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ABSTRACT

Designed as a forum for research and discussion of issues relevant to community college researchers and planners, this journal issue begins with Kathryne Baratta-Wilders' discussion of the role of institutional research in the community college and her suggestions of ways for improving its status within an institution. Next, C. Nelson Grote presents a case study of a long-range planning process undertaken at Schoolcraft College in Michigan. Grote outlines the process's preparation, six-phase model, and progress in implementation, and offers a critique of aspects of the planning process. Then, R. Gregory Litaker examines the microcomputer as a resource for the institutional researcher. He presents a brief history of the evolution of the microcomputer, considers its use in institutional research, and includes a comparison of the most popular brands currently on the market. Next, Jack Friedlander presents the results of a study of science education in the Los Angeles Community College District conducted to assess students' proficiency in basic skills, course completion rates, course presentation methods, and the proportion of remedial science courses offered. Friedlander also offers recommendations for increasing student success. Following five book reviews and a brief overview of enrollment figures from the American Association of Community and Junior Colleges, Jim Palmer cites ERIC documents dealing with program evaluation in the two-year college. (HB)

Community College Journal for Research and Planning

Refereed Journal of the

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PURPOSE

The Community College Journal for Research and Planning provides a forum for the exchange of information among members of the association and among professional colleagues in the field of research and planning. The journal is multi-purpose and diverse in its articles and information; however, it is unified in its purpose to be of service to professionals working in the fields of Community College research, management and planning.

The journal is designed to provide an outlet for research and discussion on issues important to community college researchers and planners. It also serves as an information source for all elements of higher education interested in institutional management. The journal meets a need to communicate the findings and achievement of research and planning professionals concerned with issues of concern to community colleges.

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COMMUNITY COLLEGE JOURNAL FOR RESEARCH AND PLANNING

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--An affiliate of the Association for Institutional Research.

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Instructions to Authors

All manuscripts will be reviewed and considered for publication. Manuscripts should be submitted in duplicate, double-spaced on 8½ x 11 white bond. There are no restrictions on the size of the manuscript or the topic reviewed except that articles serve the needs of community college research as stated in the purpose. Style of the journal will conform to the guidelines found in the Publications manual of the American Psychological Association. Correspondence and manuscripts should be submitted to the Editor, Edith Carter, New River Community College, Dublin, Va 24084.

COMMUNITY COLLEGE JOURNAL FOR RESEARCH AND PLANNING

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SPRING 1982 VOLUME II, NUMBER 1

THE PRESIDENT'S FORUM

INSTITUTIONAL RESEARCH: ARE WE DOING ALL THAT WE CAN TO ENHANCE ITS STATUS?

It is common knowledge among professionals in the field of education that you can determine the status of an administrative office by looking at an organizational chart and determining how far it is located from the president. With increasing frequency, it seems that Institutional Research offices are no longer reporting directly to the chief academic administrator. A quick survey of colleges with new presidents, hence a reorganization, supports this statement. Some Institutional Research offices have been consolidated with other offices and now perform dual functions. Dwindling resources may have dictated some of these changes in the organizational structure.

Lack of role definition may be a second cause of this problem. Like many other professional positions, the role of the community college institutional researcher is complex and varied. These characteristics contribute to the difficulty of defining the institutional research role within and across institutions. Studies and personal observations by the author indicate that the community college institutional research function varies with institutional size and age; organizational structure; administrative style; and the preparation and preferences of the researcher. In terms of organizational structure, in many institutions role definition is complicated by multiple role assignments. In these institutions the position title is Director of Institutional Research and _____. The blank is completed with responsibilities such as planning or development. These alternate roles often dominate the research role.

Another cause of this problem of diminishing impact and diluting of function may be due to the personal

and professional attributes of the individual holding the position. Due to lack of training, some institutional researchers may isolate themselves from central management functions. Other researchers may have personalities that conflict with the management style of the institution-thus becoming isolated from top management. Several reasons have been given for the placement of the Institutional Research function in the organizational structure. For two of the reasons, little can be done by an individual; however, as individuals we can do something. The following suggestions are recommended for improving the status of Institutional Research within an institution:

1. Shift decision-making power from Institutional Research to management. Make sure that management is involved during the entire project-from conceptualization to completion--In this manner management will have made a commitment to the project. They know their needs better than we do--listen to what management says. Management has to live with the solutions to the problems; therefore, they should have sole responsibility for making recommendations.

2. Improve credibility. No matter how well designed, organized and useful your study is, the management is not going to use it if they perceive the researcher as being condescending, inaccessible or unresponsive to their needs. Deliver what you promised when you promised it.

3. Produce timely outputs. Data should be used to aid in decision-making, not to support a decision that already has been made, therefore, data must be readily available at all times.

4. Produce accurate reports. Nothing reduces the status of a research office like a report with inaccurate data. Two inaccurate reports and

all the credibility built up by your office is gone. Accuracy is one area where even one mistake can be costly.

5. Provide assistance to staff outside central administration. Data is not only the need of administration. You can provide a valuable service to other staff by aiding them in their efforts. You are thus building a team of users that will support your cause throughout the institution.

6. Assume responsibility for gathering and reporting data requested by outside agencies. Most administrators will gladly give up the routine data collection efforts for outside agencies. By collecting this data you can standardize the results and notice areas where a need for improved data exists.

7. Publicize internally the results of your work on a regular basis. Studies that are conducted for an individual should remain only in the domain of that individual; however, studies on the institutional level can be reported institution-wide. Results of a follow-up of graduates or a profile of currently enrolled students can be disseminated institution-wide in the form of a brief or a digest.

8. Write reports for the user. Avoid lengthy discussions on methodology and statistical technique-the user could not care less. Do not use Institutional Research jargon--anyone outside of Institutional Research will not know what you are talking about. Avoid an overly detailed and technical report. Use numbers, words, and pictures in your report. There are three types of people. "number" people -who are

best communicated with by numbers; "word" people--who best understand ideas, expressed in words rather than numbers; and "picture" people--who need charts and graphs to help them appreciate the findings.

9. Package your work with class. Although there is a saying that "you can't judge a book by its cover," a poorly packaged report will not even be given the opportunity to be judged. The final report should have visual appeal and be typed neatly in a standard format. Have pride in what you produce.

10. Coordinate the collection of data produced by more than one office. By doing this, you will assure consistency and relevancy of reports produced.

11. Go with the green light. No matter how good you are, you can only do so much. Work with areas and ideas that are needed and wanted by management and staff. Build up your reputation as a team player from a service unit and you may get to make suggestions for future study.

12. Orient your work toward managerial needs. First and foremost, your reason for existence is to supply management with data, so their needs must always come first. Show a genuine interest in working with college-wide management concerns.

13. Be flexible in your approach to management and problem solving. There is an old saying that **"there is more than one way to skin a cat." There is always more than one way to solve a problem and to work with management.**

14. Acquire a sense of timing. Know when to move forward, when to pull back and when to maintain

position. Many excellent studies are tabled forever because of inappropriate timing.

15. Show an interest in people. Individuals have a need to know that what they are doing is important. If you show people that you care about what they are doing, it makes working with them a lot easier.

16. Focus on issues. Many times individuals focus on problems that are small or tangential to the issue. Your job is to focus on the main issue--the solutions to secondary concerns will then fall into line.

17. Be available. If possible, never turn down a request for assistance. The person coming to you thinks that their problem is the most important in the world--if you rebuff them you can damage your chances for future support.

18. Have a strong code of ethics. Once you compromise your position, further violations of ethical standards are likely to follow.

19. Know your data processing manager. The information systems manager is a necessary ally, get to know him/her well. The need to process and collect data must be done with the blessings of this person for most of your requests will be processed by this office.

The future of your Institutional Research office is in your hands. Institutional Research has no life of its own it is a service function and like any service function, if it does not produce what is wanted, it is eliminated. Incorporating the above suggestions may not be easy, but if you want to maximize your impact on educational practices, you must do more than just conduct studies and write up

the results for other Institutional Research professionals to read.

Kathryne Baratta-Wilders
President N[redacted]
1981-82

A CASE STUDY

LONG-RANGE PLANNING PROCESS*

Schoolcraft College
Livonia, Michigan

C. Nelson Grote

Motivation

Why plan? Although Schoolcraft College had traditionally been involved in planning, it was not an integrated "systematic" process. Most of the planning was done through isolated reports required by State agencies, typical forecasting of enrollment, projections of sources of revenue and costs and segmented planning. A five-year plan had been published (1975-80) and a long-range site plan for the use of land had been adopted. It was becoming obvious in an era of unstable funding in the face of a tax revolt and increased competition for the traditional and non-traditional student, that systematic planning was of increasing importance. The administration recognized the need to become more sophisticated in the planning process and this interest was strongly supported by the Board of Trustees.

Preparation

Since any major new development, that suggests change, needs the support and involvement of the chief executive officer (CEO) as well as the executive staff, a staff development program was initiated a year ahead of the planning process. A review of the literature was conducted, books and publications were ordered and circulated and the President

*Workshop: Responding to Societal Trends Through Long-Range Planning. Presented at the ACJC Annual Convention in Washington, 1981.

and key staff members attended workshops and conferences on long-range planning. Copies of other long-range planning models and processes were collected, reviewed and discussed with fellow Presidents and staff. A small steering committee of administration, faculty, staff, and students was appointed very early.

Commitment

The Board of Trustees included persons from both small and large corporations where planning is an integral part of management. Therefore, it was only natural that the Board expressed its interest in the need for systematic planning at the college. The Board pre-committed the President by making long-range planning one of the measureable objectives in his performance evaluation. It was believed that the President should give primary direction to the process until such time that it was operational, with the understanding that one or more staff members should become sufficiently involved in the initial cycle to assume the responsibility for the coordination of the process in future years. An initial budget of $5,000 was established, primarily for the use of consultants, in addition to support services already available to the President such as the Data Processing Center, research and technical assistance and staff time.

Process

Through the use of an enlarged steering committee, including two representatives from the Board of Trustees, it was quickly agreed that rather than developing a "plan" that we would develop a "process." The term "process" implies something that is continuous and where involvement of many people is inherent when compared to "a plan" that is completed and often put on the shelf. Secondly, we decided that a planning model would be developed specifically

for Schoolcraft College rather than adopting a model from another college or buying a planning package from a consulting firm. The advice from consultants and supported in the literature on planning was that the model should be unique to our institution but at the same time should contain elements common to most planning processes.

The Model

After months of study, discussions with the steering committee and review by consultants, a "closed loop" model involving six phases was adopted. (See model attached) It follows a basic Planning, Management and Evaluation (PME) format. The Board of Trustees is involved at three major points, a review between Phases I and II, a second review between Phases II and III and in the final evaluation. The use of external resources concludes with strategic planning (Phases I and II) and the process becomes internal with the management stage (Phases III, IV and V). In other words, the operation and implementation stages are clearly the responsibility of management. The model calls for a "roll up" of goals every five years, institutional objectives every two years and division objectives and activities annually.

Scheduling

The naive would suggest that a planning process can easily be put in place in six months--at most a year. When we began to schedule the various stages and phases, we agreed on a time interval of 15 months for the first time through the process. Experienced presidents and consultants advised us that we were too ambitious, especially when a busy president was going to direct the process with limited use of staff and consultant services. Experience has shown that we were too ambitious, even though our revised

schedule (see attached) extended over 30 months which would have fully implemented the process through two cycles.

Use of Consultants

Minimum use of consultants has been our practice. A person from a national consulting firm was invited in early to critique the model and to assist in the orientation of executive staff in relation to the planning process. The same person returned a few month's later to assist in the orientation of the middle-management staff in relation to some basic concepts of planning as well as to serve as the resource person in the drafting of scenarios and conjectures. Later, a consultant from a community college who had had direct experience in the design and implementation of a planning process was invited to the campus. He critiqued the process through Phase I and assisted in the preparation of the details leading to the goals-setting process. He will be invited back to assist in the drafting of institutional objectives that will support each of the goal statements.

Progress

After 15 months of work, we find ourselves five months behind our initial schedule. However, there was a total lapse of five months due to a serious labor dispute, combined with major budget revisions due to state aid cutbacks and a heavy legislative session. As of Spring 1981, we have:

1. Completed the review and redraft of our Mission Statement, which by the way coincided with the initial steps in preparation for reaffirmation of accreditation by our regional association.

2. Following a "futuring" exercise, we drafted seven (7) scenarios with multiple conjectures for each and have completed the validation and analysis of the conjectures.

3. We have completed our institutional profile and refined our data base to enable us to make periodic updates.

4. We have developed a set of goal statements for 1981-85 that were validated by a jury of 23 people representative of the college and the community and cross validated our goal statements with selected conjectures from the scenarios. This involved three (3) sessions over a four-week time frame.

5. The goal statements are ready to be reviewed by the Board of Trustees at the next regular meeting.

6. Preparation is being made to begin the stage where institutional objectives are written for each goal statement.

Hindsight--a Critique!

1. While the CEO needs to demonstrate his/her commitment to the process, a busy CEO, subject to the daily flow of problems and issues, is severly limited as to the time that can be spent on long-range planning--especially in giving the project continuous attention. More responsibility should have been given earlier to staff and a lesser commitment should have been made on behalf of the CEO. It was a good decision to spend time early on the definition of terms (see attached) for without such an agreement, the process would have been most difficult.

2. Too little time was allotted to the writing of the scenarios and conjectures and much more training should have been given to the discussion leaders. Orientation, although specific and illustrative, over a lunch hour period proved to be inadequate. The one and one-half day staff development workshop on long-range planning for mid-management was too short and intense. It should have been in two segments rather than in one.

3. The scenarios and conjectures should have been edited by a common person or subcommittee prior to the validation process. Not only were some conjectures poorly drafted within certain scenarios, there was insufficient uniformity in format across the scenarios and conjectures that created problems later in the process. Conjectures should have been written in terms of the external environment rather than as related specifically to Schoolcraft College.

4. A request to a cross section of faculty, staff and students to submit sample goal statements was ineffective. Even though definitions were provided and sample statements were cited, most statements were objectives rather than goals and the response was limited. An orientation of one to one and a half hours preceding the request would have been much more productive.

5. The use of a carefully selected goal-setting committee comprised of ten in-house people and 13 from the broader community proved to be an excellent decision. The visibility of the CEO in this step proved to be wise and enabled us to utilize some busy and important people from the community for this very significant assignment. However, more time at the first meeting should have been spent on a discussion of the philosophy of a community college and of our Mission Statement. Also, small groups spent too much time on the wording (editing) of goal statements rather than identification of substance of possible goals.

6. It is difficult to sustain interest throughout the faculty and staff as different phases of the process are being developed when only representatives from the groups are directly involved. Additional progress reports should have been made. The unfortunate delay of five months has also effected the inertia and motivation of the mid-management group especially.

Major Responsibilities of the LRP Steering Committee

1. Review and complete basic design of LRP model.
2. Establish calendar and time lines for each phase.
3. Review factors that will influence the future and identify potential impact on College.
4. Review mission of the College.
5. Identify major categories in which data will need to be collected and analyzed and review College profile.
6. Determine critical points requiring consultation by an outside person or firm.
7. Determine the need for and composition of other LRP Committees, especially the Committee on Goals.
8. Assist in the evaluation of the LRP model as called for in Phase VI and recommend necessary changes in the LRP model.

Definition of Key Terms - LRP

Mission - The purposes for which the College was established; a charge; the charter or general direction that guides and directs an institution in what it

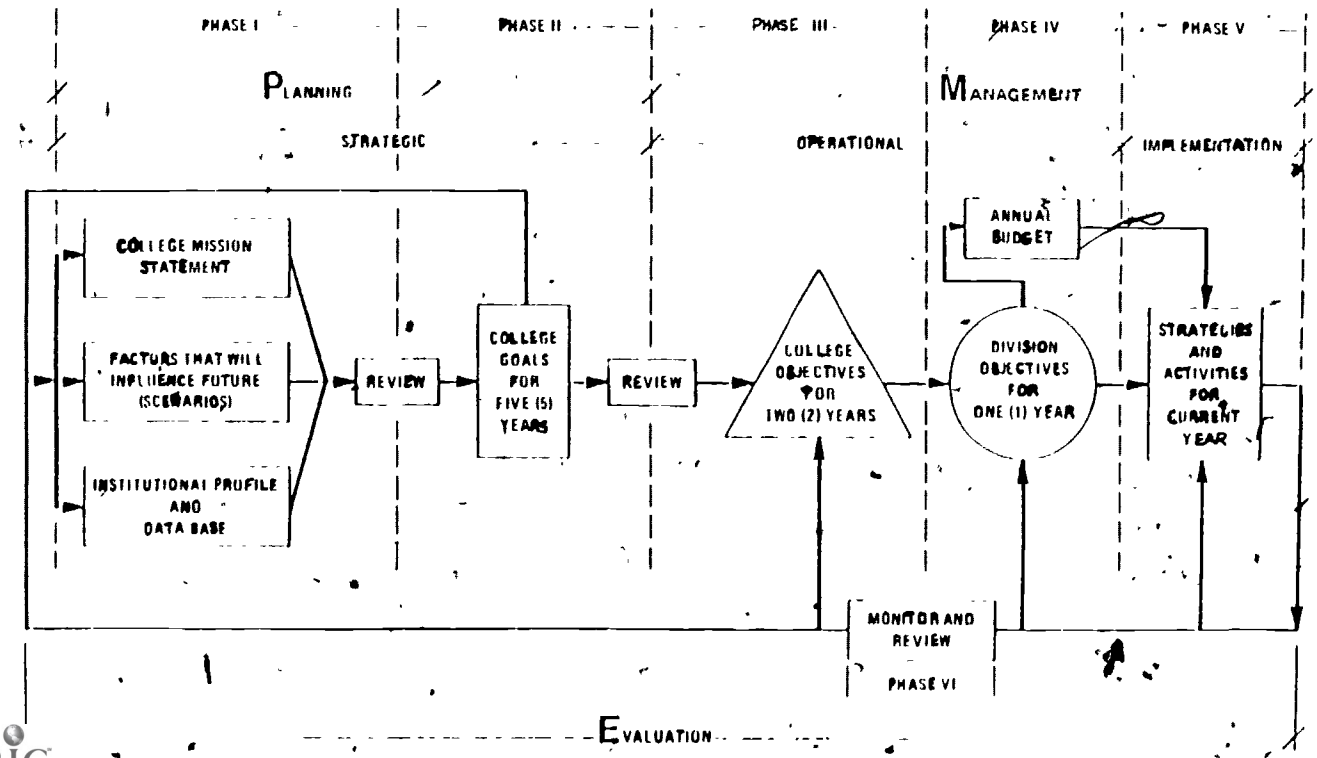
does; often includes a philosophical statement; usually broad statements relating to programs and services when applied to postsecondary education. (See Policy 1010)

Goals - An aim; a statement of a desired future position; a generalized end; a desired condition or state of education affairs toward which effort is directed to accomplish the mission (purposes) of the College.

Objectives - A specific result of a course of action; something to work toward; derived from a goal, an intended result that is quantifiable; an action capable of being evaluated; not synonymous with an activity or a group of activities; may be short range or long term.

SCHOOLCRAFT COLLEGE
18600 Haggerty Road, Livonia Michigan

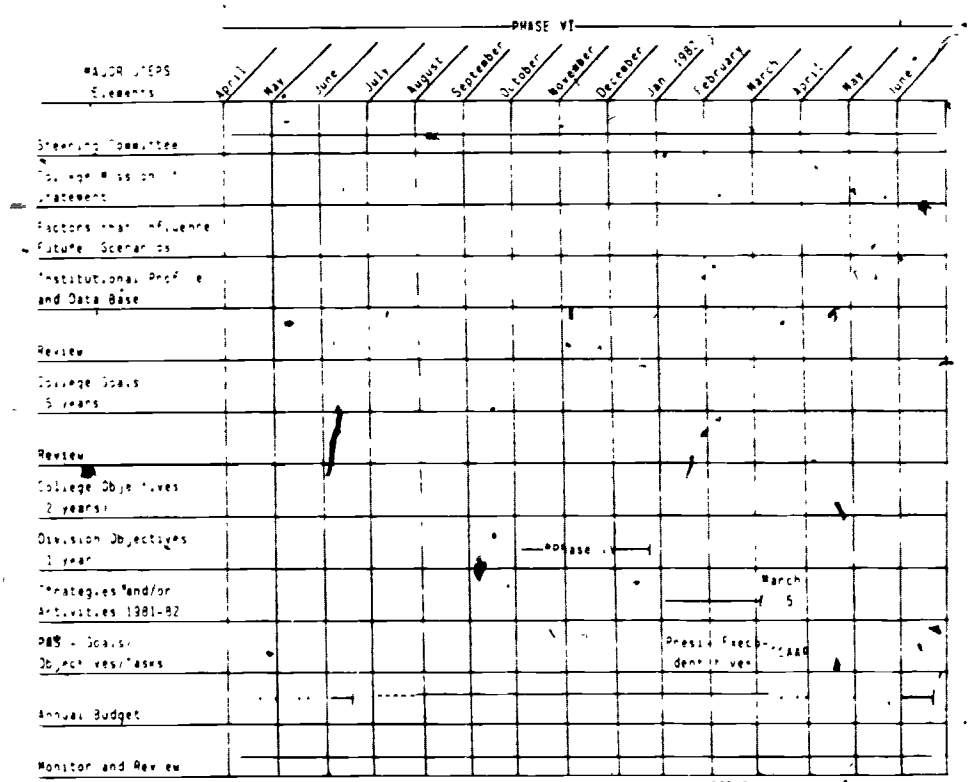
LONG RANGE PLANNING PROCESS



LONG-RANGE PLANNING PROCESS
(Proposed Time Schedule)

MAJOR STEPS (Elements)	PHASE I								PHASE II			PHASE III			PHASE V*
	Jan 1980	February	March	April	May	June	July	August	September	October	November	December	January	February	March
Steering Committee	Appointed Jan. 15														
College Mission Statement		Feb. 6		April 23											
Factors that Influence Future (Scenarios)		Feb. 6						Aug. 20							
Institutional Profile and Data Base	Jan. 23							Aug. 13							
Review								Aug. 20							
College Goals (5 years)							July 22			Oct 22					
Review										Oct. 22					
College Objectives (2 years)												Dec. 19			
Division Objectives (1 year)												By Dept* 1st year thru			
Strategies and/or Activities 1981-82															March 15
PAS -"Goals/ Objectives/Tasks													President	Executive	SCAAP
Annual Budget															
Monitor and Review															

*Phase IV, with exception of Annual Budget will be omitted 1st time through the Process but will be done in 1981-82 cycle.



NOTE Because of space limitations this schedule has been separated into two segments The reader should consider the second chart as an extension of the first

THE MICRO-COMPUTER: A NEW RESOURCE FOR THE INSTITUTIONAL RESEARCHER

R. Gregory Litaker

This study will present a brief history of the evolution of the micro-computer and will describe its basic elements. The usefulness of this new resource to the institutional researcher will then be discussed. Also included will be a comparison of several of the most popular brands of micro-computers currently on the market.

In the last fifteen years many changes have occured in the computer industry which have had and continue to have significant effects upon those of us who use these machines in our work. Rapid advances in the technologies used in computer equipment design and manufacture have reduced the cost and increased the capacity of available computer services to the colleges and universities. Advances in micro-electronic circuit design and manufacture are among the most dramatic areas of change.

The first impact of these advances on university computing was felt in 1965 when the PDP-8 mini-computer was released. Until that time the majority of university computing was done through a central resource. Suddenly these mini-computers began to appear in engineering schools, hospitals, and laboratories. But at a price of $50,000 each, there were few that could afford them.

As the prices for these machines continued to decline, more were purchased. Unlike their mainframe counterparts, these mini computers could not easily perform a wide variety of tasks, so they found their niche by providing specialized computing functions to the various units that could afford them. Computing

was beginning to be decentralized. This smaller-sized computer could provide significant power previously available only through the main computer facility or perhaps not at all.

Due to continuing technological advancement, the prices for the mini-computers has dropped into the $1,000 to $5,000 range. Also an entirely new breed of computers has emerged. These new micro-computers, small enough to sit on a desk top and which look deceptively like a typewriter can deliver more calculation and logic power than the largest computers being built in the 1950's and are priced in the $500 to $1000 range.

According to Adam Osborne in his "Introduction to Microcomputers", the actual birth of the micro-computer went something like this:

> Datapoint Corporation of San Antonio, Texas, are a manufacturer of "intelligent terminals" and small computer systems. In 1969, they (along with Cogar and Viatron) attempted to make "a great leap forward". Datapoint engineers designed a very elementary computer, and contracted with Intel and Texas Instruments to implement the design on a single logic chip. Intel succeeded, but their product executed instructions approximately ten times as slowly as Datapoint had specified, so Datapoint declined to buy, and built their own product using existing logic components. Intel were left with a computer-like logic device, whose development had been paid for. They were faced with the choice of manufacturing and selling it, or shelving it. They chose to sell it, called it the Intel 8008, and the microcomputer had arrived.

Generically known as micro-computers, these machines have to some degree, all of the same capabilities of their mini and mainframe counterparts.

INPUT AND OUTPUT DEVICES:

The micro-computers will have at a minimum a typewriter-like keyboard as an input device and a CRT display tube as an output device. Additional peripheral input/output devices are listed in the appendix.

ARITHMETIC AND LOGIC UNIT:

This is the "brain" of the machine - the microprocessor. This is the part of the machine that controls all of the logical and mathematical functions of the computer. There are several types of these processors available in the various machines the individual nuances of which are more technical than practical.

MEMORY:

Main memory or random access (RAM) memory is where the programs and data reside while the computer is operating. The amount of available memory is a determinant in the maximum complexity of the problem that the computer can resolve. These machines usually come with from 8 to 64 thousand bytes of RAM memory (written 64K), but recent announcements promise machines with 128k of memory which will be delivered within the year. It is interesting to note that the first IBM System 360 that the author worked with had 128k of memory.

DATA AND PROGRAM STORAGE:

A simple cassette tape recorder serves as a program and data storage device. Magnetic disk drives which are faster and easier to use are also available.

In summary, the micro-computer is a small computer capable of accepting instructions from the user, storing those instructions (programs) and data, executing the instructions, and displaying the results.

MICRO-COMPUTERS AND INSTITUTIONAL RESEARCH

As was evidenced in the AIR NEW DIRECTIONS monograph on New Trends in Administrative Computing, institutional researchers are experiencing more and more interaction with computers on a variety of levels. We have historically performed a number of activities which require direct interaction with the computer. The most frequent tasks are those of data manipulation and analysis, selective information retrieval and reporting, projections, modeling and simulation, text and file editing, and plotting or other graphic analysis. Many of these activities will always require the use of the "main" computer because of large memory or data file requirements, but many other functions can be performed by a micro-computer.

WHAT A MICRO-COMPUTER CANNOT DO:

Micro-computers cannot directly store large data bases. The storage capacity for the small disk drives used in micro-computer systems is usually limited to 500k bytes of storage space. That converts to about 50 pages of text material. While there are other types of drives which store up to a million bytes of data the other will probably experience difficulty making a copy of this data, that is "backing-up" the file. Another thing micro-computers cannot do is to work with large matrices of the type required when running SPSS, MINITAB, BMD, OSIRIS, DATATEXT, or SAS.

The arithmetic precision of many micro-computers will be insufficient for sophisticated extended-precision calculations. Many of these machines will not allow matrix arithmetic and have limited numbers of built-in trigonometric functions.

WHAT MICRO-COMPUTERS CAN DO:

Micro-computers can adequately perform all necessary

functions on small to medium sized files. Search and retrieval, sorting, and editing functions are all possible.

Most statistical analyses can be performed on small data sets with limited numbers of variables. Examples of these types of data might be several years of enrollment figures or salary data. The author has implemented two enrollment projection models on micro-computers.

Text-editing applications are useful for updating or correcting files. Many micro-computers are being bought solely to be used as word-processors for preparing reports or correspondence.

Specialized programs are available for easily and quickly preparing charts and graphs. With a few data values in hand, a line, histogram, or bar chart can be drawn and annotated in a minute or two.

With the addition of a communications modem a micro-computer becomes a super-smart terminal that can actually save you computer connect time and can save the resource of the main computer. It is possible to prepare a file, be it a data file, a program file, or perhaps a job control file, in your office on your micro-computer, then connect your machine to the main computer via a telephone and "send" the file to the main computer for processing. This "off-line" preparation of data or programs can have significant impact on the amount of productive time spent connected to the main computer. A similar application might be off-line data entry where data are keyed into the micro-computer, edited, and verified and then transmitted to the main computer instead of using valuable connect time for these activities.

This communications capability has been recognized by EDUCOM who are promoting the use of a network access software system called EASY. This program allows an EDUCOM member to access five of the EDUNET computer sites around the country. The user is given the telephone number to dial to access the computer that they select and the program then adjusts to the various protocols used at the different computer centers automatically so that the user has a minimum of difficulty interacting with the host computer.

The micro-computer should not be compared to its larger predecessors when evaluating its potential usefulness to the institutional researcher. It deserves to be assessed on its own merits, capabilities and unique services.

The micro-computer can be a sophisticated analysis tool, a data entry device, a smart communications terminal, a graphics development aid, or an automatic filing system. It can provide visual, auditory and hardcopy output. And it costs less than a memory typewriter.

Let's look at a hypothetical day at an office in which the micro-computer has been installed.

3 A.M. - The micro-computer automatically calls the host (main) computer, submits a job to run at this low-priority time, and then logs-off of the host.

7 A.M. - The micro-computer automatically calls the host computer, logs-in and collects run statistics for yesterday, last night, and inquires about the status of any currently running jobs. It then prints a status report of job activity for the office.

7:30 A.M. - The micro-computer prints today's appointment calendars and reminders to be distributed to the office staff.

9:00 A.M. - A staff member runs a program which automatically logs him into the main computer and 'converts' the micro-computer into a terminal. He then runs an analysis program and logs-off.

9:30 A.M. - A staff member, using statistics from a previous analysis, uses the micro-computer to draw and annotate a series of bar graphs for a report. Tomorrow he will return and use the word-processing program to complete the text of the report.

10:30 A.M. - The secretary updates the appointments file with meetings for next week.

11:00 A.M. - A staff member using the text-editor program enters a series of SPSS program statements. When the

editing is finished, the micro-computer is put into 'terminal' mode and the SPSS file is "up-loaded" to the host computer for processing.

1:00 P.M. - A staff member runs a program which accesses the EDUNET computer services at Cornell and continues to work with the EDUCOM Financial Planning Model.

2:30 P.M. - A staff member takes a telephone request for information on headcount and FTE figures for department X and searches the enrollment data base on the micro-computer for the answer.

3:00 P.M. - A staff member adds additional data to an econometric indicator file which is being prepared for a new enrollment projection model.

4:00 P.M. - As was pre-arranged, the director, away on a trip to University Z, calls the telephone number dedicated to the micro-computer and is automatically connected to the micro-computer which now serves as the host computer. He then accesses a file and prints a report at the remote site to demonstrate the idea of 'electronic mail'.

4:30 P.M. - The secretary generates agenda letters for all of the members of the committee on computer resource allocation.

A NOTE OF CAUTION:

One of the biggest problems with a micro-computer is that it is so absorbing. The fact that it is capable of performing so many tasks can be a trap for those who are too curious.

APPENDIX

The following is a brief description of several of the best selling micro-computers. A fair comparison among these machines exceeds the scope of this paper. The reader

is referred to the sources cited at the end of the paper for a more detailed review of the available equipment and their individual characteristics.

MICRO-COMPUTER HARDWARE SYSTEMS

Company	Model	RAM Memory	Price Range
APPLE	II Plus	8-64	$1195-1695
COMMODORE	Pet	8-32	750-1100
OHIO SCIENTIFIC	Challenger Series	24-48	649-2549
RADIO SHACK	TRS-80 & I&II	4-16	499-988
TEXAS INSTR.	99/4	16-64	950-1350

Options on most of these systems include expanded memory, magnetic disk storage, and color video. The following is a partial list of peripheral equipment options available for many of these micro-computers: card readers, light pen, bar-code reader, graphics tablet, communications modem, voice synthesis and recognition equipment, music synthesizers, various quality printers, and plotters.

(EDITORS NOTE)

Both Radio Shack and Apple have extensive software available from many vendors. This is not true of the other computer systems listed. This may influence a college's choice of hardware if a decision is made to purchase.

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On Computing, On Computing Inc., Peterborough, NH, 03458.

SCIENCE EDUCATION IN THE URBAN COMMUNITY COLLEGE

Jack Friedlander

The decline in the academic skills of entering college students is well documented. Results of various scholastic aptitude tests given by such well-known national testing organizations as the Educational Testing Service, American College Testing Program, and the National Assessment of Educational Progress show that scores for entering college freshmen have dropped every year for the past ten years (Cooperman, 1978; ACT, 1972, 1976, 1978, Education Commission of the States, 1978).

Findings obtained in national studies of science education in community colleges confirm this slide. To illustrate, a nationwide survey of faculty teaching courses in the sciences and social sciences showed that over half of the instructors said that their courses could be made better if they had "students who were better prepared to handle course assignments" (Brawer and Friedlander, 1979). A more recent study of science education in the nation's community colleges revealed that: (1) both administrators and science faculty indicated that a substantial proportion of students in science courses lacked adequate language, mathematics, and study skills; (2) the working condition science faculty were least satisfied with was the prior preparation of students; and (3) over 30 percent of the science faculty cited, "inadequate student preparation," as the major obstacle to providing a quality education (Westat, 1980).

Purpose of Study

Given this downward trend in student basic skills, it would be useful to have information on the following questions:

1. How do instructors of science courses (agricultural sciences, biological sciences, engineering sciences and technologies, mathematics and computer sciences, physical sciences, and social sciences) rate most students in their abilities to perform basic academic skills?

2. What percentage of the science courses in which students enroll are successfully completed?

3. How do science faculty present their courses?

4. What percentage of science courses are designed for students with academic deficiencies?

5. What do science faculty recommend for increasing student success in their courses?

Methods

The questions on student skills, instructional practices, and faculty perceptions on what would make their courses better, can be answered from data obtained in a survey of faculty teaching courses in the sciences and social sciences (N=99) and their students (N=2,605) in the Los Angeles Community College District. Information on course completion rates is available from an analysis of student transcripts (N=8,873) from the same district. Data on the number and variety of science courses offered in the District was obtained from an analysis of class schedules for the 1979-80 academic year.

This National Science Foundation sponsored study conducted by the Center for the Study of Community Colleges involved administering surveys to students and instructors in every thirteenth class section offered at 10:00 a.m. and 7:00 p.m. on Wednesday of the fifth week of the 1980 fall term. Completed surveys were obtained from 268 of the faculty members (72% response rate) and 6,426

of the students in their classes (10,000 student surveys were handed out). It is difficult to know what the response rate for students was since many were not present on the day the survey was administered. The transcript study involved examining the course taking histories of a seven percent random sample of students (N=8,882) enrolled in the District in the Fall of 1979.

Results

Instructor Ratings of Their Student's Skills

Science instructors were asked concerning a specified course they were teaching, "How do you rate the abilities of most of the students in your class?". The response categories were as follows: (1) most of my students are able to do this adequately; (2) most of my students have difficulty in doing this; and (3) most of my students are unable to perform this skill adequately. Responses to this question are presented in Table 1.

The information reported in Table 1 shows that about half of the instructors noted that most of their students were able to do the following activities adequately: express themselves when speaking (57%), work on problems or assignments that require arithmetic (50%), work on laboratory exercises by following a set of written directions (49%), have the necessary time to complete course assignments (48%), and understand course reading assignments (47%). Less than 30 percent of the science instructors felt that most of their students were able to perform the following activities adequately: express themselves in writing (23%), learn on their own, pursue ideas, and find needed information (20%), identify biases that might have influenced the findings of a research report (15%), work on problems or assignments that require college algebra, analytic geometry or calculus (18%), or statistics (9%).

These findings show that a high percentage of the science instructors--over 40 percent--noted that most of

TABLE 1

SCIENCE FACULTY RATINGS

OF THEIR STUDENT'S SKILLS

(N=99)

	Most Of My Students:		
	Are Able To Do This Adequately	Have Difficulty In Doing This	Are Unable To Perform This Adequately
Express themselves when speaking	57	38	5
Summarize major points in class readings	54	40	6
Work on problems or assignments that require arithmetic (e.g., multiplication, division)	50	41	9
Work on laboratory exercises by following a set of written directions	49	42	9
Have the necessary time to complete course assignments	48	48	5
Understand course reading assignments	47	52	1
Understand the uses of science-technical developments and uses in society	40	50	10
Spend a concentrated period of time--two hours or longer--studying for this course	35	59	6

Table 1 (Continued)

	Most Of My Students:		
	Are Able To Do This Adequately	Have Difficulty In Doing This	Are Unable To Perform This Adequately
Work on a paper or a project in which students have to put together ideas from various parts of the course	32	53	15
Express themselves in writing	23	63	14
Learn on their own, pursuing ideas, and finding needed information	20	65	15
Work on problems or assignments that require college algebra, analytic geometry, or calculus	18	49	34
Identify biases that might have influenced the findings of a research report	16	58	26
Work on problems or assignments that require statistics (proportions, probabilities)	9	59	33

the students in their classes had difficulty or were unable to perform each of the basic skills considered. According to the instructors, students were weak in the very skill areas which the faculty regarded as important in terms of students' success in their courses--mathematics, writing, understanding course reading assignments, identifying biases in research reports, independent inquiry, and devoting the necessary time to preparing for the course.

Student Need of Support Services in Basic Skills

Science instructors were asked to indicate the percentage of their students who could benefit from basic skills programs provided by the college. The response categories were as follows: 0-25 percent, 26-50 percent, 51-75 percent, and 76-100 percent.

Over one-half of the instructors felt that 50 percent or more of the students in their classes could benefit from basic skills courses in reading and writing and in the sciences. Over 40 percent of the science faculty noted that most students in their courses could profit from a basic skills course in mathematics and also from some tutoring in science and mathematics.

Course Completion Rates in Science Courses

Course attrition rates in many community college courses are often in excess of 30 percent (Friedlander, 1980). In the present study, course completion rates were based on an analysis of 8,873 transcripts (a seven percent random sampling) of students enrolled in the District in Spring 1979. The data analyses were based on all science courses in which these students were enrolled and were on record during the first census week (fourth week of the term) between Fall 1974 and Spring 1979.

The results of this analysis revealed that students in the Los Angeles Community College District completed 52 percent of the science courses in which they enrolled. The area of science in which students completed the highest percentage of their courses was agriculture (72%). This was followed by social science (56%), biological science (54%), engineering (54%), physical science (49%), and mathematics (48%).

Instructional Practices

The findings of this study show that there was much variation in the educational abilities of students enrolled in science courses. According to the instructors, a high percentage of students--in most instances over 50 percent--have some difficulty in performing activities that require reading, writing, computing, independent inquiry, and a commitment of time to complete course assignments. On the other hand, a sizable number of students enrolled in the same courses were quite capable of performing these activities adequately. How then are science faculty teaching their courses to groups of students whose skills run the gamut from poor to excellent? This question becomes even more important in light of the finding that most students with deficiencies in their basic learning skills do not seek assistance from the programs designed to strengthen those skills (Friedlander, 1982).

Selection of Course Materials

Just over one-third of the science faculty noted that their instructional materials were at a level that was appropriate for the diverse backgrounds of students taking their courses. However, 20 percent of them said their instructional materials were chosen to be similar to those used in parallel courses at the state colleges and universities. About 12 percent of the science faculty

selected their course materials so that the presentations would be at levels that students with limited reading and comprehension skills could understand.

Organization of Course

We asked a question about the instructional approaches used in science classes (Table 2) and found the overwhelming majority of faculty saying that all students study the same material at the same time (77%). Only ten percent of the science faculty reported that they used self-paced instruction in their classes, and just two percent assigned students to study different material according to their progress in the course. Complete self-pacing and assignment of students to different material according to scores on a pretest were not used in any of the science courses.

TABLE 2

INSTRUCTIONAL APPROACHES

USED IN SCIENCE CLASSES

(N=99)

	Percentage
All students study the same material at the same time	77
Self-paced but finish by a specified date	10
Students assigned to study different material according to their progress in the course	2
Complete self pacing	0
Students assigned to different material according to scores on a pretest	0
Other	11

Grading Practices

More than half of the science faculty said that students' grades were determined relative to a fixed performance standard but one-fourth admitted to grading on a curve. Assigning grades on the number of objectives mastered was used in nine percent of the science classes. Many of the remaining instructors noted that if they based their grades on a curve, fixed performance standard, or number of objectives mastered, a high percentage of the students would not pass the course. Therefore, they employed a combination of grading techniques.

What Percentage of the Science Courses are Offered for Students With Academic Deficiencies?

One component of the NSF-sponsored study of science education in the Los Angeles Community College District involved an analysis of class schedules for the 1979-80 academic year to document the number and variety of courses offered in the District in the sciences. All science courses appearing in the class schedules were placed into one of four categories on the basis of their content (e.g., biological sciences, mathematics) and intended audience (general introduction, courses for science majors, courses for students in occupational programs, preparatory or developmental courses). A more complete description of the course classification system is provided in Hill and Mooney, 1978 and Friedlander, 1981.

The results of this analysis showed that 43 percent of the class sections in mathematics were designed for students with weak backgrounds in areas of mathematics typically covered in high school. The only other science area which offered developmental courses was the physical sciences where 13 percent of the class sections were geared for students needing preparation in the physical sciences before entering the introductory courses.

Recommendations for Increasing Student Success in Science Courses

The science instructors were asked to indicate which of 16 activities they felt should be provided at their college. Only the five activities that pertained to student competencies will be considered. Ninety-one percent of the science instructors thought there should be an entrance exam for students wishing to enroll in their courses whereas only about 50 percent felt that their college should provide special mathematics courses (51%), study skills classes (51%), tutors (32%), and resource persons to assist students with personal problems (38%). These findings suggest that a high percentage of the science faculty would rather not work with academically underprepared students.

Discussion

The findings reported in this paper can be summarized as follows: (1) there has been a decline in the academic preparation of students entering community colleges; (2) there was much variation in the educational abilities of students enrolled in science courses; (3) a high percentage of students participating in science courses had difficulty in performing activities involving reading, writing, arithmetic, statistics, identifying biases in research reports, finding information on their own, and understanding scientific developments and their relationship to society--the very skills that provide the basis of science education; (4) few science courses were designed for students with deficiencies in the basic academic skills; (5) for the most part, science faculty did not employ self-paced instruction or other individualized instructional approaches in their classes; (6) attrition rates in science courses were extraordinarily high; and (7) nearly all of the science faculty felt that there should be an exam for students wishing to enroll in their courses.

Perhaps the most significant finding of this study was that many of the science instructors were being asked to teach their courses to groups of students whose reading, writing, computing, and study skills ran the gamut from poor to excellent. As Cohen and Brawer (1981) note, if the students cannot be more able, at least they might be more alike so that instruction could be more precisely focused. Teaching groups of students whose basic skills range from the third to the thirteenth grade is demoralizing; everything is more difficult, from writing examinations to showing group progress.

Although the science faculty were aware that a large percentage of students attending community colleges have some difficulty in performing adequately activities needed for success in their courses, there was a near absence of classes in all areas of science (except mathematics) designed especially for students who needed some assistance with their reading, writing, mathematics, science, and/or study skills. Thus students who were weak in one or more of these ability areas and who wished to take a science course would have no choice but to enroll in one for which they were not adequately prepared. A consequence of this practice was that students in most of the science classes were divided about fifty-fifty between those who were able and those who experienced difficulty or were unable to perform activities that the instructors noted were important for success in their courses.

There are a number of steps that can be taken by science faculty to address the educational needs of academically underprepared students. One option involves defining exactly the competencies required to enter and succeed in each science course. Only students who possess the necessary competencies to succeed in the course would be permitted to enroll; those who did not would be directed to a specially designed science course designed for students who need some assistance with their basic skills.

A second option is to allow all students to enroll in any introductory science course but to limit the number of courses that the poorly prepared students can take in any term and mandate that those students take advantage of the available support services. Under this approach the students might take only one science course at a time and participate in tutorial and learning laboratory sessions on the basis of three hours for each credit hour attempted (Cohen and Brawer, 1982).

A third option is to integrate remediation into college-level science courses. Reports published in the journal literature and the ERIC files show that it is quite possible to teach functional literacy in college-level courses (Barshis, 1979; Chausow, 1979; Holmberg, et al, 1981; Beyer, 1981). Many of these efforts involve presenting basic skills to students as part of their regular courses, as by incorporating reading skills into social science courses (Beyer, 1981), requiring students in a college-level course to complete learning modules on particular skills in a learning center as part of their assigned work (Maxwell, 1980), or by offering skills courses that parallel the work in a given subject and focus on the skills needed throughout the term (Bergman, 1977; Maxwell, 1980; Holmberg, et al., 1981). In such an arrangement the skills instructor would use the actual texts, class lectures, and tests from the science course as the study skills course material.

In a recent report (California Postsecondary Education Commission, CPEC, 1981) it was noted that during the 1980s, the community college student population may come to resemble a bimodal curve, with two large concentrations of students: at one end, those who are educationally and economically disadvantaged and who have a critical need for remedial programs and services; and at the other end, relatively well-educated adults for whom education is a part-time, irregular pursuit, including "reverse

transfers" from the four-year colleges and universities, with a wide range of interest in almost anything the college offers without respect to credit. According to CPEC's projections, the third largest concentration of students will be the traditional 18 to 22 year old full-time students enrolled in programs leading to degrees, certificates, and transfer. Included in this group are the so-called "late bloomers"--students who had done poor work in high school but showed potential for succeeding in college-level work (CPEC, 1981, p. 15).

The most important challenge facing science educators will be to design courses and instructional approaches that are in line with the educational abilities and objectives of students in each of the major groups of students attending community colleges. The achievement of this objective will be determined in part by the ability of institutional researchers to provide diagnostic information on the effectiveness of various strategies of providing science education to all community college students--from the academically underprepared to the academically advanced.

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LITERATURE FOR RESEARCHERS

Guba, Egon G., and Lincoln, Ivonna S., EFFECTIVE EVALUATION: Improving the Usefulness of Evaluation Results Through Responsive and Naturalistic Approaches. San Francisco: Jossey-Bass Publishers, 1981. 423 pp.

Reviewed by:
Alex M. Cuthbert, Virginia Tech, Blacksburg, Virginia.

Few today would question the rationale for conducting evaluations. However, many might question the effectiveness of evaluation findings. Interest in evaluation in the last decade seems to have rested on false hopes, hopes of reversing past failures to achieve expected ends through the intervention strategies of policies, programs and expenditures. Evaluation appeared to offer a feedback mechanism that would systematically provide data for the continuous adjustment and tuning of various inputs into the change process of businesses, agencies and institutions. It was thought that, as a result, strategies for beneficial change would become more understandable and tractable. The hoped for result did not materialize.

Egon Guba and Ivonna Lincoln maintain that the promise of evaluation failed because the traditional evaluation methods, "bogged down" in a scientific paradigm, were incapable of taking into account the concerns and issues of their actual audiences. Consequently, evaluation findings were not used. To the authors, effective evaluation means assessments that generate the kind of information that those who have a stake in the findings want and will practically apply in purposeful action.

With the intention of reforming evaluation procedures, Guba and Lincoln have proposed a new evaluation model.

Their model synthesizes two concepts into an approach that surmounts the limitations imposed on evaluation by a scientific orthodoxy. The first concept is responsiveness that views the actual concerns and issues of stakeholding audiences as the primary organizer of evaluations. The authors provide formal definitions for the terms "concerns" and "issues". This orientation calls for the identification of those who require information and will be affected by its use. It focuses on actual practices and activities more than on manifest intents. Furthermore, it allows for the surfacing of different value perspectives that may be held by individuals and groups within the context of the evaluation.

The second concept introduces an epistomological view that holds that truth is "ultimately inescapable" if one immerses oneself sufficiently in the natural setting of the evaluand. The naturalistic approach assumes that multiple realities represent the phenomena to be evaluated and that complex interrelated patterns must be searched out in order to ascertain the dynamic of any given context. The authors accommodate a divergent approach to reality that focuses on differences, mainly those slices of reality that exist in the minds of people, rather than concentrating on perceived commonalities in a manner akin to laboratory work. True understanding, therefore, is not the product of isolating variables, nor is the usefulness of evaluation findings determined on the basis of separating elements for manipulation and prediction.

A responsive-naturalistic evaluation calls for an emergent design. The design cannot be specified fully at the outset, because it depends on the evaluator to determine information needs, to validate participant interests and to obtain a portrayal of the actualities of a context with the minimum of obtrusiveness. In this regard, the notion of the evaluator as instrument is an important feature of the new model.

The authors devote a considerable portion of their book to the improvement of evaluator skills in such areas as interviewing, observing, interpreting cues and using pertinent documents and records. The job of the evaluator as Guba and Lincoln see it involves both describing and valuing. Valuing is a matter of determining merit and worth which goes beyond the conventional role of the evaluator as the assessor of implementation success. Determining worth (contextual utility) as distinct from merit (intrinsic value) in evaluations may require additional skills and investigative dedication rather than traditional methods, but it offers compensating heuristic rewards. Guba and Lincoln also discuss the critical task of reporting that is made all the more demanding when value judgements as well as descriptions are required.

This book not only offers valuable training to evaluators but also details the stages of conducting an evaluation based on the responsive-naturalistic principles espoused by the authors. Guba and Lincoln explain how to delimit an investigation, establish focus, and ensure that findings are reliable, valid and objective. The authors share their first-hand experiences about such matters as getting established on the site, developing contacts, corroborating information and understanding the political factors that impinge upon the evaluation. They offer valuable advice and explain useful techniques.

This work is an excellent resource guide for those who are concerned or just mildly curious about the underuse of evaluation results. Guba and Lincoln not only present their model but compare it with other evaluation models. They clarify the philosophic assumptions of the major evaluation approaches of the past as well as their own. One of the thirteen diagrams deals with a comparison of evaluation models. The book is particularly well organized for easy reference to specific topics. The format of the book, divided into four major parts with chapter subdivisions

and summaries, recommends it as an instructional text. Both a name and subject index are provided. Terms that are heard frequently in discussions about evaluations are defined, (e.g., rich description, triangulation, iteration.) A special section is included dealing with educational evaluation.

In addition to providing a practical resource, this book provokes further thought about the effective utilization of evaluation results. One is led to question whether or not evaluation results have been under used in the past, because they have been overly dependent on the evaluator's preformulated theories and preordinate design, resulting in technically sophisticated procedures and highly objective conclusions. Will a shift in the ways information is gathered and the kinds of information produced lead to greater utilization? These questions address the distinction between procedure and relevance in providing information. Guba and Lincoln believe that the relevance and substance of information will determine the level and effectiveness of the use to which information is put. Consequently procedures for obtaining information that ensure these qualities should be employed. However, in view of the familiarity and the high degree of credibility which the scientific paradigm enjoys, can we expect that a paradigm shift will result in greater and better use of evaluations? Will those that commission evaluation be persuaded solely on the basis of the relevance of information produced by responsive-naturalistic methods? The future actions of bureaucracies and decision-makers will demonstrate whether procedures or relevance takes precedence in determining the utilization of evaluations.

Hunter, R. and Sheldon, M.S. STATEWIDE LONGITUDINAL STUDY: Part 4 - Spring 1980 Results. Los Angeles: Chancellor's Office, California Community Colleges, 1981.

Reviewed by:
Darrel Clowes, Virginia Tech, Blacksburg, Virginia.

This report is the fourth in a series as part of a longitudinal study of California community college students from Fall 1978 to Spring 1982. This study relies upon college records and extensive telephone interviews for its data; it presents an unusually rich insight into the students, their course taking behaviors, their attitudes, and their plans. This report is of particular interest. The major thrust of the report is a study of the impact of the community college system upon disadvantaged students in California. The data reported is tentative but provocative; the study warrants careful attention in this and the subsequent reports since much conventional wisdom about the disadvantaged in both the college and job setting is challenged.

However, for me the truly exciting part of this report is the concept of student prototypes. This was developed in earlier reports but finds its first real expression in this report. Based upon two years of student interviews, the researchers have found not the four assumed types of students (transfer, occupational, remedial, and continuing education) but eighteen! These eighteen types of students are associated with educational plans, course taking patterns, and curriculum. This is an exciting insight into the community college and a model to consider for both study and replication in other sites. The report is well documented with careful attention to methodology.

Patton, Michael Quinn. Qualitative Evaluation Methods. Beverly Hills, CA: Sage Publications, 1980.

Reviewed by:
Darrel Clowes, Virginia Tech, Blacksburg, Virginia.

An excellent guide to both when and how to use qualitative methods. The sections on evaluation design and on the nature of qualitative data are especially helpful. This book then carries through the implementation stage with sections on collecting and then analyzing qualitative data. A real strength is the light writing style and brilliant use of parables as chapter beginnings.

Solmon, L. C. and Gordon, J. L. The Characteristics and Needs of Adults in Postsecondary Education. Lexington, MA: D. C. Heath, 1981.

Reviewed by:
Darrel Clowes, Virginia Tech, Blacksburg, Virginia.

This book is based on data from over 170,000 first-year students over the age of 21 who responded to the Cooperative Institutional Research Program's freshman survey between 1966 and 1978. The authors draw comparisons with samples of traditional aged students and attempt to distinguish between part-time and full-time adults and those in two- and four-year colleges. The book is organized into topical chapters dealing with the demographics of adult students, their reasons for choosing their colleges, financing, and college and life plans. The book ends with a series of implications and conclusions drawn from the data.

This is a dangerous book for community college people. The authors regularly point out limitations in the CIRP sample, but proceed to draw conclusions

from the data. The sample is seriously skewed toward four-year colleges and their students and toward first-time and full-time students. Therefore, those two-year college students who are included in the sample are unrepresentative of the adult student in the two-year college. This basic but profound sampling distortion makes the findings and interpretations of this book suspect or misleading for community college people looking for insights. Although the authors provide caveats about the sample, conclusions are still drawn and data presented as if the sample were representative of adults in all of higher education--and it is not. Do be careful of this book as a source for information or recommendations.

Sullivan, LeRoy L. Sullivan's Guide to Learning Centers in Higher Education. Portsmouth, NH: Entelek, 1979.

Reviewed by:
Darrel Clowes, Virginia Tech, Blacksburg, Virginia.

This is a report of a survey of Learning Assistance Centers in postsecondary institutions in America and Canada. It's strengths are a good response rate (about 50%) and volumes of data arranged in every conceivable way. This study updates Devirian's 1974 study and provides baseline data. It's weaknesses are a non-definition of Learning Assistance Centers which clouds the findings, an incoherent organization of the material, poor descriptions of the methodology so independent interpretations are impossible, and meager conclusions or interpretation of the data.

MORE INDICATORS AND ENROLLMENT FIGURES
AACJC REPORT

Roger Yarrington

The "Indicators Briefs" in the AACJC Letter continue to present basic data on community colleges. Four such briefs have appeared:

1. National Indicators for Community Colleges
2. 20 Years of Growth
3. Economic and Occupational Indicators
4. Image and Attitudes

The last issue of this Journal carried a column discussing the first Indicators Brief and the round-table on data needs which recommended that such indicators be prepared.

The other three briefs summarize the growth in numbers of institutions and enrollments over 20 years (Brief #2); present some indicators on occupational education and economic impacts (#3); and report on a Gallup survey of public opinions about community colleges (#4). The entire set, plus a printed file folder with information on community colleges for public policy makers and media representatives, may be purchased from the AACJC Publications Office for $2.00 each.

Indicators Brief III

Indicators Brief III has some interesting new figures in it. It reports that community colleges represent a $10 billion industry in this country. For every dollar invested in community colleges, $4 are returned to the local economy.

Also, it shows that 63% of all credit enrollments in community colleges are in ocoupational education.

Community colleges prepare people for employment in 1,400 different occupations, 263 in allied health fields alone.

Most important at this time, perhaps, given the current Congressional debate on reauthorization of the Vocational Education Act, is information on the distribution of vocational education funds: community colleges serve 40% of all vocational education students while receiving 12% of the total Federal vocational education funds.

Other Briefs Prepared

Two additional "Compensation Briefs" have recently appeared in the AACJC Letter. Compensation Brief I is a summary of NCES data on faculty compensation. Compensation Brief II is a summary of data collected by the College and University Personnel Association and by the AACJC Presidents Academy on administrative compensation.

Persons wishing to receive the AACJC Letter may subscribe to it through the AACJC Publications Office for $40.00 (24 issues per year). Data summaries do not appear in every issue. Other briefs are inserted regularly on federal affairs, legal decisions, calendars of events, etc. A copy of the Letter is mailed to the president of each AACJC member institution. If you do not wish to subscribe, you may wish to ask your president to buck the data briefs--or Xerox copies of them--to you when they appear.

1982 AACJC Directory

[illegible] 2 AACJC Directory will show a 1.27% increase in cre[illegible]rollments over Fall 1981 and a 2.8% increase in non-credit enrollments. The number of institutions decreased from 1,231 to 1,219.

Full-time enrollments declined while part-time enrollments increased, continuing the trend that has moved part-

timers from the minority to the majority.

The enrollment figures reported in the "Interpreting the Data" section of the Directory will be:

4.88 million credit enrollment, fall 1981 (headcount)
2.44 million credit additional enrollments in other semesters (estimate)
4.08 million non-credit enrollments
11.40 million persons total enrollments

I appreciate the response of a number of institutional researchers from NCRP that have verified that the above estimate of 50% additional unduplicated headcount credit enrollments in subsequent semesters, over and above opening fall enrollments, is a conservative estimate and very legitimate to use in estimating total annual enrollments.

ERIC CLEARINGHOUSE FOR COMMUNITY JUNIOR COLLEGES PROGRAM EVALUATION

Jim Palmer

Program evaluation is a complex administrative activity designed to provide data that meet accountability and institutional planning requirements. In conducting evaluations, administrators need to determine who will do the evaluating, what evaluation criteria will be applied, the procedures that will be followed, and how the findings will be used in the college's planning efforts. Research materials detailing the methodology and findings of program evaluations actually conducted at other institutions, therefore, are a valuable aid to administrators who are faced with the task of assessing programs at their own colleges.

The abstracts included here are samples of ERIC documents in the Junior College collection dealing with program evaluations at two-year colleges. Additional documents related to this issue can be found through manual or computer searches of ERIC's RIE (Resources in Education) and CIJE (Current Index to Journals in Education). Consult the Thesaurus of ERIC Descriptors for appropriate subject headings.

Guidelines for Occupational Program Assessment. Phoenix, AZ: Maricopa County Community College District, (1980). (ED 206 358; MF--$0.91, PC--$3.65 (plus postage); 49 pp.)

These guidelines attempt to simplify and standardize a process for assessing vocational education programs in the Maricopa Community College District. After an introductory section outlining the purposes and mandates of such assessments, the paper discusses the roles and responsibilities of the District Task Force and of the Occupational Dean and College Task Force. After noting

the resources used in the creation of the assessment instrument, the paper outlines its 12 categories: program planning; program advisory committee; curriculum and instruction; student organization; facilities, equipment, and safety; cooperative education; guidance and counseling, placement and follow-up; staff qualifications and professional development; evaluation; services to special populations; and program support. The next sections describe a data matrix, designed to identify sources of information, and outline the 11 steps recommended by the District Task Force for the implementation of the program evaluation. Finally, the requirements for reports to the district's governing board and to the state department of education are briefly discussed. Appendices provided: (1) the assessment instrument; (2) the data matrix; (3) a proposed evaluation timeline; and (4) a suggested format for the summary report.

Kennedy, William R. Program Evaluation for Strategic Planning in the Two-Year College. Paper presented at the Annual Meeting of the North Central Region of the American Educational Research Association Special Interest Group for Community/Junior College Research, Columbus, OH, July 10-11, 1980. (ED 190 175; MF--$0.91, PC--$2.00 (plus postage); 14 pp.)

As more emphasis is placed upon institutional research that provides information relating to long-term strategic planning, as well as to short-term operational considerations, program evaluation techniques that merely analyze past or current budget and enrollment statistics will become increasingly inadequate. Such techniques are based on data systems designed to produce program review reports required by public agencies and governing boards. As such, they provide figures relating to program input, process, output, and outcome variables that are of little help in the long range planning process. To correct

this situation, institutional researchers should incorporate measures now evident in enrollment projection formulas to provide a prognosis model whereby educational programs are judged in light of institutional missions. This will involve the collection of data relating to topics such as the number of future jobs in a given industry, the plans of local employers to expand or reduce plan activities and/or capacity, and the future economic effects of Federal Research System actions to restrict credit. By incorporating these prognostic data into evaluation procedures, institutional researchers will help decision-makers allocate college resources more adequately to meet changing educational needs.

Kirby, Emily B. Program Evaluation at Hudson Valley Community College, 1980-81. Troy, NY: Hudson Valley Community College, 1981. (ED 208 925; MF--$0.91, PC--$3.65 (plus postage); 35 pp.)

The Program Evaluation Process described in this report was initiated at Hudson Valley Community College (HVCC) in spring 1981. Section I of the report presents the philosophy supporting the evaluation process which emphasizes program quality, cost effectiveness, and assistance with program improvement. Section II outlines the Program Evaluation Process itself, which involves a three-year cycle in which programs are reviewed the first year and re-reviewed two years later. This section also lists the HVCC programs involved in the process and presents a timeline for the completion of the review. The section goes on to describe the functioning of the review team, which may pass a program, give it probationary status, or determine that it should be phased out. Next, this section reviews team membership, which includes permanent members from the finance office, academic affairs, president's office, and student affairs; rotating members who are usually deans or department chairs from divisions

not being reviewed; and program representatives. Section II concludes with a list of types of data needed for review (i.e., program costs, success, and variability, predictions, and supporting material). Section III presents preliminary outcomes of the use of this process in evaluating 16 programs, of which nine were accorded a pass, six were not rated due to insufficient data, and one was placed on probation. Section IV summarizes the steps in the process and assesses effects on HVCC. Appendices include summarized reports and sample forms.

Maryland Community Colleges 1980 Program Evaluations. Annapolis, MD: Maryland State Board for Community Colleges, 1981. (ED 201 355; MF--$0.91, PC--$8.60 (plus postage); 127 pp.)

This report contains qualitative evaluations of 48 programs throughout the Maryland community college system, as well as a statewide evaluation of Teacher Education transfer programs. A summary of the Teacher Education programs is presented first, in which the purpose and role of teacher education in the community college, enrollment trends, student characteristics, and transfer patterns and problems are considered. The report then presents 48 program evaluations completed by individual colleges in response to questions relating to problems of low employment of or low awards for graduates, low enrollment, or high costs. In addition to the Teacher Education programs, the following programs are evaluated: Business Technology; Automotive Technology; Ocean Engineering Technology; International Trade; Piano Technology; Heating, Ventilation, and Refrigeration; Environmental Health Technology; Materials Management; Television Operations and Maintenance; Chemical Technology; Business Management; Horticulture; Recreation Leadership; Agricultural Business; Early Childhood Development; Special Education Instructional Aide; Banking, Engineering Technology; Public Administration

Assistant; Secretarial Science; Environmental and Renewable Resources; Early Childhood Instructional Aide; Insurance; Interior Design; Retailing; Computer Technician; General Engineering; Criminal Justice; Human Services; General Studies; and Retail Management.

Reap, Margaret C.; Covington, Helen C. Evaluation of the Effectiveness of the Development Studies Program. Houston, TX: North Harris County College, (1980). (ED 197 798, $0.91, PC--$2.00 (plus postage); 25 pp.)

A study was conducted at North Harris County College to determine the extent to which its Developmental Studies Program (DSP) was meeting stated goals and to assess the predictive reliability of the screening tests used to place incoming students in DSP courses. The study involved: (1) an assessment of the need for the DSP program as evidenced by the percentage of freshmen students enrolled in DSP courses from 1973-74 through 1979-80; (2) comparison of the sex, course grades, ethnicity, high school attendance, and American College Testing (ACT) scores of developmental and non-developmental English and math students, (3) a comparison of the outcomes of developmental and non-developmental English and math courses in terms of attrition and completion rates, (4) an examination of the mainstreaming effect of the DSP as evidenced by the number of DSP students who went on to successfully complete regular freshman English and math courses; (5) a statistical correlation of grades earned by students in regular English and math courses with their scores on four screening tests (i.e., the California Achievement Tests, ACT, Scholastic Achievement Test, and Nelson Tests); and (6) an assessment of the extent to which the DSP lab was used and satisfied the needs of students. The study report details the methodology and findings of each of these six components.

Sheldon, M. Stephen. Pattern for Vocational Follow Up. Woodland Hills, CA: Los Angeles Pierce College, 1981. (ED 206 367; MF--$0.91, PC--$3.65 (plus postage); 25 pp.)

Although the primary purpose of this report is to present prototypical procedures for conducting two-year college vocational follow-up studies, it also describes the implementation and results of using these procedures in the evaluation of the electronics, computer science, and tool and manufacturing programs at Los Angeles Pierce College. After providing background on the development of the model, the report considers problems in sampling and the reasons for focusing on program completers. Next, data collection procedures are explained, which involved a highly structured telephone interview to determine course number; program option; course grade; age; sex; ethnicity; number of semesters attended; number of courses completed; objectives in taking courses; judgement about the accomplishment of these objectives; degree/certificate completion; field of employment; work schedule; period when graduate found the job; college presently attending; evaluation of equipment, materials, and instruction; evaluation of usefulness of studies in obtaining a better job, promotion, or raise; and probability of taking more classes. After the methods of data analysis are described, the results of the application of these follow-up procedures at Pierce are presented. The paper concludes with recommendations and conclusions regarding the purposes and value of vocational follow-up for institutional and state purposes.

Slark, Julie. Santa Ana College Human Services Program. Evaluation. Santa Ana, CA: Santa Ana College, 1980. (ED 196 476; MF--$0.91, PC--$5.30 (plus postage); 52 pp.)

In order to assess the effectiveness of its Human Services vocational program, Santa Ana College (SAC) conducted a three-part study involving: (1) a survey of the 678 students (including 22 graduates) who had enrolled in a Human Services course from Fall 1976 through Summer 1980; (2) a survey of 178 Human Services agencies in Orange County, California; and (3) a review of Human Services job market data compiled by the state of California. The student questionnaire solicited information on students' educational goals and the extent to which they met their goals, their involvement in Human Services prior to enrollment, their current employment and educational activities, the impact of course work on their careers, and their evaluation of the training they had received at SAC. The agency survey sought to determine present and future demands for paraprofessional employees or volunteers, the number of current employees/volunteers with SAC training, the in-service training needs of agencies, the desirable qualifications for Human Services workers, and their familiarity with and evaluation of SAC's programs. The study report, based on a 45% response rate from the students and a 58% response rate from the agencies, presents graphical and textual analyses of all three study components and discusses the implications of the findings for four program objectives. The survey instruments are appended.

ERIC materials are received from colleges, universities, research institutions, state agencies, and other education-related organizations and groups located throughout the country. The Clearinghouse invites reports dealing with institutional research as well as reports on other aspects of community/junior college education. Please send two copies of each document you would like to have for inclusion in the ERIC collection to our Documents Coordinator.

As an aid to community college researchers, the Clearinghouse performs two information services. First,

our User Services Department conducts online searches of the ERIC data base in response to requests for information; a fee of $20.00 is charged to cover computer costs. Second, the Clearinghouse regularly publishes Information Analysis Products (IAP's) on topics of current interest to community college practitioners. We call your attention to two of our most recent IAP's.

Two-Year Colleges: A Bibliography of the Predominant Literature (1982)

Advisory Committees to the Humanities: A Handbook. Florence Brawer and Alan Gates. (1981)

Single copies are available at no charge from the Clearinghouse for Junior Colleges, 96 Powell Library Building, University of California, Los Angeles, California 90024.

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