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CREATING A CLIMATE FOR INNOVATION, REPORT OF A CONFERENCE FOR COMMUNITY COLLEGE AND PUBLIC SCHOOL ADMINISTRATORS, SUPERVISORS, PERSONNEL, AND TEACHERS (LEE COLLEGE, BAYTOWN, TEXAS, OCTOBER 30-31, 1967).

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GULF SCHOOLS SUPPLEMENTARY EDUCATION CENTER
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THIS REPORT INCLUDES THE FIVE PAPERS PRESENTED AT THE CONFERENCE. (1) B. LAMAR JOHNSON GAVE EXAMPLES OF INNOVATIVE DEVELOPMENTS (GAMING, WORK-STUDY PROGRAMS, ELECTRONIC AIDS, SENSORIA, SYSTEMS ANALYSIS, AND AUDIO-TUTORIAL METHODS) AND OF WAYS TO ENCOURAGE CREATIVITY (STAFF VISITS, PROVISION OF SPECIAL FACILITIES, USE OF GRANTS AND BUDGETED FUNDS, AND APPOINTMENT OF SPECIAL STAFF MEMBERS). HE ALSO STRESSES THE NEED FOR EVALUATION OF ALL PROGRAMS IN TERMS OF THEIR STATED OBJECTIVES. (2) BERLIE FALLON DISCUSSED FACTORS IN ADMINISTRATIVE SUPPORT, SUCH AS BUILDINGS EQUIPPED FOR CHANGE, FREE TIME FOR TEACHERS TO EXPERIMENT, DEFINITION OF SPECIFIC PROFESSIONAL GOALS, INTERCHANGE WITH OTHER SCHOOL SYSTEMS, AND ENLISTMENT OF COMMUNITY APPROVAL. (3) F.G. BOUWASMA POINTED OUT THE HAZARDS OF TOO MUCH RELIANCE ON COMPLEX MACHINES AND OVER-ESTIMATION OF THEIR CAPABILITIES. HE DESCRIBES THE FOUR COMPONENTS--PROFESSOR, CONTENT, STUDENT, AND MEDIUM OF INSTRUCTION--THAT MUST BE SYNTHESIZED INTO THE LEARNING PROCESS. (4) C.W. MANSFIELD DISCUSSED THE CONCEPT OF INDIVIDUAL INSTRUCTION, THE NEED TO MAKE BETTER USE OF PRESENT RESOURCES, AND THE FACT THAT PROGRESS CANNOT BE EQUAL ON ALL FRONTS. (5) BLAIR ROWLAND GAVE THREE EXAMPLES OF STRUCTURES (THE MATZKE AND HOLBROOK SCHOOLS AND THE COLLEGE OF EDUCATION BUILDING AT THE UNIVERSITY OF HOUSTON), WHOSE ARCHITECTURAL INNOVATIONS RESULT FROM MEANINGFUL INNOVATIONS IN THE SCHOOL PROGRAM. (HH)

CREATING A CLIMATE FOR INNOVATION

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CREATING A CLIMATE FOR INNOVATION

Pearland, Texas

1967

CREATING A CLIMATE FOR INNOVATION

The educators of the Gulf Coast area have long been leaders in the field of educational innovation. Recognizing this role and wishing to further promote it, the president of Lee College, Dr. Richard D. Strahan initiated the planning for a conference on "Creating a Climate for Innovation." With encouragement of educators in the region and financial support from the Gulf Schools Supplementary Education Center, a Title III ESEA project, the planning was implemented through this conference.

There were 84 representatives from seventeen colleges and universities and 148 representatives from thirty school districts who were actively involved during the program on October 30 and 31, 1967.

A complete list of activities is enclosed in the program. As a service to educators interested in or concerned with recent thoughts on innovation, the papers presented by the Consultants are included in this publication:

"Keep Excited, Gladys"	B. Lamar Johnson
Administrative Support of Innovation in Public Schools	Berlie Fallon
Educational Innovation	Franklin G. Bouwsma
Toward the School of Tomorrow	Charles W. Mansfield
Innovation in Space	Blair Rowland

Through cooperative activities such as represented in this Seminar, education in this region of Texas will continue to establish models for "Creating a Climate for Innovation."

CONFERENCE PERSONALITIES

Guests

Franklin G. Bouwsma	Miami-Dade Junior College
	Learning Resource Center Director
Berlie Fallon	Texas Tech
	Professor of Education
B. Lamar Johnson	U.C.L.A.
	Professor of Higher Education
Charles W. Mansfield	Inter-American Education Center
	Director, School of Tomorrow

Lee College Personnel

Richard D. Strahan	President
C. J. Collum	Technical-Vocational Dean
Howard Duhon	Technical-Vocational Asst. Dean
Bessie Durham	Registrar
James P. McWilliams	Academic Dean
Allen Bailey	Data Processing Center Director

GULF SCHOOLS SUPPLEMENTARY EDUCATION CENTER

The Center was established under Title III, Elementary and Secondary Education Act, to encourage exemplary and innovative practices in education.

Ralph O. Teter	Director
Thomas Pate	Assistant Director

Creating a Climate for Innovation

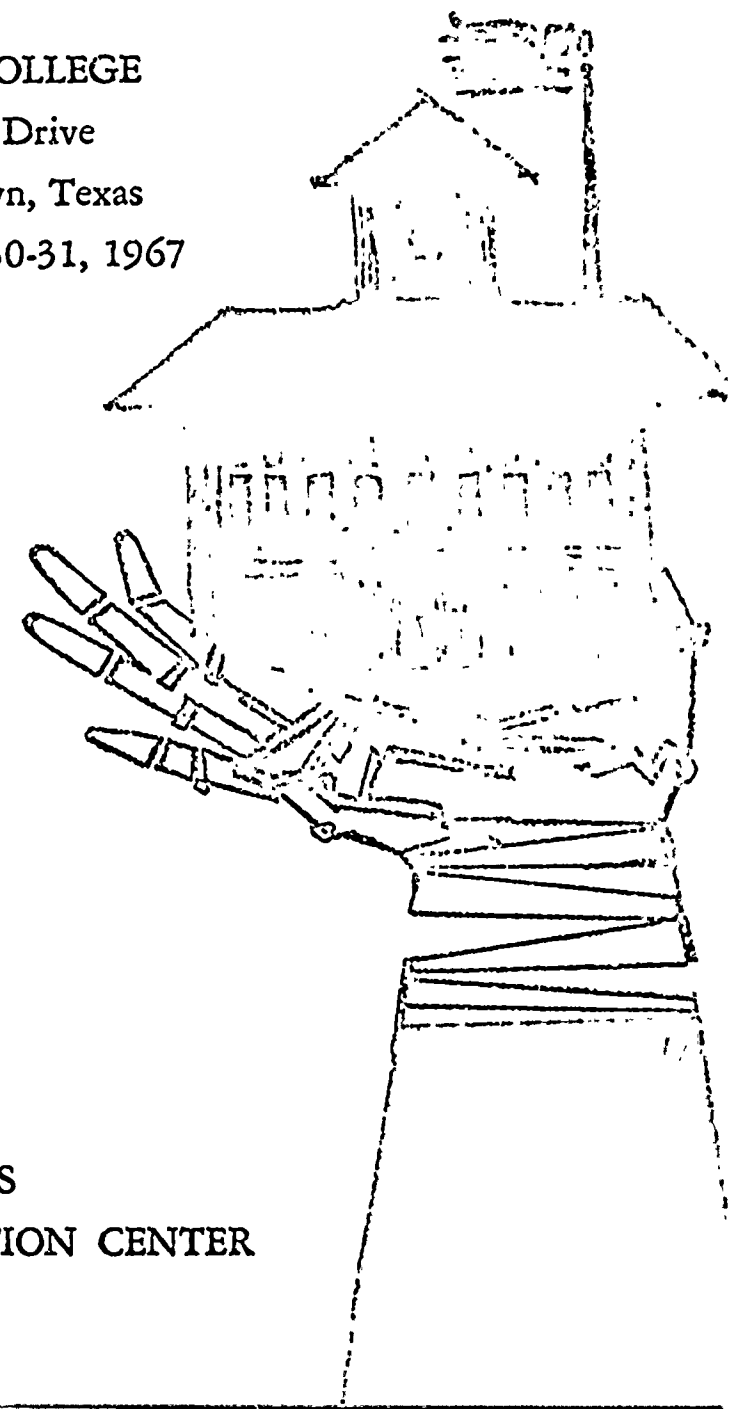
. . . a conference for community college and public school administrators, supervisors, personnel, and teachers, with a view toward creating conditions for planned change in programs for education . . .

LEE COLLEGE

Lee Drive

Baytown, Texas

October 30-31, 1967



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Monday, October 30, 1967

PRE-CONFERENCE ACTIVITIES

Lee College

Technical-Vocational Building

1:30 p.m. — Tour of New Technical-Vocational Facilities
C. J. Collum, Host

2:00 p.m. — Data Processing Application to Student Records-Registration
Mrs. Bessie Durham — Allen Bailey

3:00 p.m. — Public School and Community College Cooperation in Technical Education
C. J. Collum — Howard Duhon

4:00 p.m. — Adjournment

OPENING SESSION

Holiday Inn Dining Room

6:30 p.m. — Registration

7:30 p.m. — Dinner

"Keep Excited, Gladys"
B. Lamar Johnson
Speaker

Tuesday, October 31, 1967

MORNING SESSION

Lee College, Rundell Hall

8:45 a.m. — Registration and Coffee

9:15 a.m. — Welcome
Richard Strahan
Auditorium

9:30 a.m. — Administrative Support of Innovation

Community College Section — Student Union
B. Lamar Johnson

Public School Section — Room 143
Berlie Fallon

11:00 a.m. — Innovation in Learning Activities

Community College Section — Student Union
"Learning Resource Center"
Franklin G. Bouwsma

Public School Section — Room 143
"Individualized Learning"
Charles W. Mansfield

12:30 p.m. — Luncheon — Lee College Cafeteria

AFTERNOON SESSION

Lee College Library

2:00 p.m. — Innovation In Space
Houston Architects from
Caudill, Rowlett and Scott
Wilson, Morris, Crain and Anderson

4:00 p.m. — Adjournment

"KEEP EXCITED, GLADYS!"

by

B. Lamar Johnson*

On Thursday, May 25th, I visited the Meramec campus of the Junior College District of St. Louis. As I left the learning laboratory where I had seen students use varied tape and disc recording devices, listening facilities, and programed instructional materials, Dean Walter Hunter, who was accompanying me, turned to Mrs. Gladys Maracek, director of the laboratory, and with high pleasure, exclaimed, "Keep excited, Gladys!"

During the intervening weeks I have concluded that the dean's "good-bye" epitomizes many -- though as I shall make clear later, not all -- of my observations during my recent 20,000 miles of traveling -- visiting junior colleges in 21 states.

In my travels I was seeking to identify innovations and experiments in junior college instruction. These I have further sought through correspondence with two-year colleges which I did not visit.

The survey on which I am now engaged repeats on a larger scale a somewhat similar study which I made four years ago and reported in a monograph under the title Island of Innovation.[1] I am, therefore, able to make some comparative comments regarding instructional developments "then and now."

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*University of California, Los Angeles

[1]B. Lamar Johnson, Island of Innovation. Occasional Report Number 6 from UCLA Junior College Leadership Program. Los Angeles: School of Education, University of California, Los Angeles, 1964.

I would like to suggest to you today that the injunction, "Keep Excited Gladys!" might well become a rallying cry for lively, vital, and purposeful teaching in our junior colleges. With this in mind, I propose in this presentation to make two points:

1. Keep Excited!

2. Excitement is Not Enough.

Before reporting a group of practices in junior college instruction, I should like to refer to a development which upon occasion I find and which is of fundamental importance.

A story is told of Henry, a guide in the Ozarks who could read numbers but couldn't read words. One day as he was showing a party the rustic beauties of southern Missouri and northern Arkansas, a member of the group turned to the guide and asked, "Henry, isn't it difficult to be able to read numbers but not to read words?"

Came the reply, "Naw, it's not so bad -- except when I come to a cross road. Then I can tell how fur but not where to."

Much of American education is like Henry. We know the number of weeks in a semester, the number of units required for a degree, and the number of lecture and laboratory hours in a three-unit course. We frequently know "how fur but not where to." This is too often true of junior colleges, of departments within colleges, of individual courses, and of individual class periods. This is too often true of presidents and deans, of instructors and of students.

I am pleased, however, to be able to report that in a number of junior colleges, there is an increasing recognition of the importance of

defining specific instructional objectives as a basis for both curriculum development and the improvement of instruction.

Whereas goals are generalized statements (such as, "Students will be able to communicate effectively") objectives, if they are to affect instruction, must be stated more specifically. "An objective," Cohen asserts, ". . . is a specific, observable student action or product of student action. To satisfy our definition, it must first, specify something the student is to do; second, state the circumstances under which he will do it; and third, note the degree of accuracy with which he will perform the action."[2]

At the north campus of Miami-Dade Junior College, division chairmen are making a campus-wide analysis of specific objectives for all courses taught on campus, as a basis for a continuing examination of the curriculum and the improvement of instruction.

At Western Piedmont Community College, North Carolina, an objective-oriented student document and a similarly oriented faculty document are being developed for every course. Varied innovative plans for teaching -- consistent with course objectives -- are used at Western Piedmont, with still others projected for the future.

The educational program of Santa Fe Junior College, Florida, is being projected on a rationale which stresses the definition of college purposes in terms of student behavior. This has required definitions of

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[2]Arthur M. Cohen: "Defining Instructional Objectives:" B. Lamar Johnson Editor, Systems Approach to Curriculum and Instruction in the Open Door College Occasional Report Number 9 from UCLA Junior College Leadership Program, Los Angeles: School of Education, University of California, Los Angeles, 1967, p. 27.

desired student behavior and an examination of the characteristics of students at Santa Fe. This concept is stressed not only in courses, but also in extra-class activities. No such activity is approved until its objectives are stated in behavioral terms consistent with the purposes of the college. Each activity is evaluated and decisions are made regarding its continuation or modification on the basis of its progress toward the achievement of its objectives.

The colleges to which I have referred, are representative of institutions which are focusing on teaching objectives as a basis for curriculum development and instructional improvement. The rationale for these endeavors is simply this: If we want to get there, we must know where we are going.

I. KEEP EXCITED

With this background in mind, I would now like to discuss facets of the exhortation: "Keep Excited!"

In doing this I shall first report examples of innovative developments that are arousing interest and excitement on junior college campuses. I shall then identify a number of plans which are reported to encourage creativity and innovation.

A. EXAMPLES OF INNOVATIVE DEVELOPMENTS

I am classifying the plans which I shall report under six headings:

1. WORK STUDY EDUCATION

I am increasingly impressed with the need for -- and the opportunities in -- work-study education. For economic reasons, hundreds of thousands of youths must earn while they learn -- if they are to continue their education

beyond high school. For these young people and for thousands of others not under heavy economic pressure, work-experience which is correlated with education can aid in making college learning experiences meaningful.

As the president of Rock Valley College, Illinois, told me about the cooperative education plan at his college, he asserted, "We have a one billion dollar educational laboratory here in our community." I was, I assure you, a doubting Thomas, but I soon "saw the light."

At the time of my visit to Rock Valley, 32 companies had signed up for the Career Advancement Program (commonly referred to as CAP) in which high school graduates are offered opportunities to prepare for employment in a variety of technological fields through a work-study plan under which a student attends college half a day and is employed by one of the participating Rockford industries for half a day.

Sinclair College, Ohio, reports a cooperative program under which students in business and technology are alternately employed and attend college during periods of eight weeks each.

The Borough of Manhattan Community College -- located in the heart of the business community of New York City -- has an extensive cooperative education program in which students serve as employed interns in such fields as accounting, advertising, data processing, marketing, secretarial studies, real estate, and transportation and shipping.

Under a two-year grant from the Ford Foundation, the College of San Mateo, California, is launching a cooperative educational program in which students will work full time for one semester and attend college full time the second semester. Under this plan the college will be responsible for "filling" a position with a participating employer for each pair of participating students.

2. GAMES IN TEACHING

In high schools throughout the nation, games are being used as an aid to simulating reality -- particularly in the social studies. Graduate schools of business - including Harvard and UCLA -- use games in teaching administration and management. Northwestern University uses them in graduate programs in political science.

Up to the present, this technique has but lightly touched the junior colleges of our nation. Games are, however, used in the teaching of courses in business at Kellogg Community College, Michigan; at Monroe Community College, New York; and Orange Coast College, California.

Orange Coast has also established a Management Games Center which has a library of games in such fields as accounting, business policy, finance, investment, management, and marketing.

San Diego City College uses games in teaching a course in political science.

Since no games have, up to the present, been specifically designed for junior college use, two-year colleges typically revise and modify games to suit their particular requirements.

3. ELECTRONIC INNOVATIONS IN TEACHING

Four years ago I reported plans under which telephones with attached amplification units are set up in classrooms. Using these facilities, classes can hear live lectures by, or engage in dialogue with -- authors, business executives, government officials, labor leaders and leaders of thought in all manner of fields.

This is not expensive. Some months ago, we at UCLA invited an official of the W. K. Kellogg Foundation to address the presidents and deans of

instruction of Southern California junior colleges. Since he could not make the trip to California, we arranged for him to speak by telephone -- a 25-minute address followed by a 25-minute discussion period. The total cost for installing the equipment and for long-distance charges for the fifty-minute period was $25.00.

During my recent travels I have been somewhat surprised to find relatively few examples of teaching by telephone. I did, however, find several. Monterey Peninsula College, California, chemistry classes heard a lecture by and engaged in discussion with the author of their textbook -- a professor in a university in another state.

Kellogg Community College, Michigan, uses the telephone in several teaching fields. An unexpected dividend resulted when, while an instructor was recuperating from surgery, he used tele-lecture equipment to conduct classes in data processing from his hospital room. I hasten to add, however, that I don't wish to be accused of advocating that faculty members keep hard at work -- even while lying on beds of pain! I am only trying to convey my impression that the telephone represents a valuable -- but as yet largely untapped -- resource which can be used imaginatively in teaching.

Another tool from the world of electronic technology is closed circuit television which is used at Arizona Western College. In automotive technology, for example, students view on television a magnified projection of the inner workings of or the process of repairing an engine -- much as medical students observe a surgeon performing an operation. Funds for the purchase of television equipment at Arizona Western were secured from the division of vocational education of the state department of education. The use of the equipment is not, however, limited to vocational offerings. It is also used in varied academic classes.

I mention this source of support because funds are often readily available for projects in vocational education -- whereas programs in other fields may have difficulty in securing off-campus support. Apparently facilities purchased with vocational education funds can be used for instruction in other fields. This situation may well provide notable opportunity for vocational education faculties to take college-wide leadership in instructional innovation.

Bronx Community College has, for several years, used closed circuit television in supervising the hospital work of student nurses. Fixed television cameras in eight hospital rooms are connected with two monitors at which the supervising instructor is seated. One monitor changes automatically every twelve seconds so that every student is seen frequently; and one is manually operated so that the instructor can change or hold the viewing image as long as may be desired. Each student nurse has a transistor hearing aid, with an earphone, by means of which she can receive comments or instructions from the supervisor. The student can also talk to the instructor by means of a microphone in the wall of each room.

Studies reveal that instructors who are supervising student nurses typically spend from two-thirds to three-fourths of their time in going from room to room. This means that only from one-fourth to one-third of their time is available for actual work with the students. Through the use of closed circuit television, the supervising instructor becomes, in fact, a full time teaching supervisor.

Somewhat similar in purpose and design to the plan for supervising student nurses with the assistance of closed circuit television, is the plan for using electronic pianos at Chabot College, California. Here a

music classroom is equipped with sixteen electronic pianos, each of which is wired to an instructor's console. Each student plays his own piano at will with no one but him and his instructor able to hear-- both by the way of earphones. By using these facilities, classes in piano can be taught and each student can be taught as an individual.

St. Petersburg Junior College, Florida, is representative of junior colleges which make extensive use of video tape recorders -- which are becoming both increasingly efficient and less costly.

All students in speech classes at St. Petersburg have at least one speech recorded on video tape and played back so that they, their instructor, and their classmates can see and hear themselves in action -- and engage in meaningful self-evaluation. One instructor follows a plan of recording a speech for each of his students at the opening of the term and another late in the course. At the conclusion of the course the teacher and each student, together, hear and see the student's first and final speeches -- and observe the development that has taken place during the term. In a sense this plan is similar to that sometimes used in English composition classes when students compare themes written at the opening of a course with those written at its close.

At St. Petersburg, the video tape recorder also makes it possible for students to see and hear themselves in theater arts, debate, oratory -- and occasionally in nursing.

4. SENSORIUM

At Laney College, California, sensorium will, this year, be opened on an experimental basis. The average classroom, folk at Laney point out, is basically a replica of that of 300 years ago: four walls and a ceiling,

semi-comfortable seating, poor lighting, a blackboard, and a teacher's desk. Upon occasion there mey be improved lighting and seating and provision for the use of motion pictures, slides, recordings, and perhaps closed circuit television.

Nevertheless, even under most favorable conditions, the teacher's control of his classroom environment is severely limited. At Laney this is to be changed in the sensorium, a term which implies access to and utilization of the total sensory apparatus of the student.

The sensorium is conceived to be an architectural space with an almost completely controlled environment:

a. Traveling and stereophonic sound.

b. Three-dimensional projection -- that is, simultaneous projection at fron, sides, and rear.

c. Atmospheric control with the capacity to change temperatures from forty to eighty degrees in a matter of minutes; and with the capacity to whip up winds -- or even gales -- at will.

d. Aromatic controls -- with a wide selection of aromas and odors propelled through the air conditioning system on programmed call.

e. Touch control -- attached to specially designed seats, wheels which are outfitted with a continuum of textures: from smooth to rough, from glass through fur to hardened emery surfaces.

f. Taste control -- specially designed pills with varying flavors and with some composed of several layers which constitute a continuum of taste from sweet to sour.

g. Motion control -- with seats mounted on a movable floor which can be tilted or shaken or shimmied at will.

I should make it clear that not all of these controls will be available in the experimental sensorium which is to be used during 1967-68. All of these controls -- and others yet to be devised -- are, however, projected for future development at Laney.

Initially, the sensorium will be used in teaching English composition and art appreciation. From one-fourth to one-third of the sessions of participating classes will be held in the sensorium. It will also be available for experimental use by teachers in other fields.

Plans for using the sensorium suggest that a typical class hour may have three parts: (a) a period of preparation before the presentation of substantive material, designed to enhance concentration, attention, and an "associative set"; (b) the presentation of subject matter with the assistance of effective environmental aids; and (c) the reinforcement of learning -- again with the physical involvement of students in their environments.

5. AUDIO-TUTORIAL TEACHING

The most discussed recent development in junior college instruction is one which was not even mentioned in the report of my survey of four years ago. Pioneered by Samuel Postlethwait, Professor of Botany at Purdue University, audio-tutorial instruction was first used in a junior college in the Junior College District of St. Louis -- in a course in botany beginning in 1963-64 and in one in biology beginning in 1964-65. Audio-tutorial instruction has, however, had its largest development at Oakland Community College which in the fall of 1965 opened with all courses taught by the audio-tutorial method.

Over simply defined, audio-tutorial teaching is a modified method of programed instruction. Typically the audio-tutorial plan includes general assembly sessions (GAS) of all students in a course; small assembly sessions (SAS) of groups of students; and independent study sessions (ISS) in which students work individually in special learning laboratories.

Laboratories are usually equipped with individual carrels and have instructional materials appropriate to the course being studied: microscopes, slides, live specimens, tape players, slide projectors, motion pictures, film projectors (at times with cartridge films), books, art prints, and the like.

In all sections of the nation I find junior college faculty members expressing an interest -- often tempered with skepticism -- in audio-tutorial teaching. Samuel Postlethwait and representatives of Oakland community college are in wide demand as consultants and speakers to junior college faculty groups.

We are all indebted to the proponents of audio-tutorial instruction for adding an important "Keep Excited!" dimension to many junior colleges and to even more discussions of instruction in the two-year college. Regardless of what further evaluations may reveal -- and it is my judgment that findings will vary from course to course and perhaps from college to college -- the audio-tutorial plan is making a notable contribution to the discussion, study, and improvement of instruction in the junior college.

6. SYSTEMS APPROACH TO INSTRUCTION

In business, industry, and government a systems approach to operations is increasingly advocated and used. Similarly systems approaches are being used in education and in junior colleges.

Colorado Mountain College, where classes opened for the first time this month, is committed to a systems approach to instruction. As conceived at Colorado Mountain, this involves four steps:

a. Defining immediate, interim, and terminal objectives.

b. Providing appropriate learning experiences designed to achieve these objectives.

c. Evaluating achievements on the basis of objectives.

d. Systematically providing for feedback as a basis for improving the curriculum and instruction.

Plans for the college have been influenced by the program of Oakland Community College and by the work of Samuel Postlethwait at Purdue. Several staff members -- including the president and dean of instruction -- served at the Michigan College and a former assistant to Professor Postlethwait has been appointed at the faculty of the College. Accordingly, it is not surprising that as classes open, the audio-tutorial plan will be the dominant method of teaching. The commitment of the college is not, however, to audio-tutorial teaching. Rather its commitment is to a systems approach to instruction in which feedback and evaluation on the basis of specific objectives will be used in developing essentially eclectic plans for teaching -- selecting the procedures that are found to be most effective in particular courses, in particular class sections, and with particular students.

With the assistance of a grant from the Esso Foundation, Meramec Community College of the Junior College District of St. Louis has recently launched a two-year program designed to develop a systems approach to instruction in English, mathematics, and science. This project involves a series of seminars for participating faculty members, planning, and offering instruction based on specific objectives, and an evaluation of outcomes.

Under six headings I have reported varied plans for teaching. Time permits only the mention of several others: seminars and honors programs; independent study; pre-college summer sessions -- vestibule programs, if you will -- for low achieving students; the use of students as tutors, providing learning experiences for both tutors and tutees; a block plan under which four or five instructors teach a common group of students -- particularly in programs for low achieving students; and a world affairs center which features, among other facilities, Associated Press teletype service for use in varied fields of the curriculum.

Some of the plans to which I have referred involve educational hardware; all of them involve educational software, personalization in teaching, and some elements of excitement in the educational process.

B. PLANS FOR ENCOURAGING CREATIVITY AND INNOVATION

In my travels I have observed a number of plans, situations, and environments which apprently encourage creativity and innovation. Some of these are subtle in nature -- difficult to define, impossible to describe. Others are more obvious. A discussion of all of these might well be the topic for this entire presentation. Since this is not possible, I shall limit myself to listing and briefly discussing six plans for stimulating and encouraging innovative developments in the junior college.

1. THE RIGHT TO FAIL

The administration at Roger Williams College, Rhode Island, points out that if a college is to encourage innovation and experimentation faculty members must have a sense of security which will permit them to be venturesome -- interested and willing to try out new ideas without a fear that failures will threaten the status of the innovators. When new ideas

are tried, some will inevitably be unsuccessful. If faculty members are blamed for the failure of apparently well conceived new plans, they are unlikely to wish to try out other innovations. The right to fail is one which in the innovating college must be guaranteed as completely as academic freedom in all of higher education.

2. STAFF VISITS TO CENTERS OF INNOVATION

Several colleges have found that staff visits to centers of innovation have been valuable in stimulating innovation and experimentation.

Perhaps the most ambitious junior college undertaking of this type was the Delta College Innovations Project. During the entire 15-week summer semester in 1966, fourteen faculty members at Delta were employed to devote full time to seeking out innovative practices which, with possible modifications, might be useful to their college. Representatives of the Project Team visited 64 innovative centers -- most of them junior colleges, but also a few senior institutions and research agencies -- in nine states.

As a result of the Project varied new plans and procedures have been adopted in, for example, teaching, counseling, and community services. Some of these are notable and will have far-reaching consequences. The most important outcome of the Project was, however, in the words of one member of the project team the emergence "of an atmosphere for change, an atmosphere which depends not on a desire to change for the sake of change, not on a glowing account that one has read but has not had the opportunity to observe or discuss with the people involved; but an atmosphere which has been created because a large segment of the faculty has an awareness of what is happening around the nation and a desire to be part of a dynamic movement."

With the assistance of a grant from the Ford Foundation, a somewhat less ambitious travel plan was undertaken at Monterey Peninsula College, where eight faculty members and four teachers from neighboring high schools -- divided into two teams -- in the spring of 1966 visited thirteen innovative centers, in Florida, Michigan, Ohio, and New York.

The Monterey Peninsula traveler. reported as valuable the opportunity to:

> Be exposed to some of the sparks of creativity in some other schools -- and to sift out for ourselves that which is largely the glowing greatness of publicity puffs and that which is real, practical, effective.
>
> . . . Be inspired to fuller achievements in our own classrooms, knowing through personal observation that all is not green on those other campuses, nor is all that we are doing archaic. Rather there are innovations in organization, in techniques, and in content that are worthy -- at the very least -- of consideration for possible adoption at our college.[3]

The value of projects which involve visits to innovative centers is supported by the findings of research at System Development Corporation which, under a contract with the United States Office of Education, made a study "of the effectiveness of traveling seminars."[4] The major finding was that the traveling seminar "is a highly effective dissemination method

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[3]Leon Fletcher. "Take to the Road, Teacher." Junior College Journal. Volume 37, No. 2: 19-21. October, 1966, p. 21

[4]Malcolm Richard. Final Report: Traveling Seminar and Conference for the Implementation of Educational Innovations. Santa Monica: Systems Development Corporation, 1965, p. 1.

for stimulating and for facilitating educational innovation;" and the major recommendation was that the "traveling seminar technique should be expanded and actively supported as an effective dissemination activity by the U.S.O.E., state departments of education, and local school districts.

3. PROVISIONS OF SPECIAL FACILITIES FOR TEACHING

Several colleges provide special facilities for teaching and encourage faculty members to make creative and imaginative use of them. At Kendall College, Illinois, forty cartridge tape recorders have recently been purchased and made available to faculty members -- for whatever use may appear to be valuable. As a consequence, a variety of imaginative plans have been developed. Some instructors, for example, record on tape their criticisms of student themes -- thus providing an extensive and personalized critique for students. In some classes students use tape recorders to record interviews, speeches, music, or sounds of the city, as they go into the community to work on investigative papers. So varied are the uses of the tape recorder at Kendall that the faculty is planning to publish a monograph on the use of the tape recorder in teaching.

Foothill College, California, in cooperation with IBM is engaged in an ambitious project designed to explore the use of the computer in teaching varied subjects. Representatives of IBM are assigned to the Foothill campus where they work with faculty members in creative planning.

Some junior colleges feature the "saturation of their campuses" with audio-visual aids to learning as an aid to stimulating faculty members to creativity in teaching. At such colleges many varieties of technological aids to teaching -- including the local production of teaching materials -- are made generously and conveniently available to faculty members.

What I have in mind is suggested by this note that I took on my visit to Florissant Valley Community College -- in the Junior College District of St. Louis: "The eminently convenient and generous provision of aids to teaching (including electronic facilities as well as printed matter) is notably important in instructional innovation and experimentation at Florissant."

Monterey Peninsula College is in the process of constructing a forum -- which is essentially a push-button lecture hall with the latest in electronic, audio-visual facilities -- though I must point out that it does not include the multi-sensory package which is projected for the sensorium at Laney College. As an aid to achieving wide and efficient use of the Forum the college, with the assistance of a grant from the United States Office of Education, is setting up a program to teach faculty members how to use and also how to prepare multi-media instructional materials. Under the leadership of five professional staff members and eight technicians from San Jose State College, a six-week workshop will be held in the summer of 1968 -- with one-week preparatory period planned for the preceding spring. Faculty members will be paid training stipends for their summer work as they prepare for "teaching in the Forum."

4. FOUNDATION AND GOVERNMENT GRANTS

I have referred to several developments which have taken place with the assistance of grants from foundations and from the United States Office of Education. The financial assistance of "outside funds" can, of course, be important in making new developments possible. The value of grants are often, however, far in excess of their monetary value -- for the prestige and stimulation of a grant may aid in developing an attitude of creativity on the part of faculty members.

In addition to the value of receiving grants, values may accrue from the preparation of applications for funds. The preparation of proposals is often regarded as an over-complicated, time-consuming, and onerous task. And this may in fact be the case. On the other hand, the preparation of an application for a grant often stimulates ingenuity and creativity in thinking and planning. Upon occasion proposals for which outside funds are sought but not received lead to new developments which colleges carry out -- perhaps with some modification -- with support from their own budgets.

Foundation and government grants -- the preparation of proposals as well as the grants themselves -- can indeed be important "stimulators of innovation."

5. BUDGETING FOR INNOVATION

One of the major problems in launching innovations relates to the provision of faculty time for working on plans. On some occasions the interests and enthusiasms of staff members are reflected in their "extra-time work" on new ideas and plans for teaching. At other times the introduction of innovations does not actually require additional staff time. Some new plans may actually be time-saving for staff members.

On the other hand, many new ideas do require for their development, time beyond that which is available to faculty members. It is with this in mind that some junior colleges provide released time during the college year or employ faculty members during summers to work on new plans and programs.

This method is used in the Junior College District of St. Louis where four percent of district professional salary funds are "budgeted for

innovation." These funds are largely used for employing faculty members to work on new plans and developments during summer months. Faculty members are encouraged to apply for summer employment grants. Applications describe the purposes and the nature of the project on which work is to be done, methods of procedure, and plans for evaluation.

At the close of the summer each faculty member prepares a report on what he has done and on plans for putting his proposal "into action" -- as well as for its evaluation. Bound volumes of these reports provide an illuminating history of innovative developments in the Junior College District of St. Louis.

6. VICE-PRESIDENT IN CHARGE OF HERESY

For several years I have been suggesting that junior colleges appoint vice-presidents in charge of heresy. This proposal would provide a staff member -- with no administrative responsibility -- whose duty it would be to keep abreast of national developments and to initiate plans for exploiting them at his own institution, as well as to develop completely new plans for local use and application. Our vice-president would be a "dreamer." He would attend conferences and assemble "far out" proposals. He would needle administrators and his faculty colleagues and, in turn, be needled by them. He would study the findings of research and analyze their implications for his college. He would, in short, be an instigator of change.

Kendall College has recently created a position which largely meets my specifications. Although the position is officially designated Director of Educational Development, on campus it is referred to as "Vice-President in charge of heresy," or occasionally by students as the "innovative dervish." The position is non-administrative in nature. The holder

teaches a class and regards himself as a faculty member -- and is so regarded by his staff colleagues. His responsibilities and activities closely parallel those which I have outlined for a vice-president in charge of heresy.

The Director of Planning and Development at Roger Williams College has been referred to -- both on campus and in the public press -- as a Vice-President in Charge of Heresy.

Dallas County Junior College District has recently established a district-wide position, Specialist in Educational Planning. The responsibilities of this position are strikingly similar to those which I envisage for a vice-president in charge of heresy.

Who knows? If current trends continue perhaps we will soon realize a dream of mine and have a National Association of Vice-Presidents in Charge of Heresy in Innovating Junior Colleges.

II. EXCITEMENT IS NOT ENOUGH

In this presentation I have suggested -- in fact, urged -- Keep excited! I have reported a number of innovative developments in junior college teaching which have aroused interest and upon occasion, excitement. If you are under the impression that I have been pleased with and, to a degree excited about, the plans which I have reported, your impressions are well founded.

Someone has observed that our really fine colleges "are those which are in a constant state of uneasy equilibrium" -- excitement, if you will. We are today in a period of history in which traditional plans and methods are inadequate and inefficient for meeting the sharply increasing demands for higher education. New -- and many would hold drastically new --

methods are crucially required. No wonder that innovation is today an "in" word in American education.

But innovation is not enough. Change for the sake of change is not necessarily good. In referring to the opportunity for innovation in the junior college, Gleazer asserts:

> "Let no concept be utilized and no procedure adopted which has not been examined candidly and a bit skeptically. Innovation in and of itself possesses no great merit, but innovation which results from an inquiring mind, well-conceived hypotheses, and honest evaluation gives assurance of a sensitive and lively environment for learning."[5]

In his recent annual report Henry Chauncey, President of Educational Testing Service, warns of the dangers of chaos if innovations are generated faster than they can be evaluated. "With so many active partners in educational innovation," he points out, "the result may be chaos unless careful, coordinated planning and evaluation accompany the current enthusiasm for change and experimentation."[6]

Edmund Gleazer and Henry Chauncey clearly agree with me when I assert, "Excitement is not enough!" Similarly, innovation is not enough.

No industry can survive without knowing what it produces. Too often, however, our schools and colleges are vague and indefinite about their outputs.

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[5]Edmund J. Gleazer, Jr. "Establishment: A trend and an Opportunity for the American Junior College." Establishing Junior Colleges . . . Occasional Report Number 5 from the UCLA Junior College Leadership Program, Los Angeles: School of Education, University of California, Los Angeles, 1964, p. 14.

[6]Educational Testing Service. Annual Report, 1965-66. Princeton, New Jersey: Educational Testing Service, 1967, p. 12.

I have expressed enthusiasm about many of the new developments which I am finding in our junior colleges. I must, however, express disappointment at my failure to find evidence regarding what has happened to student learning as a consequence of various changes and innovations. Evaluation is largely a blind spot in American education -- and certainly among the junior colleges of our nation.

What then is needed in addition to excitement -- and in addition to innovation? The answer comes with clarion clarity: Sound, vigorous, and rigorous evaluation!

Let us accept no change; let us adopt no innovation without building into our acceptances and adoptions plans for evaluating outcomes. The requirement of a plan for evaluation as a part of applications for summer projects in the Junior College District of St. Louis is a step in the direction which I am urging.

The adoption of a systems approach to instruction -- with continuing evaluation based on objectives -- is clearly consistent with the urgent recommendation which I am making for evaluation -- sound, vigorous, and rigorous.

Developments such as these -- evaluation as a part of summer project proposals and systems approaches to instruction -- indicate that a beachhead of evaluation has been established in the junior college. It must be expanded!

III. CONCLUSION

Four years ago I entitled the report of my survey of innovative developments in junior college instruction -- to which I have referred earlier in this presentation -- "Islands of Innovation."[7] The title

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[7]Johnson, op. cit.

epitomized a disappointment which I felt in finding only occasional new developments -- a few college-wide programs and a few endeavors by individual departments or individual teachers.

"The general picture revealed in the survey," I reported at that time, "is one of significantly less experimentation than would be expected, or certainly hoped for, in an institution which is often referred to as 'the most dynamic unit of American education.'"[8]

Today I am somewhat more encouraged by what I am finding. Certainly there is now more interest in innovation and experimentation than there was four years ago.

I have not yet selected the title for the report on my present survey. I am confident, however, that it will not be "Islands of Innovation." Nor will it be "A Continent of Innovation." I firmly believe, however, that as experimentation and innovation -- and rigorous evaluation -- are extended, "islands" may fuse into a "Continent of Innovation" in the junior colleges of our nation. When that happens the junior college can emerge as the truly most vibrant, vital, and valuable unit of education known to the world.

As I close, I express two final and urgent injunctions:

1. Even if your name isn't Gladys, "Keep excited!"

2. Remember, excitement is not enough. Evaluation is also essential.

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[8]Johnson, op. cit., p. 13.

ADMINISTRATIVE SUPPORT OF INNOVATION IN THE PUBLIC SCHOOLS

by

Berlie Fallon*

The furor whipped up by the Russian Sputnik in 1957 served as a takeoff point for change in our educational system. Prior to this time, the innovation rate in the average school had been one new idea per year; however, a New York study reveals that there was a threefold increase afterwards.

From the many studies conducted over the past ten years since this historic event we have learned that most schools are accepting the challenges which innovation presents with considerable reluctance. They fear change, for in changing they are threatened with having to move from patterns that are comfortable toward something that is unknown.

There are several approaches which facilitate change, two of which are the pragmatic approach and the directed approach. The former involves school staff members in the study and development of planning, using the theory that people who participate in the planning of change are more eager to make the change. The latter, a less localized approach, is that of directed change. This takes place when the basic research and program design have been done outside the school district and a package deal is handed to the public schools on a vertical level. Modern math was handled by the directed approach. An excellent way of assuring success in this

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*A synopsis of a presentation by Berlie Fallon, Professor of Education, Texas Technological College

approach is to allow the participants in such a program to visit an already existing program to view its success.

Innovation by itself is not our basic goal; it is only the gateway to constructive educational changes which will stand up. Such changes involve a three phase process: innovation, diffusion, and integration. An exemplary program must be spread out and made available as a whole in order to be constructive in the learning process.

In pursuing such goals, administrators should avoid the pitfalls on the way by asking themselves whether their school buildings are equipped for change. Are their teachers allowed free time in which to innovate; do they have specific professional goals? Does the principal restrict more than is necessary by his attitude? Is there linkage with other school systems?

The administrator will find certain traits are typical of the innovative teacher: he is high in intelligence and verbal ability, is not bound by local norms, is probably altruistic and highly creative, will not be bound by local norms, is moderately rebellious, and is usually either younger or older than the majority of teachers.

The innovative administrators are usually younger as a group than the profession at large. They are not members of their peer group in the traditional sense. They are less sought after as advisors (this is probably because other administrators feel threatened), they pull in more people from outside the school district. They often have shorter tenure, probably because they go on to better jobs.

Studies tell us that innovation is better received when it is applied to universal problems in education with which almost every teacher

is forced to cope frequently. Change will be accepted more readily when it is effected gradually; enthusiasm will be maintained when progress along the way is shown by frequent evaluation; and teachers will be more eager to participate in new ideas if they are provided with adequate free time and if they are given credit for their ideas.

Since teachers seem, according to these studies, to look to their own peer social structure, rather than the administrative one, for example and advice, it would appear that our best bet may be to choose teachers themselves to be the innovators. The respect and security which these particular teachers experience will assure successful diffusion of constructive educational changes by the remaining groups of teachers.

The principal is responsible for setting the tone or climate for innovation, and there are certain guidelines for doing this: he should communicate as much as possible person to person with the teachers; he should know what is going on in each classroom and take an active interest in these functions; he should do an extensive amount of professional reading and point out significant resources to his faculty; and perhaps most important of all, he should encourage the teachers to try new things without fear of failure. Innovation cannot be successful if staff members are constantly under pressure so that they have to worry about outcomes and repercussions. The halo effect will replace objectivity, and evaluations will be given in glowing terms, resulting in the sale of ideas that are not really good.

There are in most communities many things that make it difficult to do certain things in education, so we should look to the specific community power structure with which we are dealing. Some power structures are more

interested in their goals than they are in the processes by which these are achieved, so we must find out what the informal group structure is thinking and figure out ways to work through the formal structure. This, of course, means more person to person contact over a coffee cup or in other informal settings.

An exemplary community for educational change is, in my opinion, Las Vegas, Nevada. The educators in this school system come from everywhere, so there is an unusual mixture of background; there are no two identical programs, goals, or supervisory ties that I can observe from one building to another; the teachers are allowed to express themselves; two or three faculty campouts are held a year to allow evaluation on an informal basis; and no one seems tradition-bound.

ABSTRACT OF SPEECH ON EDUCATIONAL INNOVATION

by

Franklin G. Bouwsma*

There are many different problems we face as administrators when we consider the prospect of Educational Innovation, but the first decision is yours. It is necessary to shatter inertia and this can only be accomplished if you the administrator decide to innovate. In the field of innovation the administrator cannot go on forever being a good egg; either you hatch or you go rotten. There is no half-way point, there is no such thing as indecisive innovation.

After you have decided to start you must then make a second corollary decision on who must be involved in planning change. May I recommend you consider these rules of thumb:

1. Do not go beyond the present state of the art of engineering.

2. Be sure to involve the consumer so you can insure local utilization.

We all know of projects and programs developed by eager enthusiasts in the past decade which failed because of equipment incapabilities. Many times equipment manufacturers suggested potential automation or educational properties which were unattainable, but in the large majority of instances the educator or administrator built up an implication in some equipment or program to an idealized state and it was beyond the capability of present state of the art of engineering and of education to deliver the suggested results.

It is very easy to get so involved in the aspects of the machinery and its complexities that you will tend to solve problems created by the

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machines with other more complex machines. We call this an improper gear ratio. The present or opposite trend is to try to use machines or programs we can humanize learning not dehumanize it. A friend once stated our problem is, "how to humanize the scientist and simonize the humanist." The answer to the students basic query, "Who am I?" is not a teaching machine, but is a teacher who has time when the student asks the question.

The present state of the art of engineering must be analyzed by a highly competent technical staff. The administrator must ask for their opinion and when they give it he should listen. The technical staff should be involved in the design of the change to hold it in the bounds of credibility.

Many of the projects which failed or are now limping dismally to oblivion never involved the consumer in the design of the project. The campuses had the administrative will and the engineering know how, but the program was designed as a type of academic fallout from on high and the faculty and the students have successfully outlived the project. Involve your consumers and they will make a viable project which is their own and it will surely endure. Design the project for their continued involvment and after initiating, the administrator can stand to one side while the faculty guides it into tracks which satisfy their needs. Without faculty and student involvement there is little hope of success beyond a transitory public relations story or two.

Educational Innovation really has four parts of the Learning Process involved throughout and the projects will require different variants of each part. You should be aware that every rule of operation has many variables and opposite views which will work well, but these are my operational guides of the past 14 years.

The first part of the Learning Process is the Professor, the faculty member. He is the content specialist, the inventory of the material, the selector of information, the guider of student stimuli. It is his task to select and develop that body of material or that subject which the student should probe, sift, or question. He is not necessarily an actor and frequently his delivery or appearance detracts from the material or distracts the students. The question of faculty delivery or professional narrator is not of major importance to the faculty member. The faculty orientation is to the proper content and its motivation. This is where years of study are brought to fruition and this is where the role of the professor cannot be questioned.

The Professor must select the subject matter according to proper media and must be very aware of similar projects being developed on other campuses. An Innovations Library of research data in education and available produced materials should be designed for faculty browsing and discussion, and it should be an area designed to be conducive to straying down the path of educational heresy. The many reports and studies crammed into administrative dead files should be displayed there, and a faculty librarian should gather information for the faculty on an inter-library loan basis. We believe that the faculty will lead in innovation if they have the data and the correct information. It is easier to forage into the known, to pioneer down an expressway.

The professional team planning the design for the future should plan the project to give the faculty member a low student ratio when the student needs him. The many aspects of each subject should be analyzed for group study, group problem-solving, case analysis, programmed rote material, information practice, and concepts to question among other

instructional methodology or media. The methodology of epistemology should become a major part of the professorial problem for each course.

The faculty should be involved in the selection of purchased instructional materials. They should pledge a minimum of three years use of the films or tapes purchased during the year. The administration should agree to purchase the materials they have selected after the preview committee and the faculty of the department have voted to purchase them. A system of review of materials at a certain time should be developed so the material should not be out of date. The faculty viewing will not only be important for proper selection, but it also creates an awareness of what is being done and gives them a greater sense of professional production. Their higher standard of acceptance will require greater selection and invention on their part and higher production quality on the part of the local production staff.

A skilled aware faculty is the beginning of the Learning Process in the educational institution, all other aspects are subservient to their part of the process. Listen to their longings, phobias, and triumphs.

The second part of the Learning Process is the content. It must be analyzed for the differing student needs and for its ability to satisfy student needs and different times and levels.

The greatest breakthroughs in this century are the ability to store and retrieve information, and the fact that we are learning how people learn. All of the educational process in the future will be based on these facts and now is the time for the faculty to design the subject matter for this future.

Materials should be programmed in small bits in sequence to insure comprehension of the subject. I know this is quite behavioristic, but it works, and more people will tend to learn more efficiently, so it is time to use this first step in organizing material to learn. The early rhetoricians and dialecticians worked out the detail of disposition of materials for the persuasive effect. The Dispostio of the future will be the design of the content to insure the acquisition of the desired information. The yellowed notes in chronological order have very little reason for existence if they are not an effective learning methodology.

The content must flow easily from one sequence to another and trangential forays should be planned in branching form to pique the student in individual study programs. It should be noted that sheer stimulus-response instruction is usually insufferably dull but effective. Care should be taken to develop the more interesting factors of the subject throughout.

Other parts of the content should be designed for student stimulation. It should force the student to question. It should be a catalyst to move the student from information to the search for knowledge.

For many years we tried to put information in the student like jam in a jar and at the end of the year we opened the jar to see how much jam there was. Sometimes the effect was "GIGO" garbage in--garbage out. In the era of computerized information storage this instructional system is hopelessly obsolete. The content must stimulate the student to question, to probe, to sift and then solve. Instead of jam jar instruction maybe we should put bees in their bonnet and see which way they jump.

The content should be designed for maximum use of stored data applied to the local case studies. The humanized give and take or dialectic must be designed into the content itself to insure student involvement. If information is stored nearby readily available we should teach how to find it and use it, not how to unnecessarily duplicate it. The Postlethwaite project at Purdue is an example of audiotape exercises in the Science program to increase learning ability. It is stored data. Eight mm. single concept films in the technical area is an example of stored data. The programmed learning workbook is stored data. Some teaching machines and some computer assisted instruction is a good use of stored data in instruction, however frequently these projects are extremely expensive page turners. The change in content design is the most difficult problem for the faculty. It is a continuous change.

The student or learner is the third part of the process we have been analyzing. Of course we all are in this category as members of the community of scholars, but at this time we should consider especially that tuition paying group who give us our daily bread. The student needs professorial empathy. We seldom hear a faculty member or administrator note aloud the desirability of comprehending student needs, but the student is the individual of the future and the individuality is the key to this persons learning. He will accept innovation which will enhance his ability to be an individual in a cipher-prone society. Large group projects should be designed to gain more professorial productivity for more "other side of the log time."

The students should be tested frequently to continue the improvement of materials for more effective communication. The goal should be

to improve communication so the comprehension is constant at the 100% level and the time spent in study is the bell curve.

Students should analyze the projects and their effectiveness as paying consumers and their analysis is usually quite sound. Their preferences are quite important, for student motivations can be a guide for a design for greater learner involvement. The students will tend to guide the projects for humanizing at critical learning points they will oppose dehumanizing violently.

Obviously the fourth part is the media itself or the vehicle or occasion for learning.

The accessibility of instructional materials is a critical part of any Learning Resources Center concept. We have found at Miami-Dade that open instructional carrels, the library study divider stack, the student materials access counter, and a computer printout analysis increased our utilization of audio-visual materials 500% in six months. It is necessary to distribute information widely on availability and it is necessary to distribute information widely on availability and it is necessary to guide the purchase of equipment for a low-maintenance high-performance operation. The faculty should not be required to learn how to operate any equipment, and the student operators should operate professionally.

All media produced locally on the campus should be produced so that there is a faculty approval of all of the aspects of production along the way. This will take more time but it insures quality production and more utilization.

As much as possible there should be multiple presentation potential for local productions, e.g. a color film has a possibility of presentation as a movie in an auditorium, can be seen as a movie in a classroom, can be reduced to an 8 mm film in a student carrel for individual study and can be seen on a television system in any situation simultaneously; a videotape can only go through a television system.

We find that faculty and student preference is for professional production quality. In order to achieve this comparably quality locally we have acquired a professional staff. Our faculty and students have voted in favor of these presentations and we have more faculty requested projects than we can produce. Our faculty are professionals in their field, we try to give them professional materials.

One of the important things to remember about the use of media is that there are different strengths and weaknesses in each medium, and the content and its use will frequently recommend the proper medium. For many years we have been videotaping programs which should have been audiotapes with a few visuals and charts passed around through the class. In our present state we will differentiate between a color videotape and color film production according to ancillary class or student individual study projects. We will also point out the editing problems and solutions and then will decide which is the correct medium. There are differences in media, they should be used sparingly in a course and different aspects should be used (the long distance expert phone call one week, the programmed learning workbook at certain times the audiotape notebook one week, etc.).

It is obvious that local and regional libraries of materials are being developed. We have many projects like this in Florida and in the

Southern Region. As long as materials are developed individually there is no problem, but full courses in the can are on their way out. A library with infinite variety also permits instructional variety in colleges, their reason for existence.

The interchangeability of equipment and materials will be critical in the near future. Be aware that in purchases of equipment the extra dollars may insure your ability to get outside of your classroom walls. You must also be sure the faculty "review and edit" rights are protected for each outside use of library use. The professional rights are vital to every college and they must be protected by written contract.

The design of building, study space and classroom should be based on as much flexibility as possible. Unless a carrel or viewing system is flexible it is soon obsolete for viewing and study patterns will change daily. In the planning of new spaces for new media follow tight engineering specifications and broad educational specifications.

These then are my thoughts on Educational Innovation, it's up to the administrator to start it, to keep it plausible in terms of engineering, and to insure the involvement of the faculty and students; and the varying parts of the Learning Process, the Professor, the Content, the Student, and the Media should be analyzed for greater learning efficiency and effectiveness. For us as administrators it will require an innovation, "send not to find for whom the school bell tolls, it tolls for thee."

TOWARD THE SCHOOL OF TOMORROW TODAY

by

Charles W. Mansfield*

Dissatisfaction with what we are presently doing in education is the only legitimate reason for innovating, for it is only to the extent that we are not satisfied that we should be concerned about changing things. We should realize, however, that innovation may mean altering our present-day objectives or it may mean merely seeking better ways of doing what we claim we are already doing. There is considerable evidence that we need to do both.

In refocusing our sights in light of today's principles and disciplines, we see that society's emphasis has changed from the industrial revolution with its concentration on production and material resources to that of the technological revolution with its concentration on the mind of man and the development of human resources. This has implications for our educational objectives. In addition to our traditional skill objectives, pupils need to learn certain technical skills such as the use of modern communications media, computers, and so forth. They need to develop inquiry processes for acquiring knowledge about the world in which they live in a manner that is relevant and practical for their own lives. In addition, they must be helped to understand themselves if they are to become mature, fully-functioning human beings.

Individualized instruction does not mean one pupil per teacher; it does not mean specifically sized groups. It does mean that we get

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*A synopsis of a presentation by Charles W. Mansfield, Director, School of Tomorrow Programs, Inter-American Education Center, San Antonio, Texas.

away from normative decision-making for the child. There are two things that we must have if we wish individualized instruction: first, we must derive data from the learner before we make decisions about him. He must be at least one data source so that, for example, if we are going to give a spelling test we can determine what words to give this particular pupil. Not all of the data must come from him; instructional decisions must also be based upon our professional knowledge, but some of the data must come from him. Second, we must have alternatives. There should be more than one size for classes, more than one teacher that a child may be assigned to, and more flexible buildings. We need to have a wide range of materials readily accessible to the pupil.

We need to look at the ways we can restructure our concepts about schools to a more sophisticated degree, so that we will be concerned with the things we can change rather than those we cannot change. Instead of bewailing the need for more money, we must figure out better ways to use the money we already have. We should ask ourselves questions such as, "What is more important to education, the cafeteria or the library?" We must look at alternative approaches for using our educational resources and then determine our priorities in terms of securing optimism pay-off.

Generally speaking, progress is brought about on a broken-front basis. We cannot move the whole world simultaneously. When one teacher wants to progress, let her; don't wait until all the other teachers are ready. Uniformity does not mean equality.

There is nothing so powerful as an idea whose time has come. Education's time has come; we are in the limelight. We have a great opportunity, but we also have a great responsibility. What happens

at this conference is not going to make any difference in education; what happens when you go back to your schools may make a lot of difference.

INNOVATION IN SPACE

by

Blair Rowland*

If man had never learned to harness a horse, today's automobile possibly would have looked considerably different. America's most innovators of space, our automobile designers, have produced a tremendous volume of innovations, yet the automobile still basically matches the configeration of the horse and buggy. The power is still up front, the driver sits in the same place, with his hands held chest high, and the passengers still sit in rows facing the direction of travel. Of course, today's automobile is better than yesterday's buggy. We are better protected from the weather (even though some buggys did have isinglass curtains we could roll right down). We have heating and cooling, and radios to keep up with the news, and we can get where we are going faster.

It's kinda like today's modern, air-conditioned schoolhouse, with educational TV and accellerated classes. The teacher is still up front, with the students in rows facing the same direction, and the blackboard still occupies the same prominent position. And of course today's modern schoolhouses are better than Boston's first. We've made them round, and hexagonal, and octagonal, and we've streamlined them and made them snail-shaped, and we've sloped, and crowned and domed the roofs. We've painted them a variety of pretty colors. We've cooled them, and improved them acoustically, and the lighting is considerably better. We've coined the magical phrase "Environment for Learning." Yet today's modern schoolhouse still basically matches the configuration of Boston's first. Maybe that's O. K.

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*C. S. I., Wilson, Morris, Crain & Anderson, Architects, Houston, Texas.

If all we expect from an automobile is to get from here to there and back again, then what difference does it make if it still resembles the horse and buggy. And if all we want to take place in a school is reading, and writing, and arithmetic, if all we seek is memorization of past events, if all we are trying to do is extend the past into the future, if teaching comes before learning, then the automobile designer's kind of innovation is all that is needed, and we are doing, for the most part, a rather good job of creating an " Environment for Teaching," but not necessarily for "Learning."

So when we start talking about innovation in space, I think we should first decide on what kind of innovation we seek. Are we simply trying to improve the horse and buggy, or are we trying to develop a personal space ship?

I think that we had better make sure that we are planning for an all dimensional education, as opposed to a one dimensional education. For centuries we have made the mistake of assuming that the future is simply an extension of the past, and that knowledge of the past would equip us to cope with the situations of the future; that progress through time is simply a straight line, extending from recorded time to infinity. Hence, we have provided a one dimensional education; commitment to memory of experienced concepts and events, with the confidence that by either remembering or by looking it up in a book somewhere, we would have the tools to cope with whatever situation may arise.

The only reason this system has not resulted in disaster is the slowness with which change has occurred. Maybe this is why change has been so slow. But regardless of all that, we are, whether we like it or not, in the midst of a revolution. We live in a sort of double chronology.

Time up to 1945 was more moderate, more measured in pace and in accomplishment. People put down roots. Since 1945, however, time seems to have moved at double speed. People move from place to place, one job a steppingstone to another, one house a peg on the way up. The technology of our time has opened up possibilities in communication, transportation and automation that are truly unlimited. Change used to take a generation; now it comes as we turn about. The rapid progress we have witnessed in our time has welded us into an expectation of change--a habit of mind expecting rapid, revolutionary developments; a habit of mind, it must be admitted, that is unsettling, unstable and complex.

The toughest question facing us now, I believe, is whether we have the courage and flexibility and imagination to innovate as the times require. Please let us not continue to kid ourselves. The old ways of doing things are not going to get the job done. But giving up the old ways will be painful. Institutions fear change. In the face of change we all grow defensive, we all move toward protecting our own vested interests. But the over-riding vested interest of us all is in the validity of American education. That is the precious thing we hold in trust.

For my part, I am confident. We are a flexible, inventive people, and we are at an intensely creative moment in American educational history. We do care a great deal about the outcome.

So, now I would like to show you three examples of innovation in space. First is the Matzke School which possibly some of you have seen. It opened just one year ago. Next will come the Holbrook School, on which construction will begin late next month. Last will be the College of Education building at the University of Houston. Construction on this

building will begin next February. All three are examples of what can result from courageous and inventive decisions.

This is what Mr. T. S. Hancock, then Superintendent of Schools, Cypress-Fairbanks Independent School District had to say at the beginning of planning for the Matzke School.

> From the beginning the schoolhouse has been an instrument of the administrator and of the teacher. It has been organized around a concept which provides for convenience of administration and for convenience of teaching. What we are about to learn, at long last, is that what we wish to take place in the schoolhouse is learning--not teaching. No longer can this country afford the luxury of handing one teacher thirty students and expecting her to teach them, by rote, a measured amount of knowledge. It has always been true, of course, that the intelligent man continues to study and to learn after his formal education is completed. In our future, or at least in the future of today's students, this continuation of study will become a necessity. Right now, today, it is not possible to teach, in the short time allotted, all that is required for satisfactory existence in today's society. What we will be doing in tomorrow's schoolhouses is learning. Learning how to learn. Teaching how to learn. Learning by teaching.

And at the beginning of planning for the College of Education Building, Dean R. B. Howsam had this to say,

> The institution that builds makes important decisions. It has no choice but to select among alternatives which will shape its future. It can build for the past, for the present, or for the future.
>
> Wisdom would seem to call for a serious attempt to plan for the future as adequately as possible. When this choice is made, others are confronted. Two of the clearer ones are:
>
> 1. Assuming and accepting the inevitability of change, what is the direction it will take and what impact will it have on building and facilities needs.
>
> 2. Does the institution choose to influence the direction of change and if it does, what program will it employ and what facilities will it need.
>
> The University of Houston and its College of Education recognize the sweeping changes now taking place in Education. Under such conditions a College of Education is one of the nations large universities,

> serving one of its most significant metropolitan areas, has little choice but to assess the value of change options and influence both choices and implementaion of choices. The University as a whole and the faculty of the College of Education choose to make a difference in education. This is done in the main through influence on people. To Colleges of Education come the teachers of the future for preparation and teachers of the present for extension of their professional training and re-education. Out from the College, educational influence of the serious deliberation, testing, research and demonstration in education. To do so and to merit confidence in its leadership, outstanding programs and facilities are needed.

In summary then, what I am trying to say to you is that meaningful innovation in schoolhouse architecture can result only after meaningful innovation in the school program. The requirement upon the architect to continousely innovate in the improvement of the functioning and operation of the schoolhouse is implicit within the discipline. To continue to provide better lighting, better heating and cooling. To provide wiser selection of colors and materials. To provide improved circulation and space relationships. These are incumbent upon the architect at all times.

The point is that it is only after the decision to really innovate in the school program has been reached that there occurs the opportunity to develop meaningful innovation within the schoolhouse. And, most important of all, is this statement: Innovation within the school program or the schoolhouse has no value at all except in terms of its improvement of each student's learning achievement.

EXHIBIT A

There were 84 representatives from thirty school districts:

Alvin
Anahuac
Brazosport
Bridge City
Bryan
Clear Creek
Columbia-Brazoria
Crosby
Cypress Fairbanks
Dayton
Deer Park
Dickinson
Eagle Lake
East Chambers
Friendswood
Galena Park
Goose Creek
Hempstead
Lamar
Liberty
Little Cypress
Lumberton
Northeast Houston
Pasadena
Pearland
Port Arthur
South Houston
Spring Branch
Texas City
Wharton

There were 148 representatives from seventeen universities and colleges:

Alvin Junior College
Brazosport Junior College
Christopher College
College of the Mainland
Galveston Community College
Lee College
Miami-Dade Junior College
Paris Junior College
San Antonio College
San Jacinto Junior College
South Texas Junior College
Texarkana College
Texas Tech
UCLA
University of Houston
Weatherford College
Wharton County Junior College

Members from the following Education Centers:

Gulf Schools Supplementary Education Center
Inter-American Education Center
Region IV Education Service Center
Texas Gulf Coast Science Educational Resources Center