INSTRUCTION AND QUALITY CONTROLS IN THE COLLEGE OF CONTINUING EDUCATION AT EMBRY-RIDDLE AERONAUTICAL UNIVERSITY

Paper for CCE Symposium

by

Harold E. Gray

Professor of Aviation/Business Administration

College of Continuing Education

Embry-Riddle Aeronautical University

INTRODUCTION

The Faculty of Embry-Riddle Aeronautical University, in adopting its constitution, chose to have as its primary responsibility "assurance of academic excellence through delivery of the academic process which includes quality teaching, scholarly activity, and service." It is with continued improvement in the first of these listed items, "quality teaching" and support of improvement of the second, scholarly activity," that this symposium series has been initiated. It is but one of numerous ways in which we, as a Faculty, seek continuous improvement in our quest for academic excellence. This is a product of the Faculty and by the Faculty, and we hope that all who teach, wherever you teach, will benefit from it.

You will notice that much of the emphasis of the papers presented here deals with the adult student. For those of you who are not familiar with the Embry - Riddle Aeronautical University and its College of Continuing Education, some idea of the background, size, and scope is presented by Dr. Hal Gray in the first paper.

The papers selected for presentation were chosen by a selection committee consisting of the elected officers of the Faculty Senate and the members of the Faculty Development Committee.

Dr. Paul Bankit
Dr. Ronald Clark
Dr. John King
Dr. Vance Mitchell
Dr. Frank VanderWert
Dr. Earl Wheeler

A call for papers for the next symposium, to be presented in late spring, 1994, will be issued soon. I urge you to consider a submission.

ABSTRACT

The quality of instruction at Embry-Riddle Aeronautical University has been observed and analyzed to determine if there is a need for different approaches to teaching the traditional students at the Daytona Beach Campus and the non-traditional adult students enrolled in ERAU courses at 85 Air Force, Army, and Navy Bases across the country. This diversity was recognized by the former President of ERAU, and he advocated the unification of the various divisions of the University into an ideal "One University Concept" despite their differences. The administrators, of course, are charged with the responsibility of developing and maintaining high academic standards in all the on-campus and the off-campus degree programs.

The University must comply with the standards set by the accrediting agency - the Southern Association of Colleges and Schools. The SACS team completed its regular investigation of policies and practices of the University. This inspection was successful; however, the University must continue to adhere to high standards of quality in courses, curricula, and degree programs, while maintaining productive and efficient teaching methods.

This report describes the educational philosophies and psychologies applied: Cognitive, Gestalt, Behaviorism, Behavior Modification, Conditioned Reflex, plus motivation by satisfying needs and achievement; instructional techniques, including Lecture, Interactive Discussion, the Case Method; also measurement and evaluation techniques.

The advisory system involving Center Academic Advisors, Regional Faculty Advisors, under the surveillance of Center and Regional Directors is scrutinized. The effectiveness of the CCE system of teaching, monitoring, and supervising is also assessed.

The College of Continuing Education is proud of its recent accomplishments: recognition by SACS as an outstanding model of Continuing Education, and winning the Ray Ehrensberger Award granted by the American Association of Adult and Continuing Education.

ERAU is still striving, however, to gain stature in the "Big League" of higher education.

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BACKGROUND: THE HIGHER EDUCATIONAL STAGE IS SET

An Ideal: One University Concept at ERAU

General Kenneth L. Tallman, former President of ERAU, espoused the ideal that this university should strive to be a unified institution rather than three separate entities. This was a very ambitious objective, as traditionally ERAU evolved from a single campus located at Daytona Beach, Florida, expanded to a second campus at Prescott, Arizona, then branched out to include education centers located at 85 military bases in the United States, also in Europe and England.

The University Experiences Expansion and Division

With ERAU Headquarters in Daytona Beach, Florida, including the major administrative offices, classrooms, flying school and flight line, student dormitories, library, laboratories, and other support facilities, the administration and its faculty tended to regard this operation as "The Main Campus." Naturally the university policies, regulations, and operational procedures, courses, and curricula were initiated at this headquarters.

As the University expanded, a second base was established at Prescott, Arizona, with its administration, faculty, flight school and flight line, and its administrative offices and educational facilities. Prescott has taken on the status of a "lonely relative," despite a shorter but very successful history.

The third addition to ERAU was the College of Continuing Education, with its multiple operations at 85 military bases across the United States, England, and Europe. The College of Continuing Education continues to attract around 12,000 adult students annually - most of whom work their regular military jobs during the day, and attend school at night. Some of these education centers have added civilians to their student body. This "rich relative" collects millions of dollars in tuition, but very little prestige accorded by the Daytona Beach administration or faculty. However, this disdain is characteristic of Continuing Education operations at colleges and universities across the country.

These strained relations between the three entities have improved only slightly during the past five years, and there is little progress being made toward integrating them into one closely aligned single university - as General Tallman envisioned. It may be that unification is unrealistic. Why is it necessary that these three independently successful offspring be united? They are all recognized as Embry-Riddle Aeronautical University.

Division Does Not Obviate Unity

Many large and prestigious universities maintain their unity despite their numerous divisions: colleges, schools, institutes, branches, centers, etc. Harvard Business School has never been accepted by Harvard College; yet these entities enjoy the highest level of prestige. Perhaps the differences between these three entities at ERAU will contribute ultimately to the quality and greatness of this university.

ERAU is not unique in its conflict and disfavor for "Continuing Education." Most colleges and universities have witnessed increasing numbers of adults to their on-campus and off-campus programs - both in their credit and non-credit offerings. Some elite faculty members regard continuing education for the non-traditional students as a departure from the traditions of higher education. Others - including ambitious administrators and university accountants - welcome the addition of these mature students to their institutions.

Institutional Growth

Until the last two or three years, ERAU has enjoyed phenomenal growth in all its divisions. The "Main Campus" at Daytona Beach - with emphasis on its flight training and academic programs attracted more students than it could handle. But with the economic recession and the decline of the aviation industry - both in general aviation and the airlines - the enrollment at Daytona Beach has dropped from 5000 students, with an eager waiting list, to about 4000 students. Prescott also dropped from 1800 to 1500. CCE dropped enrollments during the Desert Storm War, but it has recovered mainly because many military students realize they may be released from the service, and must be prepared for the civilian market.

ERAU Structure

For the past year the University has been undergoing administrative changes. The overall university structure has included a President and several Vice Presidents, one for Administration, another for Academics; with three Chancellors - one for each campus: Daytona Beach, Prescott, and the International Division (more recently the College of Continuing Education). The Chancellors by title were replaced with three Provosts over Deans for each of the units. Most recently the Provosts were eliminated, which left Deans in charge of each campus. However, CCE has a Dean over two Deans, one for the U.S. Division; the other for the European Division.

Under the Deans at Daytona Beach and Prescott are Department Heads, supervising the various curricular units, also Flight Operations; plus some subdivisions: Centers, and support functions. CCE has some support divisions on campus, but CCE does not have any departments. Departmental functions are handled by committees.

Constitutions and Senates Emerge

In order to gain some semblance of governance, the President, aided by the Vice President for Academics, allowed and encouraged the introduction of Constitutions for all three academic structures; although Daytona already had a Constitution, Prescott and CCE were encouraged to develop their own Constitutions - which they did. In addition to the regular provisions for academic freedom and governance, CCE added administrative duties to its committee members, that is, those faculty representatives with full-time status. These are full-time faculty who teach and serve as Regional Faculty Advisors, and also serve on designated committees. The effectiveness of this organizational structure remains to be experienced.

Mission of the University

With its expansion, ERAU has developed into a national and an international university. In the process, its mission has been broadened - also prodded by a review of its operations by its accrediting agency - the Southern Association of Colleges and Schools.

After a thorough investigation of ERAU, including an intensive self-study exercise, the accrediting agency gave the University not only a favorable grade, but recognition as a model institution of higher education. Of course their assessment team made some recommendations. One was for a revision of the University Mission Statement, plus a request that the faculty develop a precise "Outcomes Assessment Program" to ensure that the students at all levels accomplished the predetermined objectives of each course in the curricula.

Here are some excerpts from the revised University Mission Statement. The ERAU purpose is stated clearly in the 1992-1993 catalog: "To provide a comprehensive education to prepare graduates for productive careers and responsible citizenship to support the needs of aviation, aerospace, engineering and related fields." This is to be achieved by offering "undergraduate and graduate degree programs which prepare students for immediate productivity and career growth while providing a broad education with emphasis on communication and analytical skills."

Broad Education Goals

The educational objectives were broadened with this challenge: "To develop mature, responsible graduates capable of examining, evaluating and appreciating the economic, political, cultural, moral and technological aspects of humankind and society, and to foster a better understanding of the working of the free enterprise system and its social and economic benefits, and of the profit motive, as vital forces to the potential of individuals and of groups."

Behavior was added to these ambitious goals: "To promote ethical and responsible behavior among its students and graduates in local, national and international aviation and aerospace communities and in the community at large."

These are noble goals and objectives, which go way beyond mastery of subject matter studied in any particular course; thus adding additional responsibility for the instructors "to promote ethical and responsible behavior . . . while preparing graduates with communication and analytical skills required for productive careers to support the needs of aviation, aerospace, engineering and related fields."

In addition, the students should be prepared to become responsible citizens, capable of examining, evaluating and appreciating the economic, political, cultural, moral and technological aspects of humankind and society - while understanding the working of the free enterprise system, its profit motive and social and economic benefits. The inclusion of understanding the profit motive and the free enterprise system was added by a member of the Board of Trustees.

These objectives are added to the subject-matter objectives of all the courses of instruction; therefore, requiring ingenuity on the part of the instructors to provide relevance and timely applications. While most of these objectives apply to the young traditional undergraduate student at Daytona Beach and Prescott, they could constitute additional challenges to the non-traditional military student at military education centers - especially those who may be leaving the service to compete in the civilian world of aviation, business, and industry.

Administrative Controls

The expansion of course coverage to include these mission objectives adds responsibilities for supervision and surveillance to the duties of the Center Directors, Center Academic Advisors, Regional Directors, and Regional Faculty Advisors. The real challenge for the administration is how to enforce compliance. There is a "school of thought" that seems to prevail that compliance is implemented by administrative decree, reinforced by memoranda and regulations - supported by course outlines, syllabi, and lesson plans.

Strict Compliance

Let us consider this concept of compliance for a moment. The official course outlines are supposed to specify that "The students will comprehend . . . . " a list of the course objectives. One course has 22 objectives required for the students to comprehend. Along side of these objectives are the specified hours and minutes to be dedicated to teaching these objectives. Incidentally, these objectives are changed whenever a new textbook is adopted for any particular course.

There is nothing wrong with specifying comprehensive objectives for all the courses of instruction. In fact, most of the Adjunct Instructors would be lost without the guidance of strict Course Outlines, Syllabi, and Lesson Plans - plus coaching provided by Center Academic Advisors and Regional Faculty Advisors. The irony here, however, is that the students must comprehend the objectives, and the instructors must require learning "by the numbers." This is more of a military order than an academic concept of teaching/learning.

MAINTAINING HIGHER EDUCATIONAL STANDARDS

Of course, it is understandable that the university is responsible for maintaining high academic standards, identified by predetermined objectives, and ensured by recognizable outcomes. Can educational objectives be ordered and accomplished by decree and regulations? Success is not achieved by order of administrators; favorable results are attained only when the student's and instructor's minds are tuned to the same frequency, and they are motivated strongly enough to aim for the same target - effective learning.

Total Quality Education

The latest edict, imposed on American management by the cult of D. Edward Deming, was imported from Japan, is called "TOTAL QUALITY MANAGEMENT." The concept has been interpolated for higher education by General McPeak, Chief of Staff for the Air Force. He has made it a requirement for all U.S. Air Force operations. Apparently, implementation of this order was delegated to General Loh, Commander in Chief of the Air Combat Command. He reiterated that TQM, now identified as QES for "Quality Education Standards," be adopted by all colleges and universities located on Air Force Bases, and providing courses and degree programs for the military personnel in the United States, England, and Europe. (The Flyer, Feb. 14, 1992, HQ TAC Public Affairs)

General Loh's order states that all colleges and universities offering courses on base for military personnel must provide courses with the same content and quality as those offered on their respective campuses. Quality standards must be established and measured by an inspecting team made up of military and civilian experts, representing a cross section of academic institutions. If these education programs do not meet the high quality standards, the faulty institutions will be asked to discontinue their on-base educational programs.

Climate of Compliance

This authoritarian climate of compliance is inconsistent with the Deming philosophy of Total Quality Control - as a review of his "fourteen points" will reveal. His entire philosophy is based on voluntary dedication of all members of the employee-management team working together to eliminate errors and raise quality standards. One of his major points is to "cease dependence on mass inspection to achieve quality." Nevertheless, if ERAU is to continue its operations at U.S. Air Force Bases, the university personnel must structure their programs to meet these requirements. (Quality or Else, Lloyd Dobyns & Clare Crawford-Mason, 1991)

Differentiate Training and Education

Some educators tend to equate **training** and **education**. The ERAU curricula contain a spectrum of courses covering essential skills for training pilots and aircraft mechanics, plus courses requiring mathematics emphasizing analytical skills. Many courses in exact sciences, such as physics, meteorology, and aerodynamics do require use of precise mathematical and statistical tools. However, many courses, particularly graduate courses, require comprehension of concepts and utilize abstract reasoning in problem solving.

Standards for Teaching/Learning

Certainly **standardization** is not the dominant ideal for higher education. Of course, standards of Teaching/Learning may be established. This is by no means a simple task, as no absolute standards exist in a national data bank, which can be retrieved for all instructors to follow on any subject. Recent televised discussions about **standard levels of achievement** for students attending elementary and secondary public schools would lead the public to believe that these standards could be ordered for every public school with compulsory compliance. In higher education, this is an evasive ideal.

Recognized Body of Knowledge

How can subject-matter standards be determined? A realistic approach is to recognize that subject matter may be identified within every **academic discipline**, in what scientists and scholars call "The body of knowledge." As a matter of fact, this range of information exists in encyclopedias, textbooks, non-fiction books, and miscellaneous documents stored in libraries and other depositories all around the world. These depositories are updated with information from newspapers, magazines, journals, microfiche, microfilm, audio and videotapes, and now on Compact Disks.

Bodies of Knowledge have been accumulated within all disciplines, such as the Natural Sciences, Social Sciences, Fine Arts, Astronomy, Architecture, Geology, Engineering, Psychology, Sociology, Philosophy, History, Geography, etc. Of course, all of these disciplines have subdivisions and specialties, such as "Management," which is subdivided into such areas of concentration as City Management, Personnel Management, Human Resources Management, Airline Management, Maintenance Management, etc.

Courses of Study

Moving toward the classroom, closer to the student, these disciplines are subdivided into courses, which are allocated modules of information that can be handled feasibly for students by teachers. Blocks of these courses may be designated as a "curriculum," or courses of study, which when completed enable the student to obtain a degree. The degree actually certifies that the student has mastered the subject matter - or body of knowledge - sufficiently to be able to apply this range of information - and in some cases, skills - to a job, within a career. Of course, this is a simplification of this whole process of being educated. Now let's turn attention to ways in which this subject matter is taught and learned.

Implementing Educational Policies and Procedures

Faculty orientations on policies, practices, and regulations give some general ideas on the nature of ERAU students, and how they should be treated, taught, tested, graded, and graduated; however, the determination of effective methods and techniques requires some exploration - even experimentation.

In a study of the student records two years ago, the administration discovered that there was a significant discrepancy in the grades received by students at the Daytona Beach Campus

and the students enrolled in courses offered at military bases by faculty of the College of Continuing Education. The grades were much higher for the CCE students. The administration identified this phenomenon as "Grade Inflation," and they admonished the faculty to raise their testing and grading standards. This they did, but not without argument.

DIFFERENT STUDENT BODIES AT ERAU

Individual Differences

Controversy over grade inflation does not warrant its treatment as a **Cause Celebre**, but the incident does raise some questions about the need for different methods of instruction for the vastly different student bodies pursuing their degrees at the "Main Campus," the Prescott Campus, and the far flung CCE Campuses.

A tour of the ERAU classrooms at the Daytona Beach Campus, the Prescott Campus, and a typical ERAU classroom at an Air Force base would reveal vast differences between the students. The basic characteristics include: differences in ages, interests, attitudes, motivations, values, experience, respect for authority, short-term objectives, and long-range goals. Since interest profiles, aptitude or intelligence tests, and psychological tests are not required for ERAU students, these measurements are not available, they have no bearing; but such scores might be enlightening to the researcher and the administration.

Traditional Main-stream and Non-traditional Students

The popular terms used to identify these two types of students are "traditional" and "non-traditional." The **traditional students**, ages 19 to 25, attend the "regular," or elitist four-year colleges and universities across the country. They live in dormitories, sorority or fraternity houses, and attend day-time classes at colleges and universities, such as the University of California, University of Southern California, Stanford, Chicago University, Yale, Harvard, Princeton, Duke, all the State Universities, and over 1700 other four-year institutions of higher education.

The **non-traditional students**, ages 25 to 50, attend the 1700 or more Community Colleges, and they have invaded most of the four-year colleges and universities. These students are mixed with large numbers of students who take non-credit hobby courses, leisure-time self-development courses, and vocational training courses. It is almost impossible to identify any of these as **typical students**, as they represent such a wide cross-section of our society; but their numbers keep increasing, as they realize the need for additional education and training to keep up with the changing technology in preparation for jobs and careers. However, a great number of them desire not only to improve themselves, but they want degrees to certify their achievement.

The Traditional ERAU Students
Versus
The Non-traditional ERAU Military Students

The traditional ERAU students at Daytona Beach and Prescott do not fit the pattern of the typical college and university students attending the elitist institutions. A main factor for ERAU students would be **interest**, and their major interest is **aviation**, as a high percentage of them take the flight training program in preparation for careers as airline pilots. The rest of them are planning for careers as aviation mechanics or managers in the aviation industry.

The other characteristics of these traditional students are closely allied with their counterparts in the elitist institutions. They have just come out of the mainstream of American high schools, and their tastes, values and attitudes are quite similar to those found in the student

unions and dorms at any college or university. There are some differences, however, in their motivations, goals, and objectives. Their career plans are predetermined before they come to ERAU - especially those who want to be pilots, mechanics, or managers in the airlines and aviation industry. They would differ decidedly from the great number of college students who have no idea of what careers to pursue; so many of them have a difficult time selecting a major, let alone choosing a career.

Now to compare these traditional students with the non-traditional career military types found in the ERAU designated classrooms at Air Force, Army, and Navy bases around the U.S., England, and Europe.

The average age of these **non-traditional students** pursuing undergraduate and graduate degrees with ERAU is 31 versus 21 for the **traditional students** at the Main Campus and Prescott. Their military careers have been certain, and their studies are directed toward qualifying for higher ranks and increasingly challenging careers as pilots, mechanics, specialists, and managers in recognized career fields and occupations. With the end of the Cold War, they have been made aware by the newly elected administration that their military careers may soon be terminated, and they must compete for civilian jobs in a depressed market. They are certainly not thrilled with the idea of filling menial jobs building roads and bridges in the American infrastructure - as they have been led to believe by some outspoken members of the Democratic Party.

There is no question about the strong motivation of these non-traditional students; they are very serious with definite goals and commitments. Most of them have families to support, and they are driven by the unmistakable urge to survive in a troubled economy. Yet their careers have always included an element of danger, as they performed their duties as pilots, flight crews, ground support personnel in combat zones. They have traveled and lived at bases all around the world, typically serving tours of duty lasting two to four years.

The students pursue their studies after hours - not four to five-hour days, and five-day weeks, enjoyed by students enrolled in regular colleges and universities. The classroom schedule at ERAU begins at 4:30 or 5:00 p.m. and ends at 9:00 or 10:00 p.m. They attend class after performing a full-time job during the daytime - often interrupted by Temporary Duty flights. Most of them had to interrupt their studies to perform their regular military duties in Desert Storm - the recent war against Iraq.

In addition to their military duties, and the ERAU studies, most of these students have family responsibilities - many with spouses and children. These full lives, with their multiple activities have given these men and women enriching experiences that enhance their preparations and discussions of course problems and applications to their work, and their projected careers either in the military or civilian occupations. It is understandable that these non-traditional students earn higher grades than the less motivated traditional students.

EDUCATIONAL PHILOSOPHIES

Pedagogy Versus Andragogy

Malcolm Knowles, one of the leaders and innovators in adult higher education, introduced a concept which raised a lot of controversy among educators. He identified the adult educators as "a band of wild horses, all going essentially the same direction but with many strays and much competition for leadership." (1980, p. 160) He contended that the adult student and the traditional college student are so different as to demand a "distinct discipline" which he titled "andragogy." He defined the term as "the art and science of helping adults learn." He claimed also that the age-old term for teaching, "pedagogy," be used to identify "the art and science of teaching children." (Freedman, 1987, p. 62)

Leonard Freedman, Dean of Extension and Continuing Education, at the University of California at Los Angeles, recommends six essential **methods of teaching/learning** which are appropriate for educating adults: (p. 63)

1. Continuing education should be learner rather than teacher centered.

2. The adult learner should be self-directing rather than dependent and should participate actively in every stage of the educational process including setting the objectives, design of the curriculum, and selection of learning methods.

3. The content and methodologies should draw heavily upon the learner's life and work experience.

4. Adult learners tend to be motivated by the desire to address problems rather than to master subject matter. Thus, adult educators should be concerned more with process than with specific content.

5. The teacher - whom Knowles prefers to call the "facilitator of learning" - has an important role but is only one learning resource among many. The teacher/facilitator should enter into a partnership with the learner, sometimes embodied in a "learning contract" through which the learner undertakes to complete a series of agreed-upon processes to achieve a self-identified objective.

6. The success of this partnership requires that a climate of mutual respect and trust be established between teacher and learner.

Student-centered Versus Instructor-centered Education
Military Students Not Always "Sold" on New Methods

This approach to the education of adults as non-traditional learners challenges many of the assumptions which prevail in traditional methods of instruction. It may be noted also that many instructors, especially those adjuncts who have had their basic and advanced instructor training in military service, do not accept these "radical" departures from traditional methods of

instruction.

Furthermore, many military students do not think they are learning if their instructor - who is the **authority** on the subject - does not transmit that subject matter via the lecture method. Of course, many of these "over-worked" students would prefer to have the answers to forthcoming examinations rather than being motivated by the instructor to think or to solve practical career problems.

Teacher-directed Versus Self-directed Learning

It is not unusual for some students who are unfamiliar with unconventional methods of teaching/learning to misconstrue **non-directive** methods of instruction as lack of leadership on the part of the instructor. These students and many of our faculty are not familiar with the early Psychoanalytical Schools of Psychology espoused by Freud, Jung, and Adler. Later, Carl Rogers promoted the practice of **non-directive counseling**, which has become very popular in most occupations. These **interactive non-directive teaching methods** are not easy "to sell" to those who have lived and worked in the environment of regulations, and implementation by order of higher ranking officers.

Non-directive Techniques Not Appropriate for Combat

Outside the classroom, the permissive instructor is readily made aware that **non-directive techniques are not very effective under combat conditions**. Obviously, during wartime in the heat of battle, soldiers, non-commissioned, and commissioned officers must carry out orders quickly not only to defeat the enemy but also to survive. Those are conditions under which effective training pays off.

EDUCATIONAL PSYCHOLOGIES

Cognitive and/or Gestalt Psychology

More recent "Schools of Psychology" have direct relevance to **how adults learn**. The currently most popular is **Cognitive Psychology**. Mark Ashcraft, Professor of Psychology at Cleveland State University, defines **cognition** as "the collection of mental processes and activities used in processing, remembering, and thinking, and the act of using those processes." (p. 10)

Expanding this definition, he states that "cognitive psychology is the scientific study of human memory and mental processes, including such activities as perception, remembering, using language, reasoning, and solving problems." To this he adds "three assumptions that pervade the field of **cognitive psychology**: (1) that mental processes exist; (2) that people are active information processors; and (3) that mental processes and structures can be revealed by time and accuracy measures." (p.31)

In a book entitled, "Applying Cognitive Psychology to User-Interface Design," edited by two British authors, Margaret Gardiner and Bruce Christie, these authors give definitions which broaden the scope of **cognitive psychology**: "Cognitive psychology is the study of knowledge and of how people use it. It deals with how we gain information from the world, how it is represented and transformed as knowledge, how that information is stored, and how that knowledge is used to direct behavior." (p. 57)

The various authors in the above cited text were very clever in implying the connection between cognitive psychology and the trends in computer technology toward the development of **artificial intelligence**; however, they dodged the dramatic but evolutionary conclusion that the computer will exceed **human intelligence**. Nevertheless, they did emphasize the importance of human and computer compatibility. (p. 305)

There is no doubt that the computer is becoming an indispensable tool for conducting research, especially in its ability to store, retrieve, and transmit information. These three functions are included in all the definitions of cognitive psychology, as it emphasizes the human **thinking process**.

Gestalt Psychology and Insight

In contrast to the cognitive psychologists, the Gestalt Psychologists made a behaviorist analysis with emphasis on mental processes involved in solving problems. The term "Gestalt" means "shape," with respect to the relation between the parts and the whole configuration. When an individual is confronted with a problem, he or she senses the answer to the problem, the discovery they termed **"insight."** This process involves **thinking**, which the Gestaltists "conceived of as grasping relationships in the perceptual field, and as such it was synonymous with insight." (Gardiner & Ghristie, p. 66)

As a method of instruction, the Gestalt concept is an effective approach in structuring learning projects which include problems designed to motivate students, and structured to give students the opportunity to apply **insight** for their solutions.

Behaviorism and Behavior Modification Behaviorism

J.B. Watson's **behaviorism** (early 1900s), though abandoned by the cognitive psychologists, does have some validity for teachers who need overt feedback cues to determine is the students are learning anything. The behaviorists rejected any theory that dealt with "reading the student's mind." However, they were mainly emphasizing skills training, or learning by doing - which involves behavior that can be measured, such as mastery of skills in mathematics, reading, drills, or athletic activities.

Behavior Modification

Although still endorsing behaviorism, B.F. Skinner, very skillfully launched a psychological concept that lasted some 50 years, and still persists in education and business. It was labelled "Behavior Modification," and it was used by every exercise and weight-control "expert" in England and America. He strengthened the concept of behavior control by adding "positive reinforcement" to the learning and training process. It was overwhelmingly accepted in educational circles as well as in business, extended also to "management training." Skinner also developed concepts and technology for "Teaching Machines" and "Programmed Learning." His concepts predated the computer, but he undoubtedly would have been an advocate of computer-assisted learning.

Negative Reinforcement

Traditional military discipline - along with its basic training - persists in its use of "negative reinforcement"; yet its results are usually positive, despite some resentment on the part of the learner.

Conditioned Reflex

This ancient concept of "conditioned reflex" was developed by I.P. Pavlov in his experiments with dogs. He associated feeding his dogs by ringing a bell, and he discovered that the dogs would salivate even if they were not fed. This he termed a "conditioned reflex." This concept is still effective in training pilots, or any military personnel, to respond with step-by-step **emergency procedures**. Automatic responses are certainly effective in meeting contingencies of all kinds. Motivation for such training is immediate, and procedures are readily memorized and drilled for instant response.

Motivation and Achievement

Maslow's Hierarchy of Needs

Abraham Maslow's "Hierarchy of Needs" (1940s) is still a very plausible explanation of **motivation.** He conceived that people's motives formed like a pyramid with the **physiological needs** at the base, transcending upward to **safety and security needs**, to **belongingness and love**, to **esteem, approval, and recognition**, to **aesthetic order** and beauty, and ultimately to **self-actualization**. (Lefton & Valatne, 1988, pp. 169-170)

Yet as progressively satisfying as these **drives** appear to be, they are very difficult to measure, and even harder to achieve. **Self-actualization** appears to be an unattainable goal, as it moves higher as the achiever comes close to its realization. Some psychologists relate this

term to **self-realization** - which is more of a pursuit than a level of achievement.

However, to the instructor and the students this **drive for self-actualization** is a real incentive for learning - **if it can be activated.**

McClelland's Achievement Motivation

Quite akin to Maslow's concept of motivating through needs is McClelland's contention that **achievement is a characteristic of the human personality**. Although in follow-up studies of this hypothesis, he discovered that this personality trait could be found only in capitalist countries espousing the "profit motive." (McClelland, 1961)

Undoubtedly this is a concept that has face validity in the military, with its emphasis on rank, and dedication to duty. The **drive for advancement** is real and very strong. Of course, it serves as an advantage for teacher and student in the military classroom.

A PHILOSOPHY OF ADULT EDUCATION

Dr. Bill Herlehy, one of the leading professors in the College of Continuing Education at ERAU, adds a touch of philosophy upon which to base an effective approach to the teaching/learning of adult students:

> Before you accept the challenge of educating these unique persons, it is well worthwhile to take a close look at what it is that makes them "tick." The adult learner who works full-time in a profession does not bring the same experiences and expectations to the classroom as does the traditional full-time student. . . . Each person in your classroom has different experiences, values, needs, aspirations, and persuasions which cause them to act and react differently from other individuals. . . You'll have to teach accordingly.
>
> (ERAU Faculty Academic Orientation Manual, p. F-1)

ADULT INSTRUCTIONAL METHODS AND TECHNIQUES

Teachers and administrators in higher education, especially those involved in **Continuing Education**, have been challenged by questions asked by students, faculty, and administrators: What is the role of the teacher in this rapidly expanding adjunct of education? Is the instructor to be regarded as the **leader, expert, authority, director, facilitator, a resource, a coach, or referee?**

According to Freedman, "The teacher as imparter of authoritative information and ideas is still omnipresent and is still usually identified as teacher, professor, faculty member, or instructor. The lecture remains a principal method . . . . A great deal of continuing education is subject rather than problem centered." (p. 67)

In spite of administrative decree, and advice of Center Directors, Center Academic Advisors, Regional Directors, and Regional Faculty Advisors - the most popular method of teaching/learning is the **teacher-centered, subject-centered lecture**, not the **student-centered** methods and techniques recommended for **adult and continuing education.**

The answers to these questions determines the methods and techniques that may be used in the classroom, laboratory, or wherever courses are taught. The **concept of teaching** is being challenged here. Does the teacher really **teach** anything? The process of teaching appears to be a simple matter of **transfer of knowledge**, but can knowledge be simply transferred from teacher to student? Is not **learning** something that happens to the student, if the student wants it to happen? Learning is not a simple automatic process that takes place when the teacher **covers the subject**, or the student **reads the text.**

Lecture Versus Interactive Learning Techniques

Nearly everybody - students, teachers, administrators, and the general public - believes that the lecture is the most efficient method of teaching and learning. As a matter of fact, proven by tests and experiments, **the lecture method is the least efficient method of teaching/learning.** Cited in Freeman's text is K.P. Cross, an adult educator states: "The lecture tends to be regarded as profoundly inimical to effective learning." (Cross, p. 92)

The Foxfire Method

A provocative essay appeared in **JAAER**, Embry-Riddles' Journal of Aviation/Aerospace Research. Its author, Stephen Newburg, is a graduate student pursuing an **MBAA**. He titled his paper "Goodbye To The Lecture: Embracing Interactive Learning Techniques." In arrogant language he condemns the lecture method: "The lecture method of teaching might consider, for the good of education, laying itself to rest in a grave of banality, allowing innovative and creative teaching methods to rise from its wake." (p. 32)

In its place, Newburg touts the "Foxfire Method," conceived by Professor Eliot Wigginton of the University of Georgia, who describes his method: "The Foxfire method is based on the notion that classrooms should revolve around the interests of students, rather than the direction of teachers or bureaucrats." Implementing the method, the teacher is not a boss or an authority but a guide for the students who have a vested interest in learning. The process thrives on interaction, group discussions, role-playing, peer reviews, with positive feedback. (p. 34)

Interactive Discussion

When students reach the stature of adults, they no longer take the teacher's statements at face value; they want to know **why**. Thus the **Discussion Method** comes into being in the classroom. The process adds interest, direction, and motivation to the learning situation. It gains more depth and momentum when provocative questions are posed purposely by the teacher and the students. The students must engage in search, research, and discussion to find the answers.

"Yet discussion does not in itself assure educational quality, for it can easily degenerate into an incoherent, discursive pooling of ignorance," claims Freedman. (p. 70) How can this trap of ignorance be avoided? The enlightened instructor in continuing education precludes this possibility by requiring the students to prepare for discussions of designated topic by reading assignments in the text, library searches of books, periodicals, newspapers, or television programs, etc.

The Case Method

The Harvard Case Method, which has characterized the Harvard Business School for the past forty years, is still an effective method of teaching/learning while integrating subject matter with the traditional disciplines of business education. The integrating medium is the **Case Study** derived from a practical business problem confronting an enterprise. Information for the problem comes from interviews and observations of an actual business. This complex problem is written into the format of "The Case Study," prescribed by professors at the Harvard Business School.

That Case Study - along with all the others developed by the students in each class - becomes the center of discussion as it is presented by each student and critiqued by the professor. Instead of requiring the students to attend different subject-matter courses, the students are assembled into one big class, and the professors of each specialty are scheduled to listen to the cases presented by the students, and the professors then comment on the application of the subject matter to solving the problems found in each case.

Thus teaching and learning are intertwined in solving practical business problems - which in reality is the way businesses are operated in the American "Free Enterprise System." These cases written by the students and critiqued by the professors are compiled into **Case Study Books** and distributed to Business Colleges all over the world, thus helping students learn how to become business managers and operators.

COMPUTERS AND DATA BANKS

The development of advanced computer technology has provided more than word processing systems; **data banks** filled with billions of bits of information are available to students studying any subject in the college and university curricula. In fact, this information is available through public and private libraries and commercial depositories - retrievable through computer networks. To cite a baffling example: twenty-six volumes of Compton's Encyclopedia are stored on a 4 1/2 inch disk, called a CD ROM, which stands for Compact Disk with Read-Only Memory.

Computers as Research Tools

Data banks are available in most college and university libraries - also many public libraries. Libraries are no longer just musty depositories for books, magazines, and local newspapers. Even the wooden catalogs with their multiple little drawers are replaced or augmented by rows of computers, accompanied by printers that are clicking away, spewing out yards of tractor-fed printouts endlessly.

The research-minded student is in "hot pursuit" of topics being researched for term papers and research reports. The topic searches are expedited by the computers and their CD-ROMS, storing thousands of abstracts and articles from the latest issues of magazines, trade periodicals and professional journals. The most recent issues of periodicals not yet stored on CD-ROMS are available in neatly divided shelves, which can readily be duplicated on copy machines standing by for their feeding of dimes and quarters, or plastic cards for frequent copiers.

Life for the researcher has changed from the old days of stack searches and scribbled notes on 3 x 5 cards or notebooks, later to be copied by typewriters. Now the computer is the word processor, operating at high speeds, for the composer who is shifting material from paragraph to paragraph all over the screen - with speedy printouts in publishable formats suitable for final submission to the demanding professor or editor.

Modem Access Through Computers From Home

Another mind-boggling breakthrough: topic searches can be conducted via telephone modems from dormitories, fraternity or sorority houses, even from the student's own computer at home. This access can be expanded to inter-library loan services through which information may be obtained from libraries all over the country. For the wealthier researchers, data and topic searches can be rapidly activated by modems at all hours of the day and night for subscription fees and real-time charges. This certainly demonstrates self-directed study and research beyond the classroom.

Computer Assisted Instruction

The Laptop Computer has become a portable teaching tool, which can even be pre-programmed for classroom presentations. A projection panel can be attached to an overhead projector that displays an enlargement of the computer screen on the wall. This is much further advanced technology than B.F. Skinner provided as "Programmed Learning." Now the process can be automated for instant projection to assist in teaching/learning.

MEASUREMENT AND EVALUATION

In these departures from the traditional modes of teaching/learning, how can quality of education be optimized? With the introduction of new computer-assisted learning, is the process **dehumanized**? Is personal interaction lost, which heretofore was the source of motivation and inspiration? Is quality of instruction sacrificed for synthetic learning expedited by impersonal technology? These questions must be addressed.

Monitoring Quality of Instruction

The ERAU College of Continuing Education is faced with a real challenge: how can instruction be monitored at remote Air Force Bases all over the country and across the ocean to England and Europe? Currently, the teaching done by Adjunct Instructors is prescribed by regulations and policies, observed and evaluated by Center Academic Advisors, who are oriented, assisted, and monitored by Regional Faculty Advisors - all under the supervision of an Academic Dean - also remotely located at Daytona Beach, Florida. In the case of the European Dean, his surveillance and supervision cover Europe and England.

Evaluators and Measuring Devices

In accordance with Job Descriptions, the **Evaluators** are the Center Directors and the Center Academic Advisors. The measuring devices for effectiveness of instruction currently used include observations by Center and Regional Directors, evaluations by Center Academic Advisors - some of whom are full-time faculty, some part-time adjunct instructors; evaluations of Center Academic Advisors by Regional Advisors (they also do classroom observations). Of course, all of these observations and evaluations are conducted at teaching sites, some local, others all across the country. How valid and reliable these evaluations are must yet be tested.

Student Evaluations of instructors are added to the measuring devices. Because of other college competition, the desire to please the students is very strong. Furthermore, since Adjunct Instructors depend on student evaluations to retain their teaching positions, and their pay, their tendency is to try to please the students. There is some question about the validity and reliability of student evaluations. Of course, they do give a feedback which will quickly identify trouble spots. Student evaluations, therefore, must be heeded; but they are not the ultimate and infallible measure of the effectiveness of instruction.

Those instructors who set high academic standards, requirements for research and reports, and difficult examinations, must also subject themselves to rigid scrutiny from the students and administrators. Of course, most of the academic professionals have been quite successful in this process.

It does appear that the process is relatively successful in reaching its objectives: teaching thousands of students, and granting thousands of degrees. The process has also survived the rigid scrutiny of the Accreditation Agency - The Southern Association of Colleges and Schools. Even more impressive is national recognition award given by the American Association of Adult and Continuing Education to the ERAU College of Continuing Education. Of course, we are all proud of that accomplishment.

Total Quality Assurance of Teaching/Learning

Criteria for **setting higher educational standards** are still far from definitive. It was believed that if **objectives** were clearly listed for all courses in the **Course Outlines**, then measurement/evaluation would be easy - especially if the measurements were identified as **Outcomes Assessment** - as recommended by the **Accreditation Team.**

Thousands of hours were expended in surveys, investigations, analyses, writing results in the recent **UNIVERSITY SELF-STUDY EXERCISE.** Volumes of material were published and circulated. Everyone at Embry-Riddle Aeronautical University was involved in this exhaustive study. Certainly all of the instructors and administrators virtually pledged themselves to ensuring that **improved student outcomes would be guaranteed in all courses on-campus and off-campus throughout the world.**

Of course, the faculty and administration of the ERAU College of Continuing Education were pledged and dedicated to this all-consuming educational effort. Unfortunately and ironically, the majority of the instructors in CCE are part-time Adjunct Instructors with a broad diversity of higher educational qualifications from colleges and universities all over the world - many with Bachelor's and Master's Degrees from Embry-Riddle.

Challenge to Center Academic Advisors and Regional Faculty Advisors

The higher education and instructor training acquired by most Adjunct Instructors need not be restrictive, however, because the jobs of the Academic Advisors and the Regional Faculty Advisors were intended to upgrade, offset, and counteract any deficiencies encountered by Adjunct Faculty. Nevertheless, all members of the CCE administration and staff do not share this optimistic and enlightened view, including many Academic Advisors and some Regional Faculty Advisors.

Academic Standard Bearers - Regional Faculty Advisors

During the past six years a number of full-time Ph.D.s and Ed.D.s were added to the faculty of the College of Continuing Education. Even though their Job Descriptions were specific about their duties, the President, Vice Presidents, Chancellors (titles changed in interim), Deans, and Directors informed them of their three major functions: (1) to teach courses in their disciplines, (2) to meet requirements for academic accreditation, and (3) to establish and maintain academic standards in their respective regions. Of course, they were to serve as advisors to the Regional Directors, Center Directors, and faculty - and other duties as deemed necessary.

The teaching duties were familiar to these Regional Faculty Advisors, as all of them had been active instructors in colleges and universities, and they all had aviation experience which enabled them to bridge the gap from their regular teaching disciplines and the aviation curriculum at ERAU.

The second function was not so clearly defined: how could these former college "professors" establish and maintain academic standards in their regions, including numerous teaching sites at Air Force, Army, or Navy Bases all across the U.S., England, and Europe? These "professors" also comprised an "Advisory Committee" that helped guide the administrators in formulating academic and administrative policies that would ensure high

academic standards in teaching, testing, and advising students. Of course, they would have to work directly with the Adjunct Instructors in maintaining high standards of instruction and course development, and related duties and tasks.

The third and additional functions were graciously accepted - as these professors were complimented by the trust and confidence that had been placed in them by the administration; yet they had no precedents to go by in their previous university faculty roles. They presumed that everyone they worked with would be informed of their expected roles - in developing and maintaining academic standards.

Academic Roles Need Clarification

Every year at the Annual Meeting, there are heated discussions of the roles, duties, and responsibilities of these professorial types, performing their duties, under varied authorities - most of whom perceive these academic roles quite differently. Misunderstandings abound: who supervises whom is still a mystery, whether recognized officially or unofficially. Academic standards are still suffering in this sea of confusion. Attempts to enforce compliance with higher educational standards by decree and regulation have not been successful. There must be a better way.

Developing Standards by Models and Seminars

Drs. Bill Herlehy and Ron Clark have been very successful in designing and promoting "Instructor Training Seminars." They have even opened enrollments to their seminars to teachers and administrators from other local colleges and universities. They are certainly providing model seminars which the rest of us might follow. Better still, their seminars might be restaged and augmented in different regions. They do deserve congratulations for "showing us how it ought to be done." Perhaps "Teaching Oscars" would be appropriate.

Enlightening Role for CCE Administrators

Discussions at the Annual Meetings at Daytona Beach about the respective roles of Center Directors, Regional Directors, Center Academic Advisors, and Regional Faculty Advisors have been exercises in futility. It should be incumbent upon the CCE administration to review the original concepts of the roles these respective directors and advisors, and relate their duties and tasks to the higher educational standards required by the accreditation agency, the Southern Association of Colleges and Schools.

New CCE Organization Structure

During the past two years, after developing and publishing their own Constitution, the members of the CCE Senate - through their various committees - have developed an organization structure, theoretically designed to administer curricula, courses, and degree programs for the College of Continuing Education. Whether this too is a futile exercise, or the CCE structure represents a viable organization ready to operate, remains in question.

Changes and Protocol

Procedures to be followed by CCE with respect to development of curricula, courses of study, and degree programs must be clarified. Too frequently the TELEMAIL reveals new proposals and changes in courses and curricula that affect the entire University. The "Main

Campus" still seems to make changes at will - which reflect university policy. Recent changes proposed by the Daytona Beach MBA/A Department, adding nine credit hours to the MBA/A Degree would be disastrous to CCE enrollments, and certainly reduce revenues for the university. Other course changes made by departments at Daytona Beach would affect course offerings all across the country. Furthermore, little attention is paid to suggestions made by CCE faculty or staff. This is a constant source of frustration.

ONE UNIVERSITY SEEKING STATUS

The "One University Concept" is still a dream. Diversity is regarded as a weakness not a strength. Nevertheless, the College of Continuing Education seems to be making some progress. In the recent evaluations by the Southern Association of Colleges and Schools, and the American Association of Adult and Continuing Education, the ERAU College of Continuing Education gained some favorable national recognition.

Maintaining strict **academic standards** while preserving **academic freedom** is the criterion for measuring institutional effectiveness. The faculty and administration at Embry-Riddle Aeronautical University must find a way to achieve this objective if they are to gain stature and recognition in the "Big League" of higher education.

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