to the common good. While the data are positive, however, survey responses about the importance of these goals are generally lower for students and alumni than for faculty. For example, faculty rankings of the importance of goals for responsible citizenship, achieving a sense of social justice, and making a difference to society are more than 20 percentage points higher than student reports of the impact of their education on their ability or interest in those items. Faculty goals and student experience related to community service are much more closely aligned. Santa Clara students generally seem to be neither more nor less compassionate than most other college students, but they are more likely to engage in volunteer work. There are no significant differences in attitudes and values related to conscience or compassion between freshman and senior students, although alumni show greater development of conscience than undergraduates. There are significant differences in student experiences and attitudes related to conscience and compassion by academic division and by gender, but we do not yet know what causes these differences. Further, there are incongruities between what recent alumni say is important (helping others in difficulty) and measures of active involvement.

CONCLUSIONS

Santa Clara has amassed a significant amount of data regarding the expectations of faculty for the education they provide and the experience of students who have completed that education. It is possible to measure achievement of some of the defined learning outcomes in a more or less objective fashion, and for many of those, we have such data. However, some of the learning outcomes that Santa Clara values most highly, especially educating persons who combine competence with conscience and compassion, remain extremely hard to assess. Obviously, it is difficult to sort out how much the undergraduate experience contributes to those outcomes and how much the students bring to that experience simply by being who they are in the first place. We do have some self-report data and some evidence from the sorts of service work our students perform that are encouraging. Yet, the true effect of an education on achieving such lofty goals

must be evaluated over a much longer period of time than that covered by the data used for this self-study.

It is fair to say that Santa Clara has evidence that it has been successful to some degree in achieving each of the defined learning outcomes. It is also fair to say that our performance in achieving the objectives has been uneven.

The data show that Santa Clara graduates have strengthened and can employ skills in critical thinking and problem solving, can communicate effectively, and are able to include ethical concerns in decision making, although the absolute level of achievement of these outcomes is not as high as we would like. In general, there are no important differences in these outcomes between the various academic divisions of the University.

More in-depth assessment is needed (and is scheduled) regarding student accomplishment of learning objectives related to information technology; mathematics and the natural and social sciences; and American, Western, and world cultures.

There are concerns about integration among Core requirements that need to be investigated further and addressed if substantiated. As the common undergraduate experience, the Core should prepare students to see relationships between its various component courses and the other things they are learning. Programs of academic advising should emphasize integration of learning as a criterion for course selection. Co-curricular programming should be organized with explicit attention to advancing the learning goals and outcomes, as well as the themes, of the Core Curriculum. Capstone seminars or other culminating projects or courses of the major should be reviewed by departments and schools for inclusion of learning assignments that require integration beyond the major with material learned in the Core.

With respect to some of the most overarching learning outcomes—educating for conscience and compassion—there are disparities between faculty perceptions of the importance of goals and student experience, as well as between stated values of recent alumni and their behavior. In general, the data indicate that our graduates are persons with a sense of conscience and compassion and an inclination to work for the common good. It is not clear, however, how much the Santa Clara experience contributes to that result.

LEARNING OUTCOMES OF THE GRADUATE PROGRAMS

The graduate programs at Santa Clara offer students advanced professional study in degree programs that are designed to prepare them to make significant contributions to their chosen professional fields. The tightly focused nature of graduate studies and the career-oriented concerns that often motivate students to pursue advanced degrees foster significant challenges for the programs in delivering educational experiences that fulfill all three aspects of the University's commitment to "educating men and women for competence, conscience, and compassion."

For each graduate program, the fundamental learning outcomes are determined largely by the requirements of the particular professional field and the standards and expectations of the specific professional school accrediting agency. Providing graduate students with comprehensive theoretical backgrounds and knowledge in their fields and the ability to apply this knowledge in real-life situations is essential for the ongoing success of both students and the programs. For that reason, each graduate program has attempted to clearly define its specific learning outcomes and gather measurable evidence of performance related to its articulated standards.

In addition to the delivery of this theoretical and applied professional knowledge, each graduate program must also find ways to situate the learning outcomes specific to its program within the context of the Santa Clara strategic vision. What is distinctive about Santa Clara's graduate programs? What qualitatively different experience do the vision and our University context and community add to the programs? How does the Santa Clara graduate program differ from a graduate program in the same field at another university?

The graduate programs all seek to address these questions in similar ways. The programs help develop the competence of their students by providing knowledgeable and imaginative faculty members who are committed to excellence in their teaching and in their scholarly endeavors. This commitment fosters a lively exchange of ideas in the classroom and an ongoing pursuit and formulation of new knowledge. This dynamic educational exchange promotes not only the acquisition of professional knowledge and skills but also the creative, thoughtful, and humane application of these skills. Establishing this type of exchange helps build the community of

scholars articulated as the University's first strategic initiative.

The graduate programs also seek to enhance the conscience and compassion of their students through their emphasis on professional integrity, ethical behavior, and reflective consideration of the implications of their professional choices and decisions. These students have an opportunity to become responsible leaders in their professions and in the larger social arena. We strive to provide them with learning experiences that integrate their acquisition of knowledge with the broader social context, so that they emerge from their graduate school experiences equipped both with professional skills and with the ability to apply their knowledge ethically and humanely.

One of the challenges facing some graduate programs at Santa Clara is to connect in a meaningful way between the University's commitment to "educating men and women for competence, conscience, and compassion" with the mandates of their specialized accreditation agencies and with the career orientation of their students. As the assembled material for each program illustrates, the extent to which this challenge is successfully addressed varies with the programs and the students they attract. Perhaps most noteworthy, however, is the fact that each graduate program demonstrates an ongoing effort to grapple creatively with this challenge and encourage its students to participate in the distinctive educational experience available to them at Santa Clara.

Unlike the undergraduate program, which is a University-wide undertaking, each graduate program is contained within a specific school. Consequently, the articulation and assessment of learning outcomes for the respective graduate programs were included as one aspect of the school self-studies. This chapter highlights the learning outcomes of the three largest professional graduate programs at Santa Clara. Approaches being taken by each school and the initial attempts at analyzing achievement of the learning outcomes are described in each school's self-study (Exhibit I.4.6).

LEAVEY SCHOOL OF BUSINESS AND ADMINISTRATION

Design of the graduate curriculum and associated learning outcomes for the Master of Business Administration (MBA) degree is guided by the standards of the American Assembly of

Collegiate Schools of Business (AACSB). The MBA curriculum is a general management degree designed with the future executive or entrepreneur in mind. It provides broad coverage of all fundamental managerial topics. Students may customize their education by the selection of electives, but the Santa Clara program does not offer training or certification in any technical specialty.

The Leavey School of Business and Administration has identified the following learning outcomes that form the academic focus of the MBA program:

- *Creation of value in markets:* Develop graduates who can make business decisions which lead to the creation of maximum value in the marketplace, who understand how markets change, and how social, political, legal, economic, and technological forces drive and influence such change.
- *Innovation and technology:* Develop graduates who can foster innovation in organizations, respond effectively to new circumstances, and through their actions enable organizations and society to realize the potential of new technologies.
- *Effective business management:* Develop graduates with rigorous understanding of core business functions and with problem solving skills reflecting an integration of functional perspectives. Graduates should be prepared to assume positions of leadership and contribute immediately to the improved performance of their organizations.
- *Business responsibility and ethics:* Develop graduates with knowledge of the social responsibilities of business to its stakeholders, graduates who are able to identify ethical dilemmas, and understand frameworks for selecting and defending a right course of action.
- *Management use of information:* Develop graduates with the capability to organize, describe, and make intelligent inferences from empirical evidence. Graduates should be able to apply sophisticated statistical techniques to data, make informed forecasts of business trends, and formulate, solve, and interpret quantitative business decision models.
- *Human values and teamwork:* Develop graduates who understand and value individual differences and have collaborative skills for working effectively in functionally and culturally diverse teams.

Much of the evidence of performance gathered about the MBA program is student satisfaction data. The school deploys several measures that provide reliable data on student satisfaction that can point out possibilities for improvement. The data largely attest to a successful program that continues to grow stronger.

Course evaluation data represent one current source of evidence about learning outcomes of the MBA program. The school self-study report (Exhibit I.4.6) presents detailed information about the survey design and implications of the approach used in course evaluations. Extracting results from course evaluations over the past four years, the mean score for MBA students to the item asking if the student “learned a great deal” was 4.03 on a 5-point scale. While this suggests that students judge instruction in MBA classes to be generally successful, it does not provide useful information about the specific learning outcomes identified for the program.

In addition to the satisfaction and course evaluation data, surveys of students and alumni by Crane in 1997 give some insight into the extent to which the MBA program is fulfilling the University’s vision of educating for competence, conscience, and compassion and the Business School’s more specific mission-related learning outcomes. Selected items in the survey were categorized as addressing compassion, conscience, and competence outcomes. There were also items that assess the delivery of an integrated education and career outcomes. A full analysis of the survey responses can be found in the school’s self-study. The table below highlights the responses to the mission-related outcomes for the MBA program from the Crane surveys.

Proportion of Graduate Business Students and Alumni Who Report That a Mission-Related Outcome Had Been Achieved in Their Case		
	Graduate Business Students	Graduate Business Alumni
Compassion	74.0%	69.8%
Conscience	89.1%	83.7%
Competence	93.2%	97.7%
Integrated Education	91.6%	81.4%
Career Outcomes	96.1%	95.3%

The results from the Crane survey items related to compassion tend to be modestly lower and less positive for MBA students than for undergraduate students and alumni from the business school. This difference likely reflects the difference in the motives for attending a graduate versus an undergraduate business program, but also presents an opportunity and challenge to provide more experiences in the MBA program that encourage the development of compassion.

SCHOOL OF ENGINEERING

At the graduate level Santa Clara's School of Engineering offers a Master of Science degree through each of its departments and offers both an Engineer's degree and Doctor of Philosophy in the Computer Engineering, Electrical Engineering, and Mechanical Engineering departments. Based in part on the expectations of the Accreditation Board for Engineering and Technology, the School of Engineering's accreditation agency, the following learning outcomes have been identified for producing graduates who have technical skills, personal characteristics, and professional abilities to succeed in the engineering workplace. Graduates of the three Engineering graduate programs are expected to demonstrate:

- an ability to apply basic knowledge of mathematics, science, and engineering in the analysis and ultimate solution of technically oriented problems
- an ability to design and conduct experiments, as well as to analyze and interpret data resulting from those experiments
- an ability to design a system, component, or process to meet desired needs
- an ability to function effectively on multidisciplinary teams
- an ability to identify, formulate, and solve engineering problems
- an ability to identify and respond ethically to professional dilemmas
- an ability to communicate effectively in both written and oral forms
- an ability to understand the concepts underlying contemporary technological issues
- an ability to understand the impact of engineering solutions in a global/societal context
- an ability to use the techniques, skills, and modern engineering tools necessary for engineering practice
- an ability and desire to engage in lifelong learning as needed to maintain professional competency
- an ability to apply advanced knowledge of mathematics, science, and engineering to solve complex technical problems
- an ability to discern problem areas that need appropriate research to arrive at a solution
- an ability to pursue independent research to its conclusion and to publish the

results in professional journals

- an ability to advance the state of knowledge in the area of specialty

A thorough presentation of the data collected regarding these learning outcomes can be found in the school's self-study report (Exhibit I.4.6).

SCHOOL OF LAW

The Santa Clara University School of Law is fully accredited by the American Bar Association (ABA) and is a member of the Association of American Law Schools. The School of Law curriculum is informed by the seven objectives of a traditional legal education:

- To provide students with a foundation of basic substantive legal principles.
- To provide students with an understanding of the structure of the legal system and its procedures.
- To insure that the student can undertake legal research both in traditional methods and in computer assisted research.
- To learn a system of critical and logical thinking and analysis, often categorized as "thinking like a lawyer."
- To have students understand the structure of the legal profession and appreciate the ethical obligations of the profession, as well as the broader ethical issues that attorneys must address.
- To provide a level of skills training to permit graduates to enter the profession with some appreciation for and experience in the use of the skills required of the practicing attorney.
- To encourage students to always think in terms of broader policy and societal goals, to consider not only what is the law, but what the law should be.

The School of Law curriculum covers these seven traditional learning outcomes and requires that all students demonstrate their fundamental knowledge by passing required courses prior to graduation. All such courses are graded by curve. Research and analytical skills must be demonstrated in required courses. Other desired outcomes are fully provided for in the curriculum and are available to each student.

Further measurement of desired outcomes is inexact at best. Bar examinations provide a

rough external measurement of a law school's success in imparting basic knowledge and teaching basic analytical skills. In the multistate portion of the bar examination, Santa Clara students are performing below the median in all core substantive topics (see the School of Law's self-study report in Exhibit I.4.6 for more specific statistics). It is unclear whether this performance reflects lack of subject matter knowledge or lack of test-taking skill in the multiple choice format. In the six essay questions that cover the substantive and procedural subjects listed for examination, Santa Clara graduates typically perform at or above the 50th percentile. In the two performance questions that test lawyering skills, Santa Clara graduates perform at a level similar to their ranking on the essay questions. While Santa Clara graduates perform above the overall passage rate for the bar examination, their performance has placed Santa Clara below the median when ranked against California ABA schools.

A law school's placement success suggests in a very general way the profession's judgment as to the strength of the school's graduates. For the class graduating in 1998, over 97 percent of those seeking employment had been employed, 98 percent in the legal profession. A recent survey of the 100 largest law firms in the nation found that, adjusted for size, Santa Clara ranked 33rd out of 180 accredited law schools in placing its graduates in the largest law firms. Santa Clara places approximately three to five of its graduates in judicial clerkships each year.

RECOMMENDATIONS

The following recommendations are not intended to set forth new strategic goals, but to clarify goals already articulated in the *Strategic Plan*, particularly goals 3.E.1 ("Review programs and services for consistency with the vision, mission, and values of the University") and 3.E.3. ("Use the assessment of learning outcomes and performance indicators as means to improve educational quality and administrative effectiveness"). As we attempt to carry out these strategic goals, the recommendations below point us toward the importance of providing assessment expertise, expanding the repertoire of evidence used, connecting the evaluation of teaching and learning, and rooting program review in the assessment of identified learning outcomes.

Recommendation 1: Continue to explore ways to clarify, promote, and measure the goal of "competence, conscience, and compassion" as a distinctive outcome of an education in the Jesuit tradition.

In its “Strategic Vision,” we have clearly stated our intention to “excel in educating men and women for competence, conscience, and compassion.” Growing directly out of Santa Clara’s Catholic and Jesuit heritage, this vision provides a vital context for the *Strategic Plan* as a whole and for the more specific learning outcomes discussed in this chapter.

For Santa Clara to achieve this vision, however, it must devote additional attention to clarifying how it understands “competence, conscience, and compassion” as a triune concept, how it can most effectively educate students at both the undergraduate and graduate level to develop these qualities in a holistic way, and how it can measure its success in accomplishing this goal without oversimplifying or trivializing it. We need to move beyond our currently limited ways of operationalizing the concept to a richer set of strategies and measures that take account of the complexity and interrelatedness of its elements.

The extent to which Santa Clara is able to do this will be a warrant of our ability to realize three themes that suffuse the *Strategic Plan*—excellence, distinctiveness, and connectedness—as well as a reflection of our intellectual creativity and moral imagination.

Recommendation 2: Provide the expertise needed to support assessment of learning outcomes with more use of objective, longitudinal, and comparative data.

If faculty are to engage in assessment as a scholarly function, not as an administrative burden, they need expert technical support to help them as they formulate questions, select methodologies, carry out research, and analyze findings. The Institutional Research Office has provided some limited support for assessment of learning outcomes, but its primary mission is to collect and analyze data related to administrative decision making. Without additional staff, it would be unable to take on an expanded role in the assessment of learning outcomes. Even with additional staff, the aims and style of institutional research and learning outcomes research are somewhat different. Institutional research offices typically work with administrators in collecting and analyzing data for institutional decision making. Support for the assessment of learning outcomes, on the other hand, should be defined as a faculty development or academic support function.

It is important for Santa Clara as a community to reach agreement on what will be considered success in accomplishing identified learning outcomes, particularly regarding how many graduates

must evidence accomplishment and the uniformity of achievement by different groups. Conversations need to continue across the entire spectrum of departments, academic and co-curricular, to clarify how those programs, as well as the Core, can contribute to preparing undergraduate students to become leaders of competence, conscience, and compassion. The same challenge must be addressed at the graduate level. As success becomes more and more defined, we can focus on how best to measure whether we are achieving our educational goals.

Self-reporting of experience provides valuable information, but there are limits to this form of evidence. Using trained raters and careful procedures for the selection of materials, portfolio assessment and the evaluation of student projects or performances can provide additional sources of more reliable and valid data. The University, at every level, should gather more objective data on student learning outcomes.

Much of the evidence described here is cross-sectional information, which does not allow us to detect trends or to make comparisons of student progress over time. Continuing data collection efforts over time will allow us to put the accomplishments of exiting students into perspective if we have comparable data on their level of skill or knowledge as new students. Longitudinal data are important for a more sophisticated interpretation of alumni responses as well. The Web-based repository of assessment data developed by Institutional Research for this self-study provides a vehicle for creating longitudinal data sets that allow us to track changes over time. This repository should be maintained and expanded each year.

Additional information on how Santa Clara students compare to national norms would also be useful. In spring 2000, Santa Clara will be among the first institutions to participate in the operational phase of the National Survey of Student Engagement, which has a stronger focus on student learning than the HERI surveys in which Santa Clara has previously participated. The ongoing assessment activities related to the Core Curriculum also provide an opportunity to increase the use of nationally normed comparative data. Following discussion of potential goals, benefits, and cautions with regard to such comparisons, the University Core Curriculum Committee should strive to use such nationally normed objective instruments whenever reasonable.

Recommendation 3: Strengthen the connection between the evaluation of teaching and the

assessment of student learning.

Many departments already evaluate faculty teaching using a variety of data points including student evaluation instruments, review of course syllabi, course assignments, and, in some cases, peer visitations. While of utility, these data tend to reflect professor input, professor effort, and the reactions of students to the dynamics of the classroom. However, these data do not provide direct evidence of learning actually accomplished by the students in those classes. If an important value of the *Strategic Plan* is to orient Santa Clara toward student learning, then student learning should play a greater part in the evaluation of teaching. Greater focus on student learning could assist departments in evaluating the actual effectiveness of the teaching efforts of their faculty.

This chapter has articulated learning outcomes for both undergraduate and graduate programs. We recommend that departments, the college, and the schools find ways to evaluate the teaching effectiveness of faculty in terms, at least in part, of how well their students do in accomplishing those educational outcomes. These experiments in the evaluation of teaching effectiveness must accommodate differences between faculty due to discipline, career stage, and preferences for teaching methodology. There also must be options to evaluate the effectiveness of faculty as a group (over a sequence of courses or in pursuit of a given outcome) as well as the effectiveness of a single professor in a single course.

Recommendation 4: Implement a more systematic process of assessment-based program review of academic majors and co-curricular programs that allows for local experimentation guided by identified learning outcomes.

This recommendation incorporates three central ideas: that Santa Clara needs to be more systematic and assessment-based in its approach to program review; that program review should focus on academic majors and co-curricular activities as learning programs rather than on departments as administrative units; and that responsibility for program review should be assigned to the college, schools, and vice provostial organizations under the general oversight of the Provost.

While calling for a more systematic approach, we believe it is important to avoid a bureaucratic set of processes that would smother creativity and lead to either paper pushing or departmental self-justification. Assigning responsibility to the schools is more likely to accomplish this, we believe, than centralizing it in the Provost's Office.

Traditionally, the focus of an administrative review of departments tends to be on the adequacy of resources as departmental faculty and staff struggle with how best to balance the many different academic and professional functions they are expected to support. The focus of the systematic review of academic majors envisioned here would be to assess the extent to which the learning experiences of students in a major achieve its intended educational outcomes. Each school, in coordination with the Provost's Office, should develop a set of educational questions to address this issue.

At the undergraduate level, these questions might be based on the outcomes listed under the University's third learning goal (Depth of Learning) but tailored to fit the character of different academic and professional fields. At the graduate level, each program should focus on the learning outcomes to which it has already committed itself. It should also, more generally, address the question of how well the program advances the broader University goal of educating men and women for competence, conscience, and compassion.

This recommendation on program review is closely linked with the preceding recommendation on the evaluation of teaching. Both recommendations will require a fundamental shift in thinking and policy. For this shift to occur, a consultative and inductive approach is necessary. Such a process involves conversations with faculty and co-curricular staff of all schools, divisions, and academic ranks, as well as department chairs, deans, and the Provost. This approach must embrace the open discussion, evidence-based inquiry, and mutual respect that are at the heart of the collegial enterprise. We believe that if the effort is framed in terms of research questions, reflecting an honest concern for obtaining best knowledge about a topic central to the effectiveness of the institution, the faculty will be engaged in the development of creative, valid, and reliable ways of engaging in that research.

We expect that this will be a long process and, like the initial conversations about learning outcomes assessment begun in 1992, will involve experiments, pilot projects, and novel approaches to relate teaching effectiveness and student learning. It should be clear to all participants that experiments may uncover valid reasons to modify this and the previous recommendation. However, if the experiments demonstrate successful means of achieving a link between assessment of student learning outcomes and teaching effectiveness and program review, the University should articulate a policy implementing such a process.

QUESTIONS FOR FURTHER STUDY

Some of the questions that require further study and discussion, and on which we would appreciate advice from the WASC visiting team, include:

- How can Santa Clara better *articulate, foster, and measure* “competence, conscience, and compassion” as both an integrated concept and a broad learning outcome of a Santa Clara education?
- What are some academically and developmentally appropriate ways to pursue this goal at the graduate as well as undergraduate level?
- How can Santa Clara do a better job of identifying and measuring more specific learning outcomes?
- What sources of nationally normed data on student learning outcomes would be most useful to Santa Clara?
- How can Santa Clara more effectively promote and evaluate integration between the University Core Curriculum and undergraduate majors?
- How can Santa Clara best link the evaluation of teaching effectiveness with the assessment of student learning?
- What are the advantages and risks of a decentralized and inductive approach to program review?
- How can Santa Clara capitalize most effectively on the assessment work it has done to date?