The "Institutional Research Bulletin" is a collection of research summaries relating to Kapi'olani Community College (KCC) in Hawaii. Highlights from the 1993 volume (September-December) include: (1) the number of students in art classes and programs increased from 1988-1992; (2) the results of a survey about how health students find out about KCC programs; (3) a fall 1993 enrollment summary for record enrollment of 7,452; (4) half of KCC students prefer image learning to word learning based on a study; (5) focus groups were a useful research method for obtaining student opinion in health programs; (6) English 22 was found to be an effective preparation for English 100; (7) students were satisfied with hands-on tutorials, based on Problem-Based Learning colloquium in health education; (8) distance education courses have been effective, despite lack of interaction and technological problems; (9) the Pre-Education Advisement Program, founded in 1988, has been successful in increasing number of transfer students to the College of Education; (10) study of enrollment patterns revealed that new students often enroll in courses without prerequisites; (11) results of a comparative analysis of University of Hawaii (UH) community colleges based on centrality, efficiency and effectiveness; and (12) a study indicated sufficient interest in the pre-engineering program. (RDG)
Editor's Forward

The Institutional Research Bulletin is a new monthly publication initiated by the Office of Institutional Research. It is intended to constitute an arena for the publication and dissemination of studies and a forum for the exchange of information related to various aspects of the College. Faculty, administration, staff, and students are invited to submit articles for review.

Articles should be about one-half to one single-space page in length, and should preferably be based on a structured study. Priority will be given to articles of general interest to the college community as well as articles dealing with current issues such as program review, classroom research, accreditation, etc. Initially, four articles will be published in each issue.

Articles should be written in non-technical language. One graph or illustration per article is encouraged. Articles will be published in the order in which they have been received, with consideration for topic timeliness. Please allow two weeks for review.

Frank Abou-Sayf

The Art Program At KCC: A Student Follow-Up

Noreen Naughton

For the past four years, the Art Program has been surveying students who take Art courses at KCC and collecting data on them after they leave. The results indicate that:

- Between 1988 and 1992, the number of students who are or contemplate becoming Art majors, or who are taking Art classes for personal enrichment, has increased steadily from 84 to 119. Students transferring from other colleges have increased from 15% to 26% of the total student population. Students remain longer at KCC because of parking, cost, and good advising.

- On average, 30% of these students have decided to become Art majors, 34% will possibly become Art majors, and 27% are attending KCC to take Art courses for professional improvement or enjoyment.

    Others
    Taking for
    9%    Enjoyment

    Possible
    Majors
    34%

    Decided
    Majors
    30%

- Since Fall 1990, the number of students who leave the Art program has been decreasing from 68 students to 35 students per semester. Those who transfer to Manoa do so mostly during the Fall semesters: an average of 17 students per Fall semester compared to 5.5 per Spring semester.

- The number of students who have met their goal have been 57% in the Fall 1990, 31% in the Spring 1991, 53% in the Fall 1991, and 46% in the Fall 1992.

"Figures won't lie, but liars will figure."

C. Grosvenor
Allied Health Entry Survey

Steve Wehrman

Knowledge of how students find out about KCC programs and how they choose among them could help optimize the limited recruitment resources available to KCC. A survey was designed for this purpose and was administered to 169 entering students who were accepted in 8 different health career programs over a two-year period. Students were asked to indicate the importance of 6 common methods for finding out about health careers and 5 common methods for deciding which career to enter.

The data were analyzed for the combined Health Science Programs and for each individual discipline. The results indicate that the most highly rated method for finding out about health programs is personal/family experience in a health care setting. The most commonly utilized methods for deciding which career to choose were program orientation sessions and income potential.

The study indicates that program brochures, career counselors, and peer recruiting programs are effective approaches to optimize the recruiting process. It also indicates that career fairs are of little value, and should thus be conducted with institutional rather than program resources.

Fall 1993 Enrollment
At A Glance

Ralph Ohara

The number of applicants has continued to increase despite a shorter application period for Fall 1993. As of the end of the registration period (August 27), the total headcount was a record 7,452, an increase of 3.3% over Fall 1992, and 5.0% over Spring 1993.

The number of new, transfer, and returning students continues to drop, and is now 39% of the current student population. Prior to 1992, about half of the continuing students who were enrolled during the previous Spring semester did not return in the Fall. The higher Spring-to-Fall retention rate leaves less opportunity for new students to register: only 49% of the new accepted applicants enrolled this Fall.

<table>
<thead>
<tr>
<th>Major</th>
<th>Fall 1993</th>
<th>Percent Diff. from Fall 1992</th>
</tr>
</thead>
<tbody>
<tr>
<td>Liberal Arts</td>
<td>4,997</td>
<td>6.6</td>
</tr>
<tr>
<td>Business Educ.</td>
<td>681</td>
<td>N.A.</td>
</tr>
<tr>
<td>Food &amp; Hospitality Educ.</td>
<td>449</td>
<td>N.A.</td>
</tr>
<tr>
<td>Health Educ.</td>
<td>527</td>
<td>N.A.</td>
</tr>
<tr>
<td>Legal Assisting</td>
<td>149</td>
<td>3.5</td>
</tr>
<tr>
<td>Unclassified</td>
<td>649</td>
<td>28.5</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Gender</th>
<th>Fall 1993</th>
<th>Percent Diff. from Fall 1992</th>
</tr>
</thead>
<tbody>
<tr>
<td>Females</td>
<td>4,544</td>
<td>1.7</td>
</tr>
<tr>
<td>Males</td>
<td>2,908</td>
<td>6.1</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Attendance</th>
<th>Fall 1993</th>
<th>Percent Diff. from Fall 1992</th>
</tr>
</thead>
<tbody>
<tr>
<td>Full time</td>
<td>2,904</td>
<td>N.A.</td>
</tr>
<tr>
<td>Part time</td>
<td>4,548</td>
<td>N.A.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Tuition</th>
<th>Fall 1993</th>
<th>Percent Diff. from Fall 1992</th>
</tr>
</thead>
<tbody>
<tr>
<td>Resident</td>
<td>6,907</td>
<td>3.0</td>
</tr>
<tr>
<td>Non-resident</td>
<td>545</td>
<td>7.9</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Ethnicity</th>
<th>Fall 1993</th>
<th>Percent Diff. from Fall 1992</th>
</tr>
</thead>
<tbody>
<tr>
<td>Asian-Pacific Islander</td>
<td>5,152</td>
<td>3.6</td>
</tr>
<tr>
<td>Caucasian</td>
<td>1,365</td>
<td>-5.3</td>
</tr>
<tr>
<td>Mixed</td>
<td>720</td>
<td>10.9</td>
</tr>
<tr>
<td>Others</td>
<td>215</td>
<td>49.3</td>
</tr>
</tbody>
</table>

The number of applicants who declare Liberal Arts as their major is continuing to increase. These applicants include those interested in entering the Health Education programs.
Imagery: Concepts and Applications

Charles I. Daniels
Anatomy and Physiology

According to research biologists, the right hemisphere of the human brain processes mainly pictures while the left one processes mainly language. Left-brain activities have traditionally dominated the classroom where even blackboards become filled with words. Computers and high-tech graphics are now revealing the potential of the right brain, suggesting the importance that mental imaging can play in the learning process.

Numerous tests have attempted to measure the imaging power of the brain and its relationship with various indicators of academic performance. At KCC, the ability of some "visualization" tests to predict student grades is being investigated. The tests used provide information about students' preferences to learn verbally or pictorially and about the clarity and control of the imagery that they possess.

Results of these investigations indicate that:

- Half of KCC students prefer picture learning to word learning; and
- Image control is a strong predictor of academic success in first-year Anatomy and Physiology courses.

Consequently, advising students to use study skills that match their "imagery profile" could improve their academic performance.

In general, imaging was found to be a strong learning tool in the lab. As a result, plans are in place for future imagery studies utilizing more powerful performance instruments instead of the self-report tests used so far.

Focus Groups: A Source of Data For Program Reviews

Sanae Moikeha
Allied Health

With small programs, mail-out surveys result in responses that are too few to lead to meaningful inferences. As an alternative, focus groups were held on a trial basis with students enrolled in the Allied Health disciplines during Spring 1993.

Small groups of students (5 to 12) in each of seven disciplines met with a neutral moderator for one-hour sessions during which students had the opportunity to express their opinion freely on: why they enrolled in the program, how it is helping them toward their career goals, and their satisfaction with the program. Following the discussion on each topic, students summarized their opinion on a very short questionnaire and added written comments. Summary data on each program along with typewritten comments were disseminated only to the respective program director.

Focus groups appear to be an effective means of obtaining student opinion. The ideal group size seems to be no fewer than 5, to allow adequate sampling, and no more than 10, to allow each student the opportunity to voice opinions. Moderators reported that, with the largest group (12), which also included graduates, the mix of former and present students and the larger group size seemed to inhibit participation by some of the members.

In general, wide differences in opinion seemed to shrink as interaction proceeded. This convergence leads to a smaller variance in responses, resulting in more reliable results than one might expect from questionnaires.
On the Effectiveness of English 22

Kathleen J. Macdonald *
English

How well does English 22 prepare students to take English 100? To answer this question, a four-semester EIF-funded project involving 2,457 English 100 students, of whom 775 had taken English 22, was conducted systemwide. To avoid relying too heavily on course grades alone as indicators of ability, the assessment model included the following measures:

- a writing sample to measure writing performance at the beginning of English 100;
- a survey to determine students' perception of their writing abilities and writing background; and
- grades in both English 22 and English 100.

The results indicate that, by all three measures, English 22 does provide an effective preparation for English 100 at all six participating campuses. Here at KCC, for example, English 22 students had a 70-percent success rate ("C" or better) in English 100, compared with 62 percent for students who entered English 100 directly as a result of the placement test, a statistically significant difference. In addition, student perception through the survey revealed that English 22 students felt better prepared than those who entered English 100 directly.

In addition to the research information obtained, the study allowed the participants to recommend enhancements and fine-tuning of the program, to learn more about the writing programs across the system, and to borrow from the best aspects of programs at other campuses.

* Consortium Coordinator. Other members are Kayleen Sato (Hawai‘i), Joan Gagnon (Honolulu), Louise Pagotto (Kapi‘olani), Marilyn Bauer (Leeward), Peter Starbuck (Maui), Jean Shibayu and Frank Mattos (Windward), and Kenneth Han (Chancellor’s Office).

PBL Interdisciplinary Colloquium

Aaron Koseki
Respiratory Care

During Fall 1992, seven faculty members from Nursing, Counseling, and Allied Health worked with 51 health education students from various disciplines in a 20-hour, zero-credit problem-based learning (PBL) colloquium. Each faculty tutor was assigned a small student group at random to work on a paper-case exercise, "A Family Faces HIV/AIDS." These tutorials were supplemented by a series of UH Psychiatry-Department-sponsored workshops to develop interprofessional training and verify information shared in the tutorial groups. "Independent" PBL was created through the preparation of an annotated list of resources, establishing contacts with community-based agencies and the use of faculty "experts."

A questionnaire was used to obtain student feedback on the effectiveness of the PBL approach as compared with traditional methods.

Analysis of the results, shown above, indicates that the vast majority of the students were satisfied with the learning process which was likened to real clinical situations. Interaction with "experts" increased mastery of the material.

Faculty reported an enjoyable interactive process with students as a result of students assuming greater responsibility.
Distance Education: Users' Impressions

Joe Y F Chun
Educational Media Center

During the past year, KCC broadcast 557 hours of distance education programming, 280 for credit courses and 277 for other non-credit activities. Participating students and faculty feel that distance education has been an effective way to learn as it provides opportunities for peer interaction and communication without additional transportation cost.

The most frequently mentioned advantages and disadvantages, as reported by student evaluation forms, are presented below.

![Graph showing the proportion of agreement for various statements about distance education.]

Comments from faculty surveyed show that:

- all of them want to teach distance education courses;
- KCC courses are not otherwise available to other community college students;
- students at receiving sites sometimes did not receive their class materials; and
- they felt uncomfortable with copyright restrictions.

The Pre-Education Program

Jane Fukunaga
Political Science

In Fall 1986, ten KCC students transferred to the College of Education at Manoa. In Fall 1987 only five students transferred. Yet, during this period, more students were saying that they wanted to be teachers. In 1988, KCC responded to this demand and the Pre-Education Advisement Program was initiated. Formal advising began in Fall 1989.

The fruits of this effort are finally being realized, as shown in the graph above by the increasing number of new KCC students at the College of Education. In Fall 1992, there were overall 64 former KCC students enrolled in the College of Education at Manoa, 35 of them transferring directly from KCC. Also, 10 more former KCC students were classified as general pre-education at Manoa.

In addition to specialized advising, the Pre-Education Program has been active in establishing articulation agreements with UH-Hilo and Chaminade University. News of the advisement has spread as evidenced by inquiries received from students enrolled in other community colleges.
Implications of Varying Course Enrollment Patterns

B Michael K Tagawa
Geography

Examination of course enrollment patterns throughout the registration period reveals considerable differences in student course demand. The graph below shows enrollment patterns for four Social Science courses that were scheduled to be offered this Fall.

Both FamR 230 and Psy 230 show 100% occupancy on August 17. However, at the end of the continuing-student registration period (August 13), Psy 230 was about 80% full, meaning that up to 20% of the students are new students, and have probably not taken the Psy 100 prerequisite. The same pattern can be observed with Econ 131, with almost 40% new students.

Anth 235, an elective, shows low levels of continuing-student demand, being about 20% filled by the end of continuing-student registration. Anticipating a wave of new student enrollment past that period, it was decided that this course was not appropriate for new students. The decision was made to cancel it and replace it with a lower-level core Anthropology course.

Unless arrangements are made for students to be systematically screened for prerequisites, courses that fill slowly will likely contain more students who are less prepared to take them. Under these circumstances, decisions concerning course cancellation may need to be based on enrollment pattern analysis such as the one illustrated in this study.

KCC Institutional Effectiveness

Kenneth A Meehan
Office of the Chancellor

During the 1992-93 academic year, the UH community colleges conducted a comparative analysis of their performance on three criteria that were selected by the Board of Regents: centrality, efficiency, and effectiveness.

Centrality. Demand for KCC is at an all-time high. Over the last six years, enrollment has increased by 37%, with a shift from a majority in vocational education to a significant majority in liberal arts.

Efficiency. All measures of efficiency were high, including average class size (21), percent of small classes (12.5%), and cost per student semester hour (SSH, $60.53).

Effectiveness. More females, older students, part-time students, and underrepresented groups now attend KCC. In response to a survey of all 1991-92 former KCC leavers and graduates, students indicated that they were satisfied with their preparation for transfer and for work.

Resources. KCC devotes 68% of its resources to instruction compared to 63% for the community college system and 51% for peer institutions. Compared to peer institutions, KCC allocates a smaller portion to student services (5% vs. 9%), and to institutional support (14% vs. 29%).

Some of the indicators that have been changing steadily during the last ten years (1983-1992) are shown in the graph above.
The Pre-Engineering Program: Demand Assessment

Alfred J Seita  
Business Education

The recently established Pre-Engineering Program currently advises 55 students. In the process of assessing further demand, a survey was administered to students who are likely to major in engineering-related fields. During Fall 1993, 69 students in Math 205 and 206, Physics 170 and Electrical Engineering 150 were asked to express their interest in the program.

The results indicate the following:

- Over half the students surveyed planned to major in Engineering.
- 77 percent were interested in enrolling in Math 231 within 2 semesters at KCC, and 74 percent were interested in enrolling in Math 232 within 3 semesters.

These results suggest that there appears to be sufficient interest to offer Math 231 and Math 232 for Pre-Engineering and other Science majors at KCC. So far, five KCC Pre-Engineering students have chosen to enroll concurrently at UH-Manoa and HCC to take Math 231 for Spring 1994. Further research into the demand for these and other related courses is needed.

A Profile of LAC Users

Louise Yamamoto  
Learning Assistance Center

At the end of every semester, LAC services are evaluated by faculty and student users. This evaluation, along with the check-in and tutor log-in system, provides valuable information for ongoing activities.

In Spring 1993, 14 Math tutors assisted 2,652 students over 1,813.92 hours. Math 25 and Math 27 students were the largest consumers, as shown in the graph below.

During the same period, a total of 988.25 hours were provided to 1,554 students by 15 LAC writing tutors. Consumption was heaviest by ENG 100 and ENG 22 students.

As shown in the SPRING 1993 end-of-semester evaluation, instructors have an influence in getting their students to use the LAC. The distribution of the requirements by these instructors is shown below.

<table>
<thead>
<tr>
<th>Course</th>
<th>Required LAC Use</th>
<th>Suggested LAC Use</th>
<th>No Mention</th>
</tr>
</thead>
<tbody>
<tr>
<td>Math</td>
<td>46%</td>
<td>92%</td>
<td>0%</td>
</tr>
<tr>
<td>ENG</td>
<td>45%</td>
<td>82%</td>
<td>0%</td>
</tr>
<tr>
<td>HIST</td>
<td>17%</td>
<td>100%</td>
<td>0%</td>
</tr>
<tr>
<td>NURS</td>
<td>33%</td>
<td>67%</td>
<td>22%</td>
</tr>
</tbody>
</table>
Using Focus Groups To Develop a UH Marketing Plan

Darlene Forsythe
Provost's Office

In July 1993, the Office of the VP for University Relations published the results of a study of the image of the UH system.

Extensive focus group sessions were used to identify strengths and weaknesses of each campus and of the system. The results of the KCC focus group are summarized below.

<table>
<thead>
<tr>
<th>KCC</th>
<th>System</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Strengths</strong></td>
<td><strong>Strengths</strong></td>
</tr>
<tr>
<td>• Physical facilities</td>
<td>• Community colleges</td>
</tr>
<tr>
<td>• Programs / projects</td>
<td>• Diversity</td>
</tr>
<tr>
<td>• Friendly atmosphere</td>
<td>• Astronomy</td>
</tr>
<tr>
<td>• Close link with community</td>
<td>• Asia-Pacific studies</td>
</tr>
<tr>
<td>• Flexible schedule</td>
<td>• Ease in obtaining transcript information</td>
</tr>
<tr>
<td>• Accessibility</td>
<td>• Transfer process for CBA-bound students</td>
</tr>
<tr>
<td>• Value (cost)</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>KCC</th>
<th>System</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Weaknesses</strong></td>
<td><strong>Weaknesses</strong></td>
</tr>
<tr>
<td>• No student ID</td>
<td>• State bureaucracy</td>
</tr>
<tr>
<td>• Expensive Summer Session tuition</td>
<td>• UH bureaucracy</td>
</tr>
<tr>
<td>• No financial aid for Summer School</td>
<td>• Disregard for community colleges</td>
</tr>
<tr>
<td>• No year-round school</td>
<td></td>
</tr>
</tbody>
</table>

The focus groups judged the community colleges highly, naming them as one of the strengths of the system. They recommended concentrated efforts on academic programs, leadership, students, athletics, and facilities.

These results are to be used to develop a marketing plan to strengthen the UH's image in order to secure appropriate resources.

1993 Former Student Survey Response Comparisons

Kenneth A Meehan
Office of the Chancellor

A total of 1,287 former students of all UH community colleges, 250 from KCC, responded to a survey. The survey was mailed out to Fall 1993 graduates and leavers from all campuses.

The primary differences between former KCC student responses and those from other community colleges were in the significantly higher importance placed by former KCC students upon obtaining an A.S. degree, completing courses for transfer, and preparing for a job career.

Two major differences emerged. In each case, a statistically significantly higher percentage of former KCC students responded compared to former students from other campuses:

- More former KCC students cited the reason for not returning to their community college as being the transfer to another college or university (32% versus 19%)
- Former KCC students had higher educational aspirations. About 77% indicated that the highest degree they plan to earn was a Bachelor's degree or higher, compared to 63.5% from other campuses.
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