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Educational Objectives, Methods and Objectives: The Historical, Psychological and Philosophical Influences

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EDUCATIONAL OBJECTIVES, METHODS AND EVALUATION

The Historical, Psychological and Philosophical Influences

by

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for

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PREFACE

In this paper, I attempt to condense into a few score pages a topic that has filled many volumes. In order to accomplish this, I have been compelled to set limits upon myself at nearly every turn.

I have, unwillingly, presumed much upon the reader, trusting that his own knowledge of the subject will fill at least the more obvious gaps in specificity. I have several times been forced to offer a mere tantalizing peek into an aspect of my topic before dismissing it altogether to attend to some more pertinent aspect. And too often I have had to allow a definition to suffice where a full explanation with examples would, I know, have been more satisfactory.

I mention this with sorrow but no shame. This paper was not meant to be all-encompassing nor a conclusive treatment of the subject; rather it was merely intended to present an overview of the historical, psychological and philosophical influences upon educational objectives, methods and evaluation. This much I trust it does do.

I must here express my indebtedness to my two richest re-cources: "Development as the Aim of Education," by Kohlberg and Mayer; and Models for Teaching, by Joyce and Weil (consult bib-liography). I quoted lavishly from both and many of the ideas ex-pressed in my paper found their root in ideas expressed in these two sources. Both were invaluable to me and I am grateful.

This paper has been my most ambitious, and laborious, un-dertaking todate. It has also been one of the most profitable learning experiences of my college career and is, therefore, a fitting project to mark the culmination of my undergraduate stud-ies.

Reader, be kind...

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Of the many education-related questions which must be asked and re-asked by educators and those concerned with education, at least three are central. Specifically:

1) What should the goals of education be? (objectives)

2) How can these goals best be realized? (methods)

3) How is the attainment of these goals to be measured? (evaluation)

This paper shall attempt to examine some of the historical, psychological and philosophical factors which influence how one answers the questions just posed.

Objectives

In addressing the first question, it is both useful and necessary to take a backward look to see how the goals of education have been arrived at historically. While many question whether such a thing is prudent, it is nonetheless a fact that throughout history educational goals, for the most part, have been highly society-related. That is to say, education (curriculum and emphasis) have traditionally reflected society's needs and values, rather than society reflecting the ideals and concerns of education.

This was true of education in Ancient Greece. Prior to 500 B.C., Greek education was directed toward three goals: the development of social skills, the development of civic skills, and the development of military skills. It is significant that the first was accomplished at home, the second through civic observation and participation, and only the third in "school."

The reason for this was obvious, however. The primary need at this juncture of Greek history was the conditioning and pre-

paration of youth for war; thus, during this early period, the primary "curriculum" consisted of jumping, running, wrestling, javelin-hurling and discus-throwing, and "schools" were reserved for the teaching of these necessary skills. By 500 B.C., however, war no longer loomed so imminent a threat; so Greek schools began to concentrate more on the previously secondary concerns of intellectual and civic development.

And American education seems to have followed the example of Greek education in allowing society to "dictate" what its educational emphasis will be. For instance, because of the 17th-century Puritan emphasis on religious, practical and moral concerns, the major thrusts of 17th-century education were teaching students to read (so they could read the Bible for themselves), plying them with continuous "moral lessons" (so the Puritan way of life would be perpetuated), and stressing the practice of practical skills like ciphering, spelling and writing (so students would be able to function adequately in the Puritan world).

In the 18th century, of course, Americans were more concerned with philosophical issues like freedom and democracy. Thus, by this time, Thomas Jefferson felt compelled to describe the primary objectives of schools as being "the protection of society from the spectre of tyranny."[1] In other words, since society's largest need (from his perspective) was protection from tyranny, the meeting of this need should be education's largest emphasis.

The 19th century in America witnessed the negative effects of "urban blight," brought on in part by mass exodus from the farm to the city and by massive influxes of European immigrants to urban areas. Three men in particular, William Holmes McGuffey, Horace Mann and Henry Barnard, decided the best and perhaps only way to counteract the negative forces at work in America's cities was to point schools in the direction of (1) emphasizing personal morality and (2) finding solutions for the nation's social problems.

For four generations of students, McGuffey's Eclectic Reader (first published in 1836) became a vessel for deriding the deadly evils of lying, cheating, idleness, drinking, stealing, disobedience to authority and the like, while promoting the virtues of promptness, goodness, honesty, thrift, hard work and staying out of debt. And together, Mann and Barnard promulgated the notion of

the "common school," providing tuition-free education for all students, without the previous distinctions of social class. In the now famous words of Mann's Twelfth Annual Report, education was to be "...the great equalizer of the conditions of men--the balancewheel of the social machinery." Barnard, too, saw the worst abuses in the American social system as due, largely, to the negative impact of class antagonism, which was itself a result of class prejudice.

The "Common School Movement" which evolved from the liberal stance thus assumed by Mann and Barnard and their associates was in direct response to the nation's anxieties about the era's vast population increases and too rapid social change. As such, the education of the day became a mirror image of implicit national attitudes regarding business, morality, class and race.

By the end of the 19th century and into the beginning of the 20th, the goals of education had shifted again, this time dictated by "Big Business." School administrators found themselves attempting to emulate prominent businessmen of the day, like Rockefeller, Carnegie and Morgan. Terms like "efficiency" and "productivity" were becoming (alarmingly to some) standard classroom vernacular. In fact, one of the expressed goals of instruction during this period was to "maximize the efficiency with which all students achieve specified objectives."[2] To say the least, schools, like business, were more and more bureaucratized. Curriculum was organized, planning supervised, teaching methodized, testing standardized and results analyzed. Schools, it seemed, had begun to take of the very character and nature of a "pedagogical factory."

As had been the case in past eras, educational values in this era reflected American values in general. One of the outcomes of this materialistic mindset in education was that, while the perpetuation of ethics and aesthetics was still valued by some, in the main those subjects not directly translatable into some monetary, social or practical "pay-off" had difficulty maintaining their status in the American curriculum. Gains were made in studies like math, social studies, home economics, industrial arts and psychology; whereas subjects like music, art, biology and history were maintained primarily for those students who had

Nor was this trend reversed until the days of the Great Depression. At that time, Americans seemed to suddenly lose their earlier faith in the omniscience of Big Business; and schools, characteristically, reflected this change in attitude.

This marked the beginning of the federal government's influence in schooling. Where business and industry had failed, government must fill the gap and respond to the educational crisis of the day. It is not surprising, thus, that governmental policy and educational policy since 1930 have become almost inextricably entwined.

This is not to say that government has set all educational standards and goals in the decades since the '30's; but it is not difficult to point out the broad, often sweeping, influence government has had upon education since that time. For instance, through the National Defense Training program of 1940 (just prior to WWII), the government prepared for possible military confrontation with other nations by offering students incentives to enter defense-related occupations.

Another example of government's influence upon educational goals was the passage of the National Defense Training Act of 1958 (just subsequent to the launching of Sputnik). American educators had been suddenly shaken out of their educational rocking chairs by loud accusations from the populace that the American curriculum was too "soft." So, curriculum was "hardened"; that is, there was a strident march "back to the basics" in math and science, with a concentration on scientific investigation and discovery. Reading and writing skills were given new emphasis and the study of language on the whole was vastly influenced by progress recently made in the linguistic approach. Foreign languages were suddenly favored subjects. History, on the other hand, lost some of its force among the social sciences (the new emphasis, after all, was on looking forward, not backward); but studies like sociology, anthropology and economics sprouted new growth in both elementary and secondary schools.

However, not even this strong new surge in the emphasis of education was to last indefinitely. Never static for long, society (and, with it, American education) had swung full circle by the mid 60's. In reaction to the materialism of earlier decades, in re-

sponse to the alienation brought on by life in a "cold war" world, and perhaps more significantly, in protest of an immoral (?) war in Southeast Asia, human rights became the larger emphasis of the 60's. This was as true in American schools as in American streets.

Social injustice was decried everywhere, it seemed, and schools were blamed for much of it. Here again, big daddy government stepped in with the passage of the Equal Rights Amendment of 1968 and schools (and other institutions) felt its impact.

Under the duress of extrinsic pressure brought to bear by federal courts, schools began the move toward forced desegregation and integration across lines of social class, geographical location and race. Whether or not the purpose of the move was fully served is one that may yet have to be answered; but the fact remains that schools of the 60's, like schools of previous decades, were not forming society but being formed by it.

If strides have been made in the 70's, and if education in this decade has, in any way, been more leader than follower, it must be in the newfound emphasis on specialized and individualized education. Vocational-technical schools--for everything from diesel mechanics to data processing, from computer programming to airline flight attendant training--are readily available nationwide. Auto-tutorial, independent study and mass adult education programs have mushroomed on college campuses. As never before, adult continuing education is being emphasized. And perhaps not since Rousseau's imaginary pupil, Emile, has so much attention been paid by educators and education to the needs, priorities and choices of the individual.

At least, never before has the individual had such a broad range of educational choices. But it may be that, even so, much of the impetus for making this "broad range of choices" available stems from society's diverse demands on the individual today. It may well be that education is merely being compelled to attempt to keep up with society's enlarged expectations.

Of course, it is still too early to take the educational pulse of the 80's but there is little enough reason to expect this next decade will do more than follow the unbroken pattern of the previous

200 years of American educational history. That is, if education has been the mirror image of society's needs and values for the past 200 years, what reason has one to anticipate a change in the routine now?

Indeed, why? It is one thing to say that society, in the past, has categorically dictated what education must be; quite another to assess the worth of this tradition. Is society really the best barometer for education? Or, adversely, should education shape society rather than merely reflect it?

If yes to the latter question, can education justly be expected to be so far-sighted, creative, innovative and omniscient as to know what future directions all of society should take? Is it even the proper business of education to attempt to shape society?

This final question, of course, takes one back to the original problem: how should the underlying values of American education be arrived at? Naturally, anytime a question is value-related, the issue is likely to be highly controversial, simply because each community or group or individual is likely to have divergent views concerning what is and is not of value in education.

As history has shown, education in any society is inextricably woven around what that particular society holds to be of value. An excellent chart provided by Johanna Lemlech and Merle B. Marks in "The American Teacher: 1776-1976" shows this relationship in the various eras of American education for the past 200 years:

ERA	DOMINANT THEME	DISTINGUISHING FEATURES OF POST ELEMENTARY CURRICULUM
Colonial Period to 1776	Religious	Latin, Greek, Bible, Arithmetic
Revolutionary War to Civil War	Political-Business	Mathematics, History, Geography, English Grammar
Civil War to 1890	Practical-Labor	U.S. History, English Composition and Literature, Modern Languages, Physical Sciences
1890 to Close of World War I	College Preparatory	English Literature, Composition, Grammar and Rhetoric, History and Geography, Biological and Physical

World War I to World War II	Mass Education	Social Studies, English, Science, Foreign Languages, Mathematics, Industrial Arts, Vocational Education, Business Education, Home Economics, Arts, Music, Health and Safety
Close of World War II to Bicentennial Year	Comprehensive	Consumer Education, Career Education, World of Work, Ethnic Studies, and Human Relations[3]

So, then, it goes without saying that a society will teach what it values, just as it will not teach what it does not value. For instance, an atheistic nation is little likely to include Bible studies in its daily curriculum; whereas a parochial school would make Bible studies a major part, if not the focal point, of its curriculum. Based on inferences drawn from this observation, the next consideration must be what primary "values" exist in contemporary American education.

In a paper entitled "Development as the Aim of Education," Lawrence Kohlberg and Rochelle Mayer of Harvard University deal with the varying values of what they see as the three major educational ideologies in contemporary American: namely, romanticism, cultural-transmission and progressivism. Their paper goes on to establish the connection between each ideology's values and the strategies of each for defining their objectives. The strategies described are, respectively, the "bag of virtues," or desirable trait strategy (romantic); the "industrial psychology," or prediction of success strategy (cultural transmission); and the "development-philosophical" strategy (progressivism).*

In the opinion of Kohlberg and Mayer, the latter is the only "theoretical rationale which withstands logical criticism and is consistent with, if not 'proved' by current research findings."[4] As such, it is (in their estimation) the only logical choice as the basis for determining educational objectives.

Before summarily dismissing or embracing any particular educational ideology, however, it is only fair to offer at least a perfunctory discussion of the major beliefs and characteristics of each. For its part, romanticism in educational theory commenced with

Rousseau, was later influenced by Freud and has lately been re-
presented by A. S. Neill in his Summerhill school. Romantics hold
that:

> ...what comes from within the child is the most im-
> portant aspect of development; therefore the peda-
> gogical environment should be permissive enough to
> allow the inner "good" (abilities and social virtues)
> to unfold and the inner "bad" to come under control.[5]

Cultural transmissionists, on the other hand, are deeply rooted
in Western tradition and believe their primary task must be to pass
on to the current generation what has been learned in past genera-
tions. In their view, "...educating consists of transmitting know-
ledge, skills, and social and moral rules of the culture."[6] The be-
havior modification school of thought is a natural subscriber to
and example of the cultural transmissionist ideology.

The third ideology, progressivism, is emerged from what Kohlberg
and Mayer describe as "the pragmatic functional-genetic philosophies
of the late nineteenth and early twentieth centuries."[7] As such,
progressivism is the stepchild of Piaget and the godchild of Dewey.
For those who accept Piaget's notion of development as the progression
from one to the next highest invariant ordered sequential stage, ed-
cational development must be accomplished by supplying for the stu-
dent those conditions which will best enable him to accomplish this
psychical progression. Specifically, the student is confronted with
both cognitive (mental) and affective (emotional) conflicts, the
solutions of which require him to do the work of "thinking." One's
cognitive abilities are developed by the mental exercise of problem-
solving, just as one's biceps are developed through the physical
exercise of weight-lifting.

In a paper of this nature, it is impractical if not impossible
to do more than present a mere outline, or general overview, of the
respective emphases of romantic, cultural-transmission and pro-
gressive ideologies; therefore the foregoing is admittedly brief
and overly simplistic. However, it would be unfair to dismiss the
topic of strategies for defining educational goals without at
least peeking into each ideology's underlying psychological and
philosophical bases. This is so because, naturally, what one be-
lieves about how learning actually takes place (the psychological
component) and what one considers valuable in education (the philo-

sophical component) combine to form the basis for defining educational objectives. Succintly stated, Kohlberg and Mayer regard this psychological/philosophical interrelationship as "...the problem of relating psychological statements about the actual characteristics of children and their development to philosophic statements about desirable characteristics, the problem of relating the natural is to the ethical ought."[8]

Dealing first with the psychological component, each ideology has embraced a separate theory of cognitive and affective development. Romanticism accepts the "maturationist" notion that development occurs by "unfolding through prepatterned stages."[9] This, of course, is somewhat akin to the Freudian concept of stages that are inborn, hereditary, and biologically-linked.

Langer (1969) provides the metaphor of a plant or animal growing as an aid to understanding the maturationist theory. Specifically, just as a flower, for instance, is nourished and stimulated to growth by sun and rain, the mind and emotions are similarly "nourished and stimulated" by their environment. Growth itself is genetically prescribed, in a child as in a flower; but the environment can influence development, particularly by arresting or frustrating it. In other words, too much or too little sun and rain has a physically devastating effect on a flower just as improper environment has a devastating effect (mentally and emotionally) on a child. Built into the value system of any maturationist, therefore, is provision for the "natural" growth of the student.

The metaphor for cultural-transmissionists, on the other hand, is that of the machine. They view the "output" (behavior) of the organism as a natural response to the "input" (information) provided by the environment. By its very nature, this "associationistic-learning" or "environment-contingency" school of thought is closely aligned with the environmentalistic, stimulus-response concept of learning psychology fostered by B. F. Skinner. While Skinner and other "behaviorists" recognize the impact of heredity on learning, they emphasize environment as the most significant factor.

In contrast to the romantic belief in mental structures based on innate patterning, associationists see "both specific concepts and general cognitive structures as reflections of structures that

exist outside the child in the physical and social world."[10] Implicit in this educational ideology's psychological basis is the belief that not only can a student's mental and social behavior be externally shaped, but, indeed, it must be the business of education to do exactly that. In accordance with this belief, educational objectives for the cultural-transmissionist must include the provision of an environment that will both foster and produce mental and social behavior acceptable to and compatible with society.

The metaphor for progressivist psychological theory (sometimes referred to as "cognitive-developmental" or "interactionist") is perhaps not a metaphor at all. Rather, the student is perceived to be neither plant nor machine, but "philosopher or...scientist-poet."[11] The psychological foundation for the interactionist is the work of Jean Piaget and his theories of cognitive development.

Briefly, Piaget recognizes four unique stages: sensorimotor (birth to 2 years), pre-operational (3-6 years), concrete-operational (6-12 years) and formal operational (12 and up). These stages are invariant, ordered and sequential; in other words they are the same for everyone, one progresses logically from one stage to the next higher, and one may not skip stages in progression. Fully accepting Piaget's theories of development through this series of structural-hierarchical stages, interactionists believe structural "change" (or "transformation," or "progression") is the psychological factor which must be manipulated for learning to occur. In establishing their objectives, allowance for such "manipulation" must be made.

Before departing from the topic of psychology as a basis for educational objectives, it should be stated that progressivism is sometimes viewed as a logical compromise between romanticism and cultural-transmission. As Kohlberg and Mayer point out:

> Discarding the dichotomy between maturation and environ-
> mentally determined learning, Piaget and Dewey claim
> that mature thought emerges through a process of develop-
> ment that is neither biological maturation nor direct
> learning, but rather a reorganization of psychological
> structures resulting from organism-environment inter-
> actions.[12]

The philosophical component, as previously stated, also plays a large part in determining goals in education. These philosophical considerations must be subdivided into the epistemological concerns (what is education?) and the ethical concerns (what is good in

Epistemologically, romanticism sees knowledge as being highly "self-related"; specifically, self-awareness and self-insight. Cultural-transmissionists, on the other hand, hold a much more "objective" view of knowledge; that is, they "stress knowledge... which can be pointed to in sense-experience and measurement and which can be culturally shared and tested."[13] In contrast to both, progressivism equates knowledge with "...an equilibrated or re-solved relationship between an inquiring human actor and a pro-blematic situation."[14] The key word here must be "relationship," as knowledge, for progressivists, is not ultimately the experience the learner has but the relationship between experience and situation.

On this philosophical basis, romanticism emphasizes the intern-al (states) in establishing its goals; whereas cultural-transmissionists emphasize the external (behavior). Progressivism, as might logical-ly be expected, prefers to integrate both. That is:

It takes inner experience seriously by attempting to ob-serve thought process rather than language behavior and by observing valuing processes rather than rein-forced behavior.[15]

While there are obvious and perhaps irreconcilable epistemo-logical differences between ideologies, it is upon the introduction of the ethical side of the philosophical problem that tempers erupt soonest and unbreachable chasms yawn widest. Actually, this is un-derstandably so, because to provide answers to ethical questions in education, the assignment of values is required; and values vary widely from ideology to ideology, from culture to culture, even from individual to individual.

For their part, romantics choose to think of themselves as "humanitarian" where educational values are concerned. That is, the student is allowed to determine his own standards of conduct and values and it is merely for the educator to simultaneously respect and not interfere with the student's ethical choices. While some question the practicality of this and others question the pru-dence of it, romantics steadfastly hold that a child (or, indeed, any human) has the intrinsic right to answer the ethical question for himself, without the imposition of societal or cultural values to sway him in his decisions. Pressed to describe his own values, however, the romantic educator might reply in general terms, like

"freedom for the individual," or "mental health," or "happiness," or possibly "growth."

The ethical basis for cultural-transmissionists is social relativity. Values are seen to be both extremely arbitrary and highly relative to the individual group, society or culture from which they are derived. Neither arbitrariness nor relativity particularly disturbs the cultural-transmissionist, however. As Kohlberg and Mayer remark, the cultural-transmissionist approach essentially says: "Since values are relative and arbitrary, we might as well take the given values of a society as our starting point and advocate 'adjustment' to the culture or achievement in it as the educational end."[16] Indeed, Skinner and others carry the idea of social relativity even further, to embrace the notion that values are "relative to, and based upon, the standards of a particular culture and cannot be questioned or further justified."[17] The specific value of cultural-transmissionists, then, is "cultural survival"; and, to the cultural-transmissionist, the question some might wish to ask--"why should this or that culture survive?"--is superfluous, unworthy of notice and undeserving of reply.

The third ideology, progressivism, derives its values from ethical liberalism. Progressivism is ethically pragmatic and its values highly related to nature and intelligence. Specifically, those values have been categorized and expressed thus:

1) such interactive principles of conduct as intrinsic and instrumental and personal and social values;

2) a philosophy of art that stresses rhythm of esthetic expression between doing or mediate phase of experience and the undergoing or immediate phase;

3) the supreme value of democracy both as critique of shortcomings of our culture and as norm of the possibilities for growing and sharing richly in the creative opportunities of natural and cultural life.[18]

Like the romantic, the progressive is much concerned with the "freedom" of the child and with the child's right to choose; but the progressive does not view it educationally criminal for the educator to assume an ethical stance of his own, so long as the student is ultimately allowed a "democratic" free choice in deciding what values he will himself embrace. Like the cultural-transmissionist,

the progressivist is anxious to preserve and perpetuate the worthy
values of the culture; but the progressivist does not choose to
accomplish this through the highly structured, highly regimented
"indoctrination" tactics often employed by cultural-transmissionists.
Rather, progressivism provides for communication to the student of
ethical principles (like democracy, for instance) through methods
based on scientific reflection and inquiry. The student is thus
naturally stimulated (both intellectually and morally) along the
path to Piaget's highest stage of logical reasoning, formal opera-
tions. The attainment of this stage is progressivism's ultimate
value.

With this essential foundation laid, it is now possible to
return, as promised, to a discussion of the actual objective-defining
strategies of each of the three prevalent educational ideologies.
To reiterate, the strategies are:

> bag of virtues, or desirable trait (romantic)
> industrial psychology, or prediction of success (cultural
>   transmission)
> developmental-philosophical (progressive)

Kohlberg and Mayer define romanticism's "bag of virtues" as
"a set of traits characterizing an ideal healthy or fully-functioning
personality."[19] The allure of such a strategy is obvious. Who would
dare presume to argue with the fostering of traits like "pride,"
"honesty," "independence," "responsibility," etc., as the aim of
education? The problem with this approach arises, of course, when
one considers just how vague and inspecific such a list of "virtues"
really is. As one text notes:

> Although the notion of teaching virtues such as honesty
> or integrity may arouse little controversy, the vague
> consensus on the goodness of these qualities may conceal
> some disagreement over their definitions. What is one
> man's "determination" may be another man's "stubbornness";
> what is one man's "honesty in expressing true feelings"
> may be another man's "insensitivity to the feelings of
> others." The activities of student protestors may be seen
> as exhibiting the virtues of altruism, idealism, awareness,
> and courage--or the vices of irresponsibility, immaturity,
> petulance and disrespect.[20]

The second approach defines its objectives in terms of the
prediction of later success and evaluates the success of its methods
in terms of the realization of its ends. Short-term, the cultural-

transmissionist aims for specific standards of learning and behavior in school; long-term he aims for education that allows students the greatest chance of eventual "success" within the existing social system.

Naturally, this strategy relies very heavily on evaluation, particularly the evaluation provided by achievement testing. Kohlberg and Mayer see two basic problems intrinsic therein. 1) "Unless a predictor of later achievement or adjustment is also a causal determinant of it, it cannot be used to define educational objectives."[21] That is, they recognize a higher correlation between arbitrary concerns like IQ and social class and later achievement scores than they do between early and later achievement scores. A "bright" child, in their view, may learn in school better but this, in itself, does not necessarily make the child brighter or indicate that he will continue to learn material faster. And 2) "Achievement tests...fail to predict to success in later life; in fact, longitudinal studies indicate that school achievement predicts to nothing of value other than itself."[22] If it is true, as studies seem to indicate (Kohlberg, LaCrosse and Ricks, 1971), that dropouts and students with poor grades in high school and college do essentially no worse in terms of future job success than graduates and students with better grades, then achievement tests have not performed even their most basic task--that of predicting future success--and are as much as or worse than useless.

In defining their objectives, progressivists follow a developmental-philosophic strategy. They reject the notion that what comes later is, of necessity, better and attempt to adjudicate the twin considerations of internal standards of adequacy and the nature of the developmental process itself. The validity of a belief in the existence of "internal standards of adequacy" is indicated by "studies which show that the child prefers thinking at the next higher moral or logical stage to thinking at his own stage (or at lower stages) (Rest, 1973), and that he moves in that direction under normal conditions of stimulation."[23]

Fully accepting the validity of Piaget's theory of developmental stages, progressivists see their primary task as being the provision of the educational opportunity for students to develop along lines

which lead to greater "differentiation, integration, and adaptation." Or:

> Cognitive-development psychological theory postulates that movement through a sequential progression represents movement from a less adequate psychological state to a more adequate psychological state.[24]

This, then, is the historical, psychological and philosophical foundation on which modern American educators base their educational objectives and these, as briefly described above, are their objectives. How educators set about to accomplish their objectives, once determined, must be the second major concern of this paper.

Methods

The determination of educational methods to be used, while of a more tangible nature than the determination of educational objectives, is still somewhat subjective. Methods, like objectives, have their basis in history, psychology and philosophy. The historical aspect will be discussed at some length in the next paragraphs; the psychological and philosophical aspects will be discussed in relation to specific teaching models.

Historically, the traditional methodology of America's earliest education (late 1700's-early 1800's) was "old-fashioned, routine, dogmatic, precise and formal"[25]--in a word, confining. Order and regimentation were the rule, not the exception; seating was fixed and unchanging, and the teacher's most dependable "motivating device" was likely to be something cut from a hickory tree. Rote memorization, written and oral drills, recitation and copy exercises took up most of the student's time during school hours; and "homework" filled many of his hours after school. As for the teacher, he or she was expected to conduct himself or herself in a highly disciplined, brisk and formal manner. Naturally, most classroom lectures and activities took on those same characteristics.

During the middle 1800's, schools did begin to change somewhat with the changing temper of the times. What change did come, however, came slowly and laboriously. Drill, memorization and recitation were still being relied upon heavily in the classroom. Additionally, students learned arithmetic by rule; grammar was learned through the diagramming of sentences; spelling bees and reading contests were common in the average classroom.

However, progress was being made through the innovative leadership and educational imagination of men like Cyrus Peirce. He introduced role-playing as part of teacher education and, at the Massachusetts normal school where he was principal, he gave a weekly lecture on the art of teaching. He had very progressive ideas on what teaching and teachers should be and do and helped lift teaching out of its place near the bottom of the "professional heap" to a place of some status much nearer the top. He wrote to his friend Henry Barnard:

> It would be my aim to make better teachers for the common schools...teachers who would understand and do their business better: teachers who should know more of the nature of children, of youthful developments, more of the subjects to be taught, and more of the true methods of teaching; who would teach more philosophically, more in harmony with the natural development of the young mind, with a truer regard to the order and connection in which the different branches of knowledge should be presented to it, and, of course, more successfully.[26]

The four strategies used to accomplish these aims at the normal school were: lectures, modeling of appropriate teaching procedures, peer teaching, and teaching in the model school. It was largely the innovative thinking of Peirce and Mann and others like them that brought about the "educational awakening" of the years between 1820 and 1860.

This spirit of change did not extend to all American schools, of course. There were loud complaints from many quarters during the period ending with the Civil War that schools were providing only superficial education. Now-retired teacher D. S. Domer, in recalling his first classroom experience, relates that school each day opened with Bible reading, the Lord's Prayer and singing. The beginners were first; then arithmetic, reading, elementary and advanced grammer, geography, history, physiology and three or four spelling classes daily. Domer recalls: "The beginners recited three or four times a day. Altogether thirty-three classes were heard in about 310 minutes, an average of less than ten minutes to each."[27]

It was at about this period that those concerned about education began to seriously question whether a large part of the problem students had in learning might not be related to the problems teachers had in teaching. To this point in history, there had been

little if any theoretical and pedagogical preparation for teachers and what most teachers learned of methodology came while "under fire" in the "Bootstrap School of Self-Help" --through common-sense, trial-and-error, and oftentimes by sheer accident and painful experience.

Often, too, the experience was equally painful for students. Not strangely, therefore, in this era (early 1900's) of child labor and inhumane factory conditions, many children actually preferred working in the factories to going to school. Helen Todd, a Chicago factory inspector, recalls a conversation she had with several child laborers in an attic cane factory. She herself was almost overcome with the heat and fumes.

> "How can you stand it here, children?"...Why don't you little girls go to school?"

> "School!" cried one who had given her name as Tillie Isakowsky, aged fourteen years and three months, shaking her head until her red bows trembled. "School is de fiercest t'ing youse kin come up against. Factories ain't no cinch, but schools is worst."[28]

Fortunately, help was on its way. In 1904, Dewey published an article in which he advocated a five-point teacher preparation program:

--The teacher candidate should have scholastic attainments.

--The teacher candidate should have a period of observation to facilitate the teacher candidate's ability to perceive psychological development and reflect upon the educational program of a school as a whole.

--The teacher candidate should "assist" the regular teacher to transcend theoretical and psychological insight with practical management techniques.

--The teacher candidate should practice teach in a regular school (not a model school). The candidate should be responsible for the consecutive development of a subject field. Depth in one field vs. practice in a number of subjects is desired.

--The teacher should have a period of probationary teaching to weed out persons unfit for the profession.[29]

Though progress was laborious at first, instructional methods

did move forward. Teachers began to be more adept at skills like asking sequential questions in order to help their students develop thinking abilities. As much as possible, teachers began to prepare in advance for each lesson and focus on the "object teaching" of "practical experiences." This was the beginning of emancipation from the textbook for many teachers. Motivation techniques were also studied and employed in the classroom to help keep students active and interested. In addition, teachers were influenced by the Pestalozzian notion that teaching should be done with "love, patience and understanding" and learning should be from "objects and firsthand experience--not from abstractions and words."[30] From being primarily misfits and moonlighters earlier in American history, teachers had now come to be professionals trained in the nuances of pedagogy.

Since the early and mid-1900's, methodology has continued to be less routine, less dogmatic, less formal. Educational ends are specific, but means are not static. Learning is more and more student-centered; and teachers are seeing themselves more as "facilitators" than "instructors." Memory drill and mental discipline are not extinct but in the shadows, and the contemporary emphasis is on problem-solving, demonstrations and projects conducive to student involvement.

This burst of energy in the area of methodology has naturally produced in recent years texts devoting themselves entirely to the subject. One of the most excellent, perhaps, is Models for Teaching, written by Bruce Joyce and Marsha Weil. These authors divide their topic into four major categories, each having one or several representative subcategories. They are:

SOURCE   MODEL

Social Interaction-------Group Investigation*
                         Jurisprudential
                         Social Inquiry
                         Laboratory
Information Processing---Concept Attainment
                         Inductive
                         Inquiry Training
                         Biological Science Inquiry
                         Advance Organizer*
                         Developmental
Personal-----------------Non-Directive Teaching
                         Classroom Meeting*

Synectics
Awareness Training
Behavior Modification-----Operant Conditioning*

While it is important for a prospective teacher to be familiar
with the various teaching models at his or her disposal, it is ob-
viously beyond the scope of this project to deal individually or
at any length with each. Therefore, this paper shall discuss only
one model from each source category and elucidate it by applying
it to a typical classroom situation.

The first is group-investigation, from the social interaction
category. The major theorists of this model are Herbert Thelen and
John Dewey, and, as might be expected, the model itself is "Progressive"
in bent. Progressives have, since their inception with Dewey in the
early 1900's, held the philosophy that schools should be the models
of an ideal society, and that education's largest role should be
that of producing reflective thinkers--problem-solvers, able to im-
prove society while preserving their own uniqueness and individualism.

Of course, as the progressive rationale goes, the perpetuation
of the democratic process and the consequent "improvement" of soci-
ety must be accomplished through "social interaction." For worth-
while social interaction to occur, individuals must be aware of and
attuned to the dynamics of groups--how groups reflect and affect
individual responses, for instance. Then, and only then, can "in-
terpersonal flexibility and the ability to respond to change...be
increased and the possibilities for effective social membership
enhanced."31

The group-investigation model accomplishes this objective in
six phases, as outlined by Joyce and Weil:

Phase One--Encounter with a puzzling situation (planned
or unplanned)

Phase Two--Exploration of reactions to the situation

Phase Three--Formulate study task. Organize for
study (problem definition, role, as-
signments, etc.)

Phase Four--Independent and group study

Phase Five--Analysis of progress and process

Phase Six--Recyling of activity32

The implementation of the phases of the model in the classroom
setting might be thus:

> Phase One--The teacher has chosen to discuss a recent magazine
> article dealing with "street people"--those thou-
> sands of individuals in New York and other massive
> American cities who have no home except the street,
> no friends except their own kind, no food or clothes
> except what they find in garbage cans and alleys,
> and no income except what they beg. They do not work,
> do not collect welfare, and are angered by cameras,
> reporters and "do-gooders." The interest created by
> learning that such people actually exist in so affluent
> a society as America's and the fascination that some
> humans could actually choose such an existence will
> probably provide motivation enough for the inquiry
> process to begin.
>
> In order to acquaint the students with the
> topic, the teacher should obtain magazine pictures
> and articles for their perusal and review. (The pro-
> blem must take on "reality" for the students if they
> are to be expected to inquire into it and its solu-
> tion.) Also, it might be well for the teacher to
> form a circular seating arrangement with her students
> for the discussion. Not only does this facilitate
> review and discussion of the reference articles the
> teacher has provided, but it also lends an aura of
> interpersonal "unity" to the group--an absolutely
> essential element if the model is to do its job
> properly.

Phase Two--Here the teacher must not be instructor, but facili-
> tator. The teacher might ask for the students to
> express their reactions to the topic.

Phase Three--During this phase of the process, it is necessary
> to decide what aspect of the problem this class
> will focus its attentions on--the reasons why the
> problem exists, for instance. Several study ques-
> tions might be proposed (hopefully by the students
> themselves): Do street people exist exclusively

in large, urban population centers and, if so,
why? Why would any human actually choose such a
subhuman existence for himself or herself--or is
it really a choice, after all? What financial,
psychological, social, emotional or other factors
might be involved in such a choice? Is the existence
of street people a "blight" on society? Is society
itself responsible? What, if any, are the limi-
tations of society's responsibility to such people?
Do and should street people have the right to choose
such an existence? (etc.)

The group might be divided into committees
for the discussion of the problem and the possible
answers to the questions posed. As a further as-
signment for each student, to compel him to focus
on the problem's scope and implication, the teach-
er might instruct the members of the class to go
home and make a list of things they would have to
give up if they were to choose to become street
people. (no home to "go home to," no family, no
telephone calls from friends, no mail, no eating
out or entertainment, no TV, no closetful of clothes
to change into at will, no warm meals or bathing
and bathroom facilities, etc.) Here, again, the
problem is being made "real" to the students.

Phase Four--Time must be given in class for the "committees"
to discuss the questions for which they are re-
sponsible, so a report can be made to the entire
class later. A "captain" might be assigned to di-
rect the individual discussion group, and a "sec-
retary" appointed to keep a written record of points
discussed and conclusions arrived at. The role of
the teacher, here again, should be that of facili-
tator, perhaps going from group to group, providing
encouragement or prompting more specific discussion.

Phase Five--After the alloted time has elapsed, all groups should
re-form the larger circle and each captain report
the findings of his committee. Reaction from the en-

tire class would be elicited thereafter and the
class as a whole might take a consensus of agree-
ment on whether or not the questions had been an-
swered adequately, to the satisfaction of the
majority. This, of course, is the democratic
process at work.

Phase Six--Here the teacher might question the students to see
if there is still interest enough in the topic to
pursue it further. If yes, students could this time
be encouraged to regroup for discussion of possible
solutions to the problem. The process would then
begin again.

The ultimate value of any particular methodology, of course,
lies in its collective instructional and nurturant effects. In the
case of the group-investigation model, Joyce and Weil see the in-
structional effects as being "constructionist view of knowledge,"
"disciplined inquiry" and "effective group process and governance";
the nurturant effects as being "respect for dignity of all and com-
mitment to pluralism," "independence as a learner," "commitment to
social inquiry" and "interpersonal warmth and affiliation."

Using any of the other models in the social-interaction group
might have produced the same instructional ends as the group-
investigation model; however, where the instructional effects of
any two models are essentially the same, the prudent instructor
will choose that model with the greater nurturant potential. It
may even be that this model's excellent and unique "nurturant po-
tential" is its chief value.

The second category mentioned by Joyce and Weil is that of
information-processing. The representative chosen for examination
here is David Ausubel's "advance-organizer" model, a deductive
teaching strategy. The model arose out of Ausubel's Theory of
Meaningful Verbal Learning and is primarily limited in application
to the domain of information-processing.

Drawn, Ausubel's theory might be shaped like a pyramid. The
base consists of perceptual data--details, specifics. Ascending,
one passes through varying levels of abstraction to the top, where
the most abstract concepts are to be found. It is important to the
success of the model, however, that progress always proceed from

the top of the pyramid to the bottom, from the most abstract to
the most specific, rather than from the bottom to the top.

The psychological basis for this is Ausubel's belief that
for the best absorption of information, new data must be related
to information (concepts) already available within the organism.
The more highly relatable the new information, the greater the
ratio of information absorbed and retained. Joyce and Weil state
it thus:

> The information-processing system of the human being
> is a set of ideas which provide anchors for new informa-
> tion or ideas as these are received and which provide a
> storehouse when new meanings are acquired. As this infor-
> mation processing system acquires new information and new
> ideas, it reorganizes itself to accommodate to those
> ideas, and thus it is in a perpetual state of change.
> However, new ideas and information can be usefully
> learned and retained only to the extent that they are
> relatable to already available concepts or propositions
> which provide ideational anchors. In other words, al-
> though a new set of ideas can be incorporated into the
> existing cognitive structure and in fact must be so
> incorporated for learning to persist, if new material
> conflicts too strongly with the existing cognitive
> structure or is so unrelated and no linakage is pro-
> vided, the information or ideas may not be absorbed.[33]

To prepare a student for the presentation of new material,
then, Ausubel says one must have an "advance organizer." In
Strategies for Teachers, Information Processing Models in the
Classroom, authors Paul D. Eggen, Donald P. Kauchak and Robert
J. Harder, make several pertinent statements about this device:

> ...an organizing statement called an advance organizer
> presented at the beginning of the lesson acts as a
> connection between the material to be learned and the
> learner's cognitive structure.[34]

> ...an introductory statement called an advance or-
> ganizer...is designed to introduce the material which
> follows and is broad enough to encompass this informa-
> tion.[35]

> An advance organizer is a statement preceding the lesson
> that is designed to help the learner store and retrieve
> material which is learned.[36]

The organizer does its work in two ways: 1) it provides a
link between what is being learned and what the learner already
knows; and 2) it provides for the learner a way to organize new

material to be learned. Specifically, the Strategies text recognizes three categories into which organizers may fall: concept definitions, generalizations, and analogies.

Before offering an example of the organizer at work, it is important to understand two other phrases employed by Ausubel. The first, "progressive differentiation," refers to the process whereby an abstract statement is followed by the "differentiation of content into discrete categories."[37] This implies, again, that information in the human brain is organized by means of a hierarchical structure; that is, the most abstract concepts are the "pegs" on which one "hangs," at varying levels, the more and more highly detailed and specfic data which relate to that concept.

The other phrase Ausubel uses if "integrative reconciliation." This is the process by which one "investigates similarities and differences in the data,"[38] relating and comparing different parts of the hierarchy. This means that new information and ideas successively presented to the learner are consciously and deliberately related by the instructor to what has already been learned. Understanding and retention are thereby aided.

There are two phases in this model, according to Joyce and Weil. Phase One is "presentation of organizer" and Phase Two is "presentation of verbal materials to be learned."[39] Unlike what the instructor does in group-investigation, the teacher here presents in an expository manner the material to be learned; the teaching situation itself is highly structured and controlled by the teacher.

> Phase One--The instructor has decided that the purpose of
> the lesson will be to teach students about para-
> graphs. In organizing a structured overview of
> the material to be covered, the instructor chooses
> to devise an explanatory diagram or other graphic
> aid. (The use of such devices often provides an
> invaluable visual "cue" to the learner. It...enables
> the /ˉlearner7 to fit his'past experience into a
> conceptual frameworth so that a point of contact
> is developed between the /ˉlearner7 and the content."[40])
> An example of one such diagram follows:

Paragraph

1. Definition
2. Purpose
3. Structure
   A. Topic Sentence
   B. Supporting Details
   C. Clincher Sentence
4. Kinds of paragraphs
   A. Descriptive
   B. Explanatory
   C. Narrative
   D. Argumentative

This outline shows how the discussion of paragraphs will be structured and helps "organize" the material for the students.

Phase Two--In this phase, the teacher actually uses the "organizer" as a teaching tool and verbally presents the material to be learned. Following Ausubel's directive for beginning the exposition with the broadest, most abstract concepts, the instructor first provides the definition of "paragraph." From there, she goes on to explain the function of a paragraph--how it helps a reader establish relationships between ideas expressed in writing, how it helps divide pages into readable "chunks" for the reader, etc. Here the exposition begins to take on more specificity than before, point two of Ausubel's directive.

The next point to be covered is the actual structure of paragraphs. A definition, or explanation, of each structural part should be given, followed by actual examples, so that students have a practical experiential acquaintance with the material. It is important that students be allowed sufficient working exposure with the topic, once the conceptual foundation is laid. To accomplish this, the teacher might wish to have students label the various parts of sample paragraphs in order to make sure they have

correctly and sufficiently "anchored" the informa-
tion just presented.

From there, the final point is the discussion
of various kinds of paragraphs. This, too, is high-
ly specific material and should be accompanied by
some examples to solidify the information in the
minds of the learners. It might prove a useful exer-
cise in this regard to have students decide which
among the sample paragraphs provided by the teacher
fall into which category of paragraphs--whether they
are descriptive, explanatory, etc.

This model can be used by anyone wishing to pass on verbal
information for "processing." In the words of Joyce and Weil, the
instructional effects of the advance organizer model are the ab-
sorption of "conceptual structures" and the "meaningful assimila-
tion of information and ideas."[41] (Ausubel himself makes no claims
about the potential nurturant effects of his learning model.) The
model would not, however, be particularly useful in a discovery
learning setting, since the advance organizer itself relies heavily
on a highly structured lesson plan and the expository presentation
of material by the teacher.

Some from the Progressive "faith" would object to the model for
just those two reasons. The objections would arise from an unfortu-
nate extrapolation of Dewey's belief that, to grasp abstractions,
children need a concrete, experiential background of the sort pro-
vided by experimentation, discovery-type projects and similar student-
centered activities. While Dewey originally intended this specific-
ally for application to elementary school practice only, some of
his disciples carried the belief beyond its intended bounds, ra-
tionalizing that expository-teaching/reception-learning should not
be applied even to secondary or adult education. Thus, as Ausubel
and Floyd Robinson remark in School Learning, these disciples of
Dewey "helped perpetuate the seemingly indestructible myth that,
under any and all circumstances, abstractions cannot possibly be
meaningful unless preceded by direct, empirical, discovery experience."[42]
Ausubel rejects this notion, stating, first, that it is often more
"economical" within the classroom to present new material in a more

or less final form; and, second, that reception learning and rote learning need not be synonymous. A carefully planned, logically structured lesson, well presented by an instructor can, in Ausubel's view, be quite as meaningful as any intuitive, discovery learning exercise. Those negatives to be guarded against by a teacher employing receptive methods are:

> ...premature use of purely verbal techniques with cognitively immature pupils; arbitrary presentation of unrelated facts without organizing or explanatory principles; failure to integrate new learning tasks with previously presented materials; and the use of evaluation procedures that merely measure ability to recognize discrete facts or to reproduce ideas in the same words or in the context originally encountered.[43]

By avoiding these pitfalls, an instructor should be able to make the advance organizer teaching model an invaluable asset in any information-processing task.

The third source category into which Joyce and Weil separate their models is that of the "personal sources." The model to be dealt with from this category will be the classroom meeting model, drawn from a stance toward mental health. Therapist William Glasser is its major theorist and Glasser's therapeutic innovation, Reality Therapy, is the model's primary conceptual basis.

Reality Therapy stresses the idea that in order to function at one's peak, academically, socially or otherwise, an individual must both love and be loved. As Glasser states in Reality Therapy, "To either love or to allow ourselves to be loved is not enough; we must do both."[44] Equally important, one must feel worthwhile both to himself and to others. "Together, love and self-worth form the pathways to a successful identity, man's single basis need."[45]

As Glasser sees it, individuals feel they are not worthwhile, in many cases, not because standards are too high (the traditional idea) but because performance is too low. The task Reality Therapy sets, then, is not to lower standards but to raise performance.

This is accomplished by helping the individual to do what is 1) real, 2) responsible and 3) right. "Reality," in this context, is closely akin to relevance; to judge an action to be realistic, one must consider both its immediate and ultimate consequences. "Responsibility" is defined as "the ability to fulfill one's needs, and to do so in a way that does not deprive others of the ability

to fulfill their needs."[46] Doing what is "responsible" helps one
to acquire a sense of self-worth, making him at once more loving
and lovable, thereby fulfilling his innermost needs. "Rightness,"
or morality, within Reality Therapy is based on giving and receiv-
ing and doing what makes the individual feel worthwhile both to
himself and others. It is imperative that a person learn to main-
tain a standard of behavior--a standard acceptable to the person
himself, and one which he sets and evaluates for himself.

On the whole, Reality Therapy does not concern itself with
why something was done in the past but what is being done at pre-
sent. Thus, "in raising...performance Reality Therapy relies not
upon insight or understanding but upon the individual's commitment
to action."[47] This being so, the crucial element within the class-
room must be what Glasser terms "involvement."

Involvement, of necessity, requires that a teacher reject the
traditional convention of remaining emotionally detached from and
objective with her students. Instead, she provides for her students
a richly supportive emotional environment within the classroom
setting. Warmth, openness, honesty are trademarks of the "involved"
teacher. Judgment, when it must come, comes always from the student
and never from the teacher. In this regard, it is important to the
success of the model that students learn that they must bear the
responsibility for and consequences of their behavior.

Students must also be made aware that the teacher genuinely
cares about them, and "accepts" them explicitly. This does not,
however, eliminate the element of discipline, for, as Glasser states,
involvement itself is a combination of love and discipline. "In es-
sence, we gain self-respect through discipline and closeness to
others through love."[48]

The three broad requirements of this model according to Joyce
and Weil are: 1) intense personal involvement; 2) facing reality
and rejecting irresponsible behavior; and 3) learning better ways
to behave. The accomplishment of these requirements within the model
itself is divided into six specific phases: 1) establishing a cli-
mate of involvement; 2) exposing the problem for discussion; 3) making
a personal value judgment; 4) identifying alternative courses of
action; 5) making a commitment; and 6) behavioral follow-up. The

following will be a discussion of the workings of these stages in the classroom of a secondary level remedial reading instructor.

Phase One--Before such a teacher can begin to establish a "climate of involvement" with her students, she must win their confidence and begin with an absolute, unequivocal acceptance of "where they are" academically and personally. She must find a way to let them know that this classroom will operate on a non-judgmental, non-evaluative basis, except for what judgment and evaluation they bring to it themselves.

The teacher with ample time for establishing this kind of climate will be able to find more subtle ways of letting her students know these things. She can begin by learning each student's name, some of his familial and education background and at least one of his or her interests outside of class. She can gradually lift the student's opinion of himself by finding ways to pass on sincere compliments to him. Or she can simply make it a point to greet students individually and by name daily as they enter the classroom.

For the teacher who cannot afford the luxury of taking her time in getting to know her students, it may be necessary to take a less subtle, more forthright approach. For instance, she may have to state outright--warmly, not coldly, and sincerely, not perfunctorily--what the purpose and nature of this class will be. (It is important, of course, that the instructor live up to all the precepts and observe all the rules she sets down for the students, if she is to gain and maintain their trust.)

It might be stated here, too, that perhaps the single greatest asset a remedial instructor can have is enthusiasm. As with any kind of energy, the energy generated by enthusiasm cannot be destroyed or dissiplated; it merely changes form once expended. Ideally in a classroom, particularly in a remedial

classroom, it is passed on from teacher to student and shows up again in improved performance or behavior on the part of the student. Academic and personal improvement are, of course, the foci of both the remedial classroom and of the classroom meeting model.

Phase Two--The act of exposing the problem for discussion may be initiated by either the students or the teacher. If the teacher has properly established a supportive atmosphere in the classroom, an atmosphere properly conducive to student initiative, one of them may well pose the confronting situation or question. If not, the teacher herself may present a suitable topic for discussion. For instance: "What can you do to improve your ability to read?" The aim of the ensuing discussion would be to clarify the question, identify the factors involved and react to the problem.

The teacher might first ask the students to comment on why (or whether) they feel an improved ability to read is important--on the whole and personally, as well. Can a poor reader get as good a job and/or make as much money as a better reader? Are there positive life experiences one is likely to miss out on by being unable to read well? If so, what? If not, why? Is coming to know the simple enjoyment of reading for its own sake an experience worth striving for?

The next part of the discussion might center around the reasons why the students are poor readers. What factors have contributed to each student's inability to read? Physical handicaps--vision; visual perception; eye movements; hearing; auditory perception; general health? Intellectual handicaps--IQ, poor memory; poor vocabulary; inability to conceptualize, follow directions or solve problems? Emotional handicaps--poor or negative self-concept; self-consciousness; anxiety, disorganiza-

tion; sense of social isolation; impulsiveness; instability; short attention span; lack of moti- vation; timidity or aggression; nervousness; apathy; immaturity; withdrawal; hyperaction or hypertension? Language handicaps--underdeveloped or immature language-speaking abilities; dialect? Home handicaps--parental indifference or criticism; poor or no communication with parents and others; poor nutrition; inadequate rest; unstable environ- ment; family moves frequently or speaks nonstandard English; cultural or experiential deprivation; few reading materials available within home; reading as an activity not considered valuable or impor- tant by parents? Educational handicaps--overexposure to educational programs which do not appreciate or accommodate individual differences; rigid curricu- lum and/or social promotion (by age rather than achievement); no practise in development of study skills or content reading skills; insufficient reading experience in school, especially after the sixth grade; inability of teachers to recognize or cope with reading needs of students?*

The third part of the discussion would revolve around the students' reactions to the ideas just posed. How many and which of these handicaps have I been victim of?

Throughout the discussion, of course, the teacher must not point any "accusing fingers" at her students or make sweeping declarations of her own opinions. Evaluation and judgment, again, belong to the students and are the focus of phase three of the model.

Phase Three--Here the teacher attempts to get the students to form their own value judgments relative to the ideas explored in phase two. Can I blame my reading disabilities on external factors and other people or am I in some measure responsible for my own

*These are the specific topics covered in Reading Instruction in the

learning difficulties? If so, in what way and to
what extent?

Phase Four--Having identified the source of their problems,
students now need to begin, with the teacher's
assistance, to form ideas on alternative courses
of action. It is imperative that students recog-
nize a change, an improvement, is really possible
for them. The emotional support lent by the teacher
and the rest of the class should provide a sound
basis for this exciting realization. It might be
a good time here for the teacher to interject the
aims of this classroom for this quarter, semester,
etc., so that students have a clear understanding
of what can be done and what needs to be done.

The teacher should be very specific in this:
"We will learn to read faster and with greater
comprehension so that you will be able to study
better and, subsequently, perform better on tests
in your other classes. We will learn to read in
a manner and at a speed appropriate to what you are
reading. We will learn to read books for our own
enjoyment and pleasure and profit. We will learn
to critically accept or reject what we read on the
basis of its goodness, rightness, appropriateness,
truth, etc. We will learn to read and understand
everyday items like newspapers, magazines, road
signs, maps, product labels, want ads, travel folders,
application blanks, order forms, etc., so we can be
better informed, more independent citizens of our
community and society. We will improve our reading
and critical abilities and thereby improve our-
selves and our opinions of ourselves as a whole."

Phase Five--This is the most critical step if the model is to
work. Here the students, knowing the alternative
courses of action available to them, actually commit
themselves to change and improvement. Students must
not be forced or shamed into some half-hearted, in-
sincere "commitment," and their decision whether to

act or not must be respected; but with strong emotional support from the teacher and the group, such measures should not be necessary.

It is also important to ensure that the students' commitments are lasting ones. To serve this purpose, the act of commitment should be accompanied by some overt act on the part of the students. For instance, they might sign a paper expressing their commitment.

Phase Six--As a follow-up to phase five and to further ensure the ultimate success of the model, the teacher might, first, regularly find an inobtrusive, supportive way to remind the students of their pledges. She might, for instance, periodically refer to the "commitment documents" and review them with the students. Second, she might also provide "feedback" of their progress on a regular basis. Third, the teacher might encourage students to evaluate their own progress. This is important because knowledge of success often perpetuates success and, in terms of the overall objectives of the model, "success" is essential.

For this model to work optimally, several elements must be present. First, the students must know beyond doubt that the teacher is committed to helping them fulfill their commitments. This reassurance that the teacher really cares about their success comes through both in her attitudes and in her actions--or should. Second, the teacher's role in the class is to become involved and interact personally with her students. To accomplish this, she must start with a warm, open personality and be skilled in discussion techniques. Third, she is responsible for guiding the model through its phases and must be equipped to handle her classroom and provide for the academic and personal needs of her students; but she must not lose sight of the fact that the responsibility for the ultimate success of the model lies with the students themselves. Last, the teacher must remain steadfastly non-judgmental where decisions and moral judgments must be made. "While leadership remains with the teacher, moral authority rests with the students."[49]

This model, of course, is applicable in classrooms other than

the purely remedial. It is applicable, in fact, anywhere the need
is for the furtherance of personal functioning. As Joyce and Weil
state:

> The model is specifically designed to help individuals
> understand themselves and take responsibility for their
> own development. This would obviously have latent bene-
> fits for all kinds of social and academic functioning,
> were it to take place.[50]

The effects of this model are generally more nurturant than in-
structional. Instructionally, the model should enhance one's abili-
ty to set goals and evaluate success. Nurturantly, Glasser's Classroom
Meeting model promotes independence, self-direction, openness and
integrativeness. Combined, these nurturant and instructional benefits
in turn nurture academic growth. As Glasser sees it, the single most
important aspect of learning is the "ability to fulfill a commit-
ment to behavioral change"[51]; and, properly done, the use of his
model should fulfill man's three most primary emotional needs--self-
worth, love and identity.

The best representative of the final model source--Behavior
Modification--is B. F. Skinner's Operant Conditioning. The model
is based on Skinner's own Theory of Operant Conditioning, which
outlines the process by which behavior is "shaped" by external for-
ces--that is, how one's actions are conditioned by and often depend-
ent upon one's environment.

For Skinner and those who advocate the principles of behavior
modification as a teaching strategy, the justification of use of the
Operant Conditioning model is their belief that by manipulating a
student's actions, one may increase mental development or, at least,
accelerate it to a degree that would not have been possible without
this manipulation.

The two major operations of operant conditioning are reinforce-
ment and stimulus-control. Reinforcement occurs in consequence of
an act and results in increasing the likelihood of the act reoccur-
ring. Educationally, students can be reinforced with money or other
purchase tokens, recognition, praise, approval, attention, better
grades or merely by knowing they have behaved (responded) correctly.
Whether a reinforcement is positive (something desirable added to
the situation) or negative (something aversive removed from the si-
tuation), the end must be increased likelihood of behavior reoccurrence.

Punishment, on the other hand, is meant to <u>reduce</u> the probability
of a response reoccurring, and may be either the introduction of
aversive stimuli or the removal of some positive element in the
situation. Corporal punishment is one example of this kind of
"reinforcement," as are bad grades, disapproval, etc. Unfortunately,
such behavior modification tactics are used all too often in many
classrooms. It is the belief of behaviorists that, at best, behavior
thus controlled will disappear only temporarily--until the punish-
ment or the student's fear of it disappears; and, at worst, it can
generate escape or defense mechanisms, the desire to retaliate,
or negative feelings like disassociation, alienation and general
anxiety in the student.

Reinforcement of whatever nature, to do its job optimally,
must be appropriately "scheduled." While uninterrupted, continuous
and immediate feedback or reinforcement provides the swiftest ac-
quisition of behavior, research shows reinforcement of a behavior,
once established, should be irregular, variable. The retention of
a learned behavior, if continuously reinforced, is much more likely
to become dependent on that reinforcement than is the case when re-
inforcement is irregular. To illustrate this point, one text pro-
vides the example of a man who has two lighters.

> ...one lights immediately every time (<u>continuous rein-</u>
> <u>forcement</u>), whereas the other must be flicked four or
> five times before it lights (<u>intermittent</u>, or <u>partial</u>
> <u>reinforcement</u>). Next suppose that both lighters stop
> lighting completely.... Which lighter will he give up
> on first? Most likely, he will discard the former
> because it is now functioning differently than his ex-
> pectations for it. But he will probably not consider it
> at all unusual for the first five or six times to fail
> with the second lighter.[52]

The "retention potential" of a behavior, then, is highly re-
lated to one's reinforcement <u>expectations</u>. If extinction, or the
cessation of a learned response, comes about through a complete
lack of reinforcement, then, logically, the less frequently
reinforcement is expected, the less dependent one will be on
it and the more resistant one's behavior will be to extinction
by reason of nonreinforcement.

The second operation in Skinner's theory, as previously men-
tioned, is "stimulus-control." In the classroom, the stimulus is

deliberately manipulated in such a way as to practically ensure the correct responses from the students. Producing this correct response unfailingly is, in fact, the ideal for a behavior modification classroom; so learning materials are structured in such a way as to aid the student in optimally discriminating, or distinguishing between, various stimuli.

Within the general category of "stimulus-control" are two very important subcategories: generalization and discrimination. Generalization is the projection of a response learned in one situation into a situation with, perhaps, highly similar circumstances. For instance, if a child bitten by a German Shepherd were to develop a fear of all other breeds of dogs as well, he is experiencing generalization. On the other hand, if he feared only German Shepherds, this would show discrimination; and if he feared only the particular German Shepherd who had bitten him, this would show even greater discrimination.

Both processes are valuable in the classroom. For instance, a teacher might wish to teach a first-grade class about plants, birds, and animals. She might produce several pictures of each and have the students decide which pictures belonged in which categories. This is at once discrimination and generalization--discrimination between various sets and generalization between objects within a given set.

Cognition, or thinking, as a process is unimportant to Skinner, taken as a whole. One cannot successfully manipulate some broad, sweeping, complex mental process which cannot even be observed; but in Skinner's view, one can analyze and control the component parts of thinking. First, one identifies the particular learning task to be performed; next, analyzes how the process works (isolates its various components); and, finally, provides appropriate stimuli for each component part--stimuli that will eventually ensure the desired terminal behavior from the student.

These stimuli are provided in the form of highly structured, organized and logically sequenced (programmed) instructional materials. The three most essential features of such materials are:

1) an ordered sequence of items, either questions or statements to which the student is asked to respond;

2) the student's response, which may be in the form of

filling in a blank, recalling the answer to a question, selecting from among a series of answers, or solving a problem; and

3) provision for immediate response confirmation sometimes within the program frame itself, but usually in a different location as on the next page in a programmed textbook or in a separate window in a teaching machine.[53]

Behavior modification procedures work in interactive (social) learning situations, as well as in instructional learning situations. Of necessity, while the same general principles and ideas are involved in both settings, the interactive situation is much more spontaneous and varied, and, therefore, more complex and difficult to "program" or control. Reinforcement must be relied on more heavily than stimulus control to accomplish the "shaping" designs of the instructor; and success (establishing the desired terminal behavior) usually takes longer where the task is social rather than instructional.

Regardless of whether the behaviors to be dealt with are academic or nonacademic, however, the Operant Conditioning model works in three phases, as described below:

Phase One--(For the purpose of this paper, only an academic learning situation shall be examined.)

If a freshman English teacher chooses to use behavior modification strategies, she must first present the stimulus to her student. Next she must specify (be very specific about) the form of response required. Then, as the terminal behavior becomes established, she gradually reduces the "prompts" provided.

There are, of course, special programmed instruction texts and study materials available to instructors. Or, with some modification and improvisation, even a traditional text may be transformed into programmed instructional materials.

For instance, the subject for the day's lesson is adjectives. The "ordered sequence of items" essential to programmed instruction might begin with a broad definition of the term "adjective," describ-

ing it in terms of either its function or proper-
ties. As: "An adjective is a word used to modify a
noun or a pronoun."[54] Or: "A word which is inflected
with -er and -est and which is capable of forming
adverbs with -ly and/or nouns with -ness is called
an adjective."[55]

From this beginning, the teacher presents
(orally or in written form--written preferred) a
group of sequentially explanatory statements or
questions to which the student must respond. As:
"Modify means change. If an adjectives modifies
another word, the meaning of that word is _____."
(Here the student is expected to supply the word
"changed." Or: "Bigger and biggest are examples of
_____." (Here the student must supply the word
"adjectives.") The latter question continues: "What
is another example of this type of adjective?" (The
student, of course, provides a word of his own; and
whether or not he is able to supply a correct example
indicates whether or not he has grasped the principle
he is being taught.)

Several general rules will govern the way a
teacher will prepare her structured materials when
employing this model:
1) Steps should "overlap"; that is, each successive
   step should be related to some prior information
   given or some recent "prompt." The student re-
   sponds only to stimuli offered; he is not herein
   expected to make "discoveries" on his own or spon-
   taneously respond to an "empty environment"; that
   is, one which has not been manipulated or in
   which no stimuli has been provided.
2) Steps must be ordered and orderly; that is, each
   must logically follow the other. The student is
   not to be expected to perform some more diffi-
   cult learning task for which he has not been pre-
   pared by a less difficult, prerequisite learning
   task.

3) Steps should be somewhat repetitive; that is, the same statement should be made several times and in several different ways to ensure that each student has sufficient basis for comprehension.

4) Steps should be small enough, particularly at first, to ensure that there will be no gaps in the student's comprehension. A foundation for understanding must be provided in order to reduce the possibility of frustration and/or incorrect terminal responses on the part of the student. In general, for advanced students or after the initial learning foundation has been laid, the size between steps may be increased somewhat.

5) Steps should contain successively fewer prompts, or cues, as the desired terminal behavior begins to be established. While prompts are likely necessary to the initial instruction, students should not be made dependent upon them; rather, as students gain confidence and a broadened background in the subject matter, they must be compelled to apply what they have "learned." Thus, retention is enhanced and response is based on something more than mere rote memorization and repetition.

6) Steps should all provide an opportunity for specific student response; that is, either a question must be answered, or a statement responded to. The form which this response takes (filling in the blanks,) supplying the missing letter(s) or word(s), choosing the right answer(s) or example(s) among several provided, circling or crossing out some item(s), providing example(s) of one's own, etc.) is far less important than that time, space and opportunity are consistently provided for the student's response.

Phase Two--It is within this phase that the student actually

makes his response. As mentioned, it is essential
that active learning and recall (not mere recog-
nition and repetition) take place here. The materi-
als must be prepared in such a way as to ensure
that the learner must "work upon and with" what
he has learned.

To accomplish this, the teacher (still using
her traditional grammar text) may present exercises
to be completed by the student. Such exercises
should be simpler at first; then increasingly dif-
ficult after the student has had time and practice
enough to become sufficiently oriented to his task.

The following are samples of the kinds of exer-
cises which might be used:

Copy the following sentences...and fill in the blanks
with adjectives. Answer the questions: <u>What kind?</u>
<u>Which one? How many?</u> Draw an arrow from each adjective
to the noun or pronoun modified.

1. The _____ car had _____ accessories.
2. _____ cats seem _____.
3. /etc./ 56

Or:

Fill in the blanks as follows: first column, -<u>er</u>
form; second column, -<u>est</u> form; third column, -<u>ly</u>
adverb form; fourth column, -<u>ness</u> noun form. Under-
line those words which are not adjectives by this
test.

	-er	-est	-ly	-ness
1. close				
2. icy				
3. /etc./ 57				

The teacher is responsible for determining the cor-
rectness and acceptability of responses.

Phase Three--In this final phase of Skinner's model, rein-
forcement for correct responses is provided by
the instructor. In particular, the student is
reinforced by feedback of results. This can be
provided either by the teacher or by the materi-
als themselves.

In Skinner's view this reinforcement should

be immediate and continuous; but many who advocate the behavior modification strategy as a whole, disagree with this notion. As was noted previously in this paper, it is incontestable that indefinite schedules of reinforcement ensure the most lasting behavioral changes. From this it may be extrapolated that, when applied within the classroom, the varied reinforcement schedule is most likely to maximize retention. The decision about how to schedule reinforcement in order to obtain the most favorable results within her classroom must rest, ultimately, with the teacher herself; after all, she knows best what she wishes most to accomplish.

As for the effects of this model in the broad, overall sense, all benefits must be instructional, not nurturant. It is intrinsic to the model that all effects will be determined in advance and directly provided for within the workings of the model. While some theorists choose to contend that behavior modification is nurturant in the sense that "nurturing" and "shaping behavior" are equivalents, the model cannot be said to be nurturant in the same sense that other models discussed herein have been nurturant. The nurturant effects of those other models have been incidental, unplanned-for, almost accidental, by-products of the methods used and learning environments created; there is no room for the incidental or accidental in the behavior modification strategy.

For some this would seem a great loss, but advocates of operant conditioning prefer to believe the "loss" is more than compensated for by the instructional scope of the model. To quote Joyce and Weil:

> The model is extremely versatile. It can be directed toward goals in every domain and can be employed by teachers or used to guide the development of instructional materials.[58]

These "domains" may, of course, include the social, the intellectual, and the personal.

Despite its obvious benefits, behavior modification as a source and operant conditioning as a classroom teaching model have stirred

much controversy. Some object that programmed instruction is unsuitable for very abstract or very subjective kinds of studies. Also, in many cases, programs would have to be so lengthy or complex as to be unwieldy and, therefore, impractical for use in the classroom by most classroom teachers. Others object that programmed instruction makes very little or no provision for creativity or discovery learning. The largest objection to behavior modification, however, is a philosophical one. Many view the ideas of "conditioning," "shaping," "environmental manipulation" and "external control" as threatening to individual choice and personal freedom.

Proponents of Skinner's theories, however, see the failings and limitations of the model more as the failings and limitations brought to the model by those who are unskilled in its use. Further, behaviorists do not view conditioning and discovery as mutually exclusive and have devised programmed-instructional materials to specifically promote discovery-type learning. Also, they contend that by having students use self-instructional materials or "teaching machines," a teacher can free herself for the more difficult learning tasks, thereby measurably increasing "efficiency" within the classroom. Too, in this regard, a student using preprogrammed materials can proceed at his own pace, a particular boon for the very quick or very slow student. As for the final controversy, behaviorists are just generally untroubled by charges that controlled instruction and personal freedom are antithetical.

> ...programmed instruction may provide for individual choices--situations in which the student can freely choose from among several programs. Programmed instruction is student-oriented in the sense that he controls his own pace. ...In traditional educational strategies, the teacher grades student; he is at fault; in programmed instruction the student grades the teacher.[59]

Many believe the best use of the behavior modification strategy may be in combination with other strategies. As they see it, where the behavior modification process can work, it may well work better than any alternate model or process. Where it cannot work or where it may not be the most efficient model to use, it should be supplemented with or supplanted by that model which will provide the best instruction.

Perhaps that is the rule which should govern the choice of any model: Determine what the learning objective is (individual develop-

ment, information-processing, etc.); take into account what factors
or conditions must affect one's choice (classroom size, number and
maturity of students, the instructor's own special abilities, han-
dicaps or preferences, the amount of time needed vs. amount of
time available to cover the subject adequately, etc.) then choose
the method which will provide the most/best instruction with the
most/best nurturant effects, if any.

Of course, in order to define "most" and "best," a teacher
must have a means for evaluating the processes at work in her class-
room and the outcomes of those processes. Evaluation, then, must be
this paper's next consideration.

Evaluation

In the 1700's and 1800's in American schools, "evaluation" was
not a major concern, for the most part. Where it did exist, it was
almost sure to be highly subjective, based on the teacher's own
somewhat arbitrary decisions about a student's performance and/or
improvement. As Lemlech and Marks state regarding grading and pro-
motion as late as the 1870's in America:

> ...neither a grading system nor a promotion system ex-
> isted. Students were assigned to a textbook and stayed
> with the text until they completed it and the teacher
> considered the student's performance perfect. Sometimes
> the student would read the same book several years in a
> row to reach perfection.[60]

Then, early in the 1900's, America's "national heroes" were
men like Morgan, Rockefeller and Carnegie, and the main concerns
of education were suddenly the same as those of industry--namely,
efficiency, productivity and usefulness. Perhaps it was inevita-
ble, in keeping with this industrial model of education, that more
specialized, objective methods of educational measurement begin
to emerge.

One of the pioneers in this area was psychologist and educator
Edward L. Thorndike (Teachers College, Columbia University). In
particular, he is remembered for promoting the use of tests (as
opposed to arbitrary "speculation") in evaluating educational
processes.

Testing, particularly IQ testing and student differentiation
by ability, is rooted in the ideals of scientific management and

social efficiency. While such ideals are philosophically controversial, it can scarcely be contested that evaluation and measurement, of both curriculum and students, are necessary parts of education. It is not the purpose of this paper to examine curricular evaluation, except to say that Ronald C. Doll defines it as:

> ...a broad and continuous effort to inquire into the effects of utilizing educational content and process according to clearly defined goals.[61]

Specifically, curricular evaluation asks the questions, what should be taught, to whom, how and when. Evaluation may be formative (prospective--performed while the curricular program is on-going) or summative (retrospective--employed at a predetermined terminal date). Participants in this evaluation process should include faculty, students, school board, administrative staff, citizen advisory committees and professional consultants.

The criteria for curricular evaluation should include a variety of elements, such as:

1) classroom tests--to evaluate the achievement of specific objectives and to give schools a picture of themselves as they stack up against the state, regional or national picture;

2) measurement instruments--to evaluate progress toward student social development, interests and values through the use of checklists, rating scales, inventories, questionnaires, observation, interviews, anecdotal reports, polls and like devices;

3) norm- and criterion-referenced data--the first to evaluate the effect of curriculum based upon local, state and/or national norms and obtained by the use of standardized tests; the second to evaluate the amount and degree of student achievement of specific, prestated learning objectives, accomplished through the use of specially constructed tests.*

Before leaving the topic of curricular evaluation altogether, it should be reiterated that such evaluation is an obvious necessity in American education. Schools--program designers, policy-makers and administrators--are accountable to taxpayers and society at large for the curriculum they prescribe for students. This accountability demands that schools be able to justify (show the success of) their cirricular content, goals and methods. And this "justification,"

*These are items identified and discussed at-length in Introduction

to be satisfactory, must be demonstrable and scientific--not merely arbitrary and subjective. This much is obvious.

Evaluation within the classroom is, however, still a highly controversial issue. Rousseau would have hotly contested the notion that an individual's performance or improvement need be measured; and Rousseau's romantic counterparts today would doubtless agree, at least in part. Others, particularly cultural-transmissionists and proponents of behavior modification, would flatly insist upon measurement. And, of course, there are those who see student testing and grading as necessary to the educational process but who are also aware of the abuses intrinsic to any system of evaluation.

This last stance is that assumed by many, if not most, contemporary educators. It is not enough (so the belief goes) to aver that our educational process works; we must be able to see it work and be able to demonstrate it at work, to the satisfaction of ourselves, students, parents, taxpayers, society and all those concerned with the success of the American educational system. The implication for the classroom is that there must, first, be some criteria for student progress and the meeting of specified educational objectives; and, second, there must be reliable instruments by which to obtain data for measurement against that criteria.

Little enough can be said conclusively about criteria in a paper of this scope and nature. This is because criteria for any curricular program is intimately and inseparably related to that program. Any school or school board adopting an instructional package automatically adopts the standards of performance that are intrinsic to it. In general, these criteria are fully outlined and stated in terms of the level of achievement a student is expected to attain before moving up to the next higher (more complex) unit or set of activities.

In many cases the criteria themselves are arrived at through massive testing of students on local, state and national levels. Norms or averages are calculated from the collective results of this testing, and this becomes the basis for expectations of achievement.

Leaving the area of criteria, it is important to this paper

that those "reliable instruments" previously mentioned be dis-
cussed at some greater length. Instruments, or mediums, of evalu-
ation can fall into one of three general categories:

    1) objective--testing, etc. used to determine performance,
                based on some pre-established standard; or

    2) subjective--observation of amount and degree of improve-
                ment, based on the perceptions of the teacher
                and/or student; or

    3) both

Which method of the three is employed, of course, depends on
what is being measured and what one's objectives are; that is,
the nature of the learning activity itself (cognitive, affective
or psychomotor) and what kind and level of achievement one is at-
tempting to produce. If, for instance, one is conducting a class
requiring the development of motor skills (typing, dancing, gym-
nastics, etc.), it would be highly inappropriate to submit stu-
dents to oral or written examinations, at least exclusively. What
one needs to know, of course, is how well this student can perform;
so a practical demonstration of skill is required. Affectively,
the more subjective medium of observation must be employed more
freely, since evaluation of that which belongs to the affective
domain of learning (personality, for instance) is, by nature,
more inspecific, intangible, arbitrary and relative. (Before this
paper proceeds to the rather lengthy discussion of evaluation with-
in the cognitive domain, it should be stated that, particularly
where one wants a valid overall picture of the student, both the
objective and subjective methods should be applied.)

Where cognitive evaluation is concerned, this, too, can be
either objective or subjective. "Objective" testing refers to the
use of tests which require brief, specific answers which are gen-
erally either "right" or "wrong." "Subjective" testing, on the other
hand, requires a lengthier, more explanatory type answer which it-
self requires a "value-judgment" on the part of the person scoring
it. (These will be discussed more in-depth later.) The choice between
the use of one or the other of these measurement devices must be made
based on the nature of the learning task being examined and the pur-
pose of the examination.

Morris L. Bigge, in <u>Learning Theories for Teachers</u>, identifies three levels of teaching, learning and testing. The level of teaching, the learning task intrinsic to it, and the kind of testing done for it must harmonize with, or be appropriate to, each other. Bigge devised the following formula to help explain his ideas on the subject:

1) <u>Level of Teaching</u>--Memory
   <u>Nature of Learnings</u>--Factual materials
   <u>Nature of Appropriate Tests</u>--Factual essay or short answer completion
   <u>Basis for Appropriateness of Test Items</u>--Recall of retained memories
   <u>Method of Test Evaluation</u>--Check student answers against list prepared at time test is made

2) <u>Level of Teaching</u>--Understanding, insightful
   <u>Nature of Learnings</u>--Understandings, insights, principles, relationships, concepts, generalizations, rules, laws, theories
   <u>Nature of Appropriate Tests</u>--Factual and explanatory essay or short-answer, true-false, selection, or completion
   <u>Basis for Appropriateness of Test Items</u>--Recognition, explanation, or use of understandings, insights, principles, generalizations, rules, laws, or theories
   <u>Method of Test Evaluation</u>--Check student answers against prepared answers, but credit student for "right" answers even though he uses words other than instructor's-- if answers are correct

3) <u>Level of Teaching</u>--Reflection, problem-centered, exploratory
   <u>Nature of Learnings</u>--Purposely acquired understandings, insights, principles, relationships, rules, laws, theories, <u>plus</u> enhanced independent thinking and scientific outlook
   <u>Nature of Appropriate Tests</u>--Reflective, or problem-centered essay
   <u>Basis for Appropriateness of Test Items</u>--Essay questions which are real problems for the students and pertinent to the study having been pursued; real problems involve both generalization and tool-use of ideas
   <u>Method of Test Evaluation</u>--Check answers on basis of criteria agreed upon prior to the test--probably adequacy of pertinent data applied to the solution and harmony of the data, problem, and answer[62]

This very excellent outline needs little further elaboration, though it might be noted that the kinds of testing Bigge advocates are: for memory-level learning, objective; for understanding-level learning, objective/subjective; and for reflection-level learning,

subjective. The next portion of this paper will deal with the necessary qualities of any effective test, the basic differences between objective and subjective tests, some individual properties of both, and the potential advantages and disadvantages implicit in both.

First, any test, to be truly effective must exhibit five qualities:

1) <u>validity</u>--it must measure to a satisfactory degree that which it purports to measure;

2) <u>reliability</u>--it must yield consistent scores (within a standard error of measurement) upon subsequent testings;

3) <u>representativeness</u>--it must test an adequately representative randomly drawn sampling of the entire content in a given course of study;

4) <u>discriminating power</u>--it must be able to sifficiently distinguish between individuals who vary with respect to what is being measured; and

5) <u>feasibility</u>--it must yield significant information; that is, it should diagnose strengths and weaknesses and suggest remedies; it should be appropriate in form and content to those it is testing; cost and amount of time required by the test should be reasonable and not prohibitive; etc.

Thus, by these criteria, objective tests are often more effective.

By objective testing, one implies that no matter who grades the test, the final score will be the same. Multiple-choice, true-false and fill-in-the-blank instruments are examples of objective tests. To many, this very objectivity is their largest value. Though more time-consuming to construct, such tests are easier and less time-consuming to administer. Answers are generally either right or wrong and may, therefore, be checked against a scoring key which has been prepared in advance--obviously a much faster scoring method. Answers are also briefer, so a much more representative sampling of items may be tested for. In addition, it is simpler to tell with an objective test whether the test or any portion of it was too hard or too simple. If, for instance, nearly everyone (lesser as well as better students) got the right answer on some item, then that item

was too easy to have discriminating power and should be either deleted or revised in future testing. The converse holds true; if all or nearly all students miss certain items, those items were likely too hard.

Criticism of the objective test include the accusation that it tests relatively trivial facts and disconnected particles of knowledge and cannot effectively determine the comprehension of concepts, principles, and relationships or the ability to interpret information and apply what has been learned. Further, such tests often encourage and facilitate "guessing" on the part of students. Often, too, students bring to a test individual qualities which may aid or penalize them in a testing situation. For instance, an impulsive, less thoughtful student may arrive at the correct answers through his indisposition to caution or deep-thinking; whereas a more advanced or sophisiticated student may allow his superior understanding of the subtleties involved in the question to draw him to wrong conclusions and wrong answers.

These, among other criticisms, have been levelled against objective testing in recent years. It is obvious, however, that the potential benefits of this kind of testing far outweight its limitations. Too, much of the problem with objective testing is due to the lack of expertise with which it is administered and with which its results are interpreted. As an analogy, if a traffic officer is so poorly trained in the use of radar that he manages to clock a tree at 60 miles an hour, one cannot rationally indict the radar system for the officer's own inadequacies. Neither should one summarily dismiss objective testing on the basis of the fact that sometimes it is used improperly.

Before leaving the topic of objective testing, it should be noted that these tests may be either teacher-devised or standardized. Both have distinct advantages. Teacher-devised tests may well be more reflective of the learning, abilities and backgrounds of her particular students. Standardized tests, on the other hand, ensure comparability of scores, as they set clear standard for administration of the test, give explicit instructions for completion, establish specific testing time limits and delimit the amount and kind of teacher assistance to be allowed, etc. Also, since most

standardized tests have been previously administered to large num-
bers of students, norms and tables for converting raw scores into
percentiles or grade equivalents are often included. Thus, a
teacher may determine where her students are academically in re-
lation to similar students elsewhere in the nation.

Subjective tests, like oral, essay and behavior-rating tests,
require a value judgment on the part of the listener, reader or
observer. Some criticize them on this very basis; but in those situ-
ations where they are applicable, they may well be the only kind of
test which will do. As one text states:

> They are particularly useful (1) where spontaneous recall
> of information and spontaneous generation of hypotheses
> are important aspects of the competencies being measured.
> (for example, formulation of diagnostic hypothesis, dif-
> ferential diagnosis), and (2) in less well-established
> areas of knowledge where there is no single "right answer."
> In addition, they test a student's ability to organize
> ideas critically, and to express himself clearly and con-
> vincingly. Essay-type questions also provide greater scope
> for original and independent thinking, and give some in-
> sight into the cognitive styles, problem-sensitivities,
> and problem-solving strategies for students. On the whole,
> they are better suited than short-answer questions for
> measuring students' grasp of the structure of a disci-
> pline.[63]

The most obvious objection to the subjective test is that it
is "subject" to the private biases of the scorer, and likely to
be dependent on his personal attitudes, opinions, preferences or
moods. That this point is well-made is pointed up by an experi-
ment conducted some years ago by educational researcher J. D. Falls.
He submitted a particular composition to one hundred English teach-
ers and asked them to grade it. The composition was scored 60-64
by 3 teacher; 70-74 by 6; 75-79 by 8; 80-84 by 22; 85-80 by 20;
90-94 by 24; and 95-99 by 17.[64] Perhaps even more significantly,
grading of essays on two separate occasions by the same teacher
has been found to result in sizable discrepancies in the marks
awarded.

Another significant criticism of subjective tests is that,
since answers must be longer, there must be fewer questions. Thus,
the sampling of questions may not be very comprehensive or repre-
sentative. Scoring of long, involved answers is also more labori-
ous and time-consuming for the teacher, whose time is doubtless

already severely limited by the requirements of her job.

Too, subjective tests, like objective tests, tend to favor certain students more than other. In this case, students who "write neatly, excel in the mechanics of English composition (spelling, punctuation, diction, and style), and echo the views and biases of their teachers"[65] are likely to score better than other students.

This by no means indicates that the use of subjective testing should be eliminated, however. As previously stated, there may be no more effective way to determine a student's understanding of some problems or situations or concepts. Also, subjective tests like the essay can reveal much more about a student than merely his knowledge of subject matter.

> ...they enable the teacher to appraise the student's
> ability to express himself clearly in writing, his
> ability to recall and organize relatively large amounts
> of materials, and his ability to evaluate.[66]

And, for their part, oral examinations can enable a teacher to probe more deeply into areas where he is unsure of the student's knowledge or meaning.

As is the case with objective tests, subjective tests can be improved upon by a knowledgeable user. First, one may reduce vagueness and ambiguity in answers by making questions more explicit and/or by lessening their scope. Second, one may substantially decrease subjectivity by substantially increasing (where feasible) the number of people performing the scoring on subjective tests. Third, explicit criteria for grading (substantive content, quality of expression, organization, logic, clarity, fluency, etc.) should be decided upon and specified in advance. And fourth, the "halo effect" can be reduced by grading all question #1's, then all question #2's, etc. instead of grading all questions on one paper before going on to the next paper. In these ways, subjective tests can be more useful and effective parts of any teacher's testing repertoire.

It is at this point, however, that one must face the philosophical issues in testing. Though a test instrument or procedure might be superbly designed and though it might be highly reliable, valid, representative, discriminating and feasible, some would still

ask if the potential abuses of testing as a procedure might not
outweigh any potential benefits.

First, an aptitude test can be beneficial in establishing how
well a person might be expected to perform in a given profession
or at a given job. However, is it not equally possible that such
a test, if not as valid as it should be, could short-sightedly dis-
courage an individual from even attempting some worthwhile pursuit
he might otherwise have chosen? The ultimate question here must be:
is it more psychologically distressing for an individual to fail a
test and be denied entrance to an institution or occupation of his
choice or to be given the liberty to enter that institution or oc-
cupation and chance failing in it? Such a question, of course, can-
not be answered glibly or lightly overlooked.

Second, testing can be a useful means of gathering data to use
in compiling comparative statistics. Yet, one must guard against
the temptation to make broad, sweeping generalizations based on such
test data. Just as one cannot fairly compare unlike objects like
houses and apples, one cannot make judicious comparisons between
groups of students with incompatible social, geographic, economic
or academic backgrounds.

Third, by indicating a student's potential, intelligence tests
and the like can aid a teacher in deciding what and how to teach a
given student. Test results of this kind, however, must not be
"overinterpreted." The danger lies in viewing the results as con-
summately dependable and accurate or indicative of things the tests
were never designed to measure at all. "Labelling" a student, based
on such an invalid interpretation of test results, can be very
damaging to the student and may hinder or even prevent future pro-
gress for him. To quote one text on the subject:

> To label a person by identifying his intellect with
> a number tends to put him in a niche that he may
> never have deserved and might otherwise surpass.
> The interpretation of test results as absolute or
> immutable characteristics is to be avoided at all
> costs.[67]

Fourth, incontestably, testing students over materials they
have studied can positively contribute to retention. This is es-
pecially true if tests are reviewed with students as soon as pos-
sible after results are available. But what of the hapless indi-

vidual who is paralyzed at the mere thought of taking a test? Certainly a teacher can help ease the anxiety for all her students by telling them in advance what the test will cover, what items will be important to study, whether the test will be objective or subjective (so they will know whether to study facts or broad concepts), some of the kinds of questions that will be asked, and perhaps even how many questions there will be. Ideally, the teacher should take into consideration, when drawing conclusions from tests, how well individual students bear up under the additional "strain" and anxiety of test-taking.

Fifth, while testing can provide numerous invaluable services for schools and students alike, the obtaining or use of test results by those for whom the results were not intended is an invasion of the legitimate privacy of the testee. Such data, in most cases, should be made available only to those whom it intimately and directly concerns--teachers, students and parents. Obviously, schools should formulate strict policies governing who has access to such records, under what conditions and for what purposes.

While it may not be strictly categorized as an "abuse," there is another area regarding testing and evaluation which has stirred quite some philosophical controversy. This is the area of "minimal competency" as a basis for promotion in schools. Simply stated, it implies that students would have to "demonstrate" (through testing, actual performance, etc.) a minimum amount of ability in two specified areas: 1) the "basics," like reading, writing and computation; and 2) what might be termed "life-coping" abilities. The necessity for the first is obvious; of the latter, Superintendent William M. Kendrick of Salem, Oregon, states:

> Our society, with its credit cards, installment
> purchasing, high-speed automobiles, and television,
> requires different individual skills than the society
> of the 1920's and 1930's. Today a student needs to be
> able to perform real-life tasks such as: read a news-
> paper, compute gas mileage and interest rates, balance
> a checkbook, make change, know first-aid procedures,
> complete tax forms, understand credit, know the voting
> process, use safe working procedures, write letters for
> employment, and prepare job applications.[68]

The language of most state legislation regarding minimum competency is not nearly so broad nor encompassing as Superintendent Kendrick's, however. A Virginia statute states, rather simplistic-

ally, that students must demonstrate functional literacy, including ability to read, write speak and "work with decimals and percentages to the extent that they can effectively participate in society as consumers."69 While the actual requirements are somewhat more inclusive than this Virginia statute would indicate, they are still sufficiently nebulous as to make actual implementation and assessment a difficult task.

The move toward minimal competency was actually started in the mid-70's when massive numbers of constituents in state after state began to press their legislators for minimum competency laws to ensure that future graduates of American schools would enter society as efficient producers, prudent consumers, informed citizens and capable, employable adults. Florida and California led the nation in the passage of such laws; by June of 1977, ten states had enacted similar legislation; by the end of the year, "some thirty-two states had taken legislative or state board initiatives to institute minimal competency requirements into the schools."70 Some predict that by 1984 all states will have minimum competency rulings.

There are still numerous questions to be answered relative to minimum competency, however. For instance: Who should have the responsibility for deciding what minimum competencies will apply? How should performance standards be established and by whom? Should competencies be state or federally instituted and controlled? How feasible are minimum competencies when one considers that a fast-changing American society will doubtless require a regular overhaul of standards? Does the "silent majority" really favor minimum competency standards? Should minimum competencies be the same for all students? What is to be done with and for students who fall short in minimum competency testing? How heavily can educators rely on minimum competency tests and how will their use and assessment be governed? Will (indeed, should) minimum competencies eliminate the need for "social promotion" of a student along with his peers?

While these are all weighty matters to be considered by legislators, educators and others, the largest question must remain: Is the "minimum" in danger of becoming the "maximum?" Or: "Will the trend eventually produce a 'mediocracy,' in which students will say, 'If that is all I need to know to get a diploma, why try harder? Why try for anything else?'"71 These and all other pertinent

questions must certainly be thoughtfully considered and workable answers provided if the goal of equal opportunity and equal education for all citizens is to continue to be realized by future generations of American students.

In summarizing the importance of the role evaluation plays in the educational process, one might devise three general categories: 1) placement, 2) feedback and 3) reporting. Each must play its part if the very best education is to be made available to all American students.

First, through testing and the use of various measuring instruments, a teacher can discover "where a student is" academically, what atmosphere he learns best in ("controlled" vs. "free"), and where he functions most effectively (in a group or independently.) Armed with this knowledge, a teacher can optimally match a student to an instructional program and learning environment, placing him with his mental peers, and better ensuring that the student will be involved with study on a level that is neither too hard (frustrating) nor too easy (boring) for him.

Second, if a student is to monitor his own learning progress, and if he is to correct his own learning inadequacies, he must have a means for arriving at realistic conclusions about how he is doing. One of the best means for providing the student with this essential feedback is through testing. Knowing what one's performance is in relation to the performance of others, or in relation to the expected level of performance, or in relation to what one's past performance has been, can provide the basis for future progress. There is often a kind of self-perpetuating "energy" to knowing one's performance is superior; just as there may well be a motivating "force" intrinsic to knowing one has fallen somewhere just short of the mark. This kind of energy, this kind of force, facilitates learning progress in a student and also helps the teacher diagnose problems, identify weaknesses and strengths and determine how best to proceed. Additionally, as Wilhelms states (1967):

> In the broader terms of the learner's development
> as a person, it is essential that evaluation help him
> steadily toward a valid and healthy image of himself.
> It is especially important for him to learn about his
> strengths and resources, in a way that genuinely leads
> leads him to incorporate these into his self-concept.

> It is also essential that evaluation should enrich his
> conception of the life-space he has to operate in, by
> expanding his vision of the opportunities and the
> choices that can be open to him and by enriching his
> background perceptions of purposes and values to judge
> by.[72]

And, finally, letter, number or percentage grades, pass-fail
designations and, perhaps more importantly, a teacher's personal
evaluation of student progress as she views it are necessary be-
cause of a school's "accountability" for what its students learn.
Where specific evidence of a student's level of performance or
amount of improvement is needed, complete records of grades,
scores and lucid teacher descriptions provide this "evidence."
These records become particularly important where decisions must
be made about continuing or discontinuing a given curriculum,
adopting or rejecting classroom methods, or "passing" or re-
taining a student within a grade level for a second year. Also,
specifics about a student's performance can be invaluable when
a teacher is in conference with a student's parents about what
the student is being taught, and how, and why. To say the least,
a parent is likely to be dissatisfied with the somewhat nebulous
statement: "Your son seems to be doing about average." Such an
evaluation is inadequate without concrete, qualifying data for
the parent to see and evaluate for himself.

It seems a sad injustice to the scope of the topic to at-
tempt to treat it in so few pages. Yet, it is hoped that what
has filled these pages has provided, if not real insights, at
least an overview of the historical, psychological and philo-
sophical influences upon American education. In the summary which
follows, I attempt to give, very briefly, my own opinions about
what America's educational objectives should be, what classroom
methods might prove most useful in meeting those objectives, and
what forms of evaluation should be implemented to best determine
and assure the success of the American educational system.

Asked to consolidate my own ideas concerning educational objectives, methods and evaluation, I would have to label myself a "progressivist." This I would do unashamedly, as I believe progressivism offers the best compromise between the legitimate needs of the individual and the legitimate needs of society.

Progressivism sees the improvement and preservation of society as a worthy pursuit in education—but it does not advocate the sacrifice of the needs of the individual in order to accomplish this aim. Rather, by confronting the student with practical, everyday, realistic problem-solving experiences in school, progressive educators are preparing him to be an insightful, problem-solving adult and citizen. Progressivism also provides the student practice in group-interaction, which performs at least two vital functions; 1) it helps the student feel less alienated and more involved; and 2) it allows the student insights into the workings of group-interaction, which may well be an invaluable aid to him when he is called upon to interact with others as a member of society.

I do not altogether condemn romantics, since I feel the individual is of great consequence and his needs and desires should be provided for in education. However, I do not believe students can or should be left entirely to themselves to decide what their education will be. This fosters not health, but anarchy, in education as well as in society. Discipline, of the mind as well as the body, may carry with it its own inertia once it is set in motion, but it scarcely comes easily or naturally, and it usually must be fostered. I believe students, particularly the young, can benefit greatly from guidance, direction and the wise counsel of mature, caring educators. I do not see this as an imposition on their right or their freedom. Rather, properly done, it can actually promote the "health" of the individual student by fostering in him a sense of self-worth: "Someone genuinely cares about me; I must be of importance." Students should not be deprived of this.

I also do not altogether condemn the well-meaning cultural-transmissionist for his stance in education. If our society's ideals are in any measure worthy, as I believe they are, what is wrong with using education to help perpetuate them? Perhaps nothing—unless one begins to use the "needs of society" as a blanket justi-

fication for the unnecessary sacrifice of individual freedom. It
is one thing to offer "guidance" to a student, still leaving his
educational options and freedom of choice intact; quite another to
offer him a stale, unmeaningful, impersonal "take-it-or-leave-it
kind of education. To do so is to say to the student, in essense:
"Never mind that what you will learn here is totally irrelevant
to you; this is the only way for us to improve and preserve the
culture intact and our end justifies our means." I believe it is
good to strive for improvement and "achievement," but I also be-
lieve it can be very destructive to divide students into categories
of "Success" and "Failure"--which is the effect the unbridled, im-
prudent use of "industrial psychology" can produce.

What we appear to need most, in my view, is an educational
system capable of ensuring society an educated populace that is
mature and well-rounded, motivated and committed, informed and en-
lightened, able to carry out the democratic ideal, sufficiently
discriminating to perpetuate what is good from the past while sys-
tematically eliminating and replacing what is bad. Too, this edu-
cational system must allow for the unhampered self-fulfillment, self-
enrichment and self-development of the individual within society.
Or, stated more simply, I see the two-fold task lying before educa-
tors as being the provision of a balanced educational program which
will:

    1) allow for the most comprehensive possible development
       of the individual--mentally, socially, morally, emo-
       tionally, spiritually and physically; and

    2) address itself to the existing needs of society,
       while foreseeing tomorrow's needs, thereby helping
       to shape a better society for the future.

As for methods, I believe a teacher should employ whatever
method "works best." What "works best," of course, is highly rela-
tive to the situation and is something which must usually be left
up to the teacher's own judgment. For this reason, a teacher should
be well-acquainted with the various "sources" and "models" availa-
ble to her and should also be skilled in their application within
the classroom.

Certainly, the model, or method, employed must be suited to
the task at hand. One cannot "lecture" students if discovery is re-

quired; "inquiry" must be employed. Neither can one turn students loose in a scientific laboratory and expect them to absorb factual information; this probably requires "expository-teaching/reception-learning." Also, if one is attempting to foster creativity, students need "freedom," not "confinement." And if one wants students to learn to solve problems in a democratic way as a group, then give them a "problem," place them in a setting where the democratic process can operate and let them work with others to find solutions.

I believe too much of any "good thing" in a classroom is just like too much of any good thing anywhere else; it tends to be counter-productive. So a teacher should vary her routine. If the class had rote learning to do yesterday, let them "role-play" today. If the teacher lectured yesterday, let the students discuss today. Learning requires discipline, certainly, but it need not be a dull activity; it is the teacher's responsibility to ensure this.

I personally favor "student-centered" activities, as they get the student directly involved with his own learning process. And while I recognize the potential benefits of behavior modification tactics within the classroom, I believe they must be used judiciously. After all, students are not mere "machines" to be "programmed" at will; they are human beings with special problems and special needs that require special help and special attention. This a "good" teacher must be able and willing to give.

In summary, I believe any teaching method is viable and useful so long as it is used properly, produces the desired effect, is appropriate to the subject matter, relates favorably to the age and maturity of the student and is in keeping with the instructor's own talents for instructing. I consider "immoral" and totally unacceptable any classroom method or procedure which tends to deteriorate a student's positive self-concept or stifle, rather than enhance, his creativity, uniqueness, imagination and valid self-expression.

Where evaluation is concerned, I first recognize the fact that no test can actually measure what a child knows--only what he can demonstrate that he knows. I believe this fact must be taken into consideration if a student is to be fairly evaluated. This can, in my estimation, only be accomplished through a com-

bination of objective/subjective measurement and the personal evaluation of the student by the teacher.

I have discussed heretofore the relative merits and short-comings of both objective and subjective tests, as well as the general need for "formal measurement" within a classroom (for student evaluation) and within the school (for curricular evalu-tion). So I will say here only that "testing" of the sort just described helps provide the student with a sound perspective of "where he is" academically. This, and the fact that test results help a teacher to provide the best possible instruction, is suf-ficient reason to maintain it as a procedure.

However, just knowing where he stands academically may not be all the motivation a student needs for improvement. Likely not. I believe students also need individual encouragement, a fostered sense of accomplishment and the reassurance that their teacher is genuinely concerned about them. For this reason, I feel it ex-tremely important that a student's performance and achievement be explored with him one-to-one, teacher-to-student, on a regular basis during the school year. This particularly applies where there is a special problem to be resolved. Not only does this provide an excellent opportunity for improved student-teacher rapport, but it can be an irreplaceable motivating tool, as well.

The instructor can point out areas where the student is weak and areas where he excels, encouraging him on the one hand and congratulating him on the other. What a large positive impact this can have on his performance in the future scarcely need be discussed. Too, the teacher should use this interview as an oppor-tunity to encourage student self-evaluation and commitment to im-provement.

In summary of all the foregoing, I recognize the fact that I have left questions unanswered and issues unresolved. For this I beg the reader's indulgence. Perhaps, at least, some of the ques-tions and issues were brought into focus and if the reader has in any way been informed or challenged, then I have accomplished my aim.

FOOTNOTES

[1]Nicholas J. Anastasiow, Ph.D. et al., contributing consultants, Educational Psychology, A Contemporary View (Del Mar, California: CRM Brooks, 1973), p. 8.

[2]Ibid., pp. 16-17.

[3]Johanna Lemlech and Merle B. Marks, The American Teacher: 1776-1976 (Bloomington, Indiana: The Phi Delta Kappa Educational Foundation, 1976), p. 33.

[4]Lawrence Kohlberg and Rochelle Mayer, "Development as the Aim of Education," Harvard Educational Review, November 1972, p. 450.

[5]Ibid., p. 451.

[6]Ibid., p. 453.

[7]Ibid., p. 454.

[8]Ibid., p. 450.

[9]Ibid., p. 455.

[10]Ibid., p. 456.

[11]Ibid.

[12]Ibid. pp. 456-457.

[13]Ibid. p. 460.

[14]Ibid.

[15]Ibid., p. 461.

[16]Ibid., p. 465.

[17]Ibid., p. 468.

[18]James A. Johnson et al., Introduction to the Foundations of American Education.4th ed (Boston: Allyn and Bacon, Inc., 1979), p. 345.

[19]Kohlberg, p. 476.

[20]Anastasiow, et al., pp. 123-124.

[21]Kohlberg, p. 484.

[22]Ibid., p. 484.

Footnotes (p. 2)

[23]Ibid., pp. 483-484.

[24]Ibid., p. 483.

[25]Johnson, p. 358.

[26]Lemlech, p. 16.

[27]Ibid., p. 22.

[28]Anastasiow, et al., p. 12.

[29]Lemlech, p. 24.

[30]Johnson, p. 267.

[31]Bruce Joyce and Marsha Weil, Models of Teaching (Englewood Cliffs, New Jersey: Prentice-Hall, Inc., 1972), p. 35.

[32]Ibid., p. 47.

[33]Ibid., p. 167.

[34]Paul D. Eggen, Donald P. Kauchak, and Robert J. Harder, Strategies for Teachers (Englewood Cliffs, New Jersey: Prentice-Hall, Inc., 1979), p. 258.

[35]Ibid., p. 267.

[36]Ibid., p. 277.

[37]Ibid., p. 352.

[38]Ibid.

[39]Joyce, p. 179.

[40]Betty D. Roe, Barbara D. Stoodt, and Paul C. Burns, Reading Instruction in the Secondary School. Revised ed (Chicago: Rand McNally College Publishing Co., 1978), p. 146.

[41]Joyce, p. 178.

[42]David P. Ausubel and Floyd G. Robinson, School Learning, An Introduction to Educational Psychology. (New York: Holt, Reinhart and Winston, Inc., 1969), p. 100.

[43]Ibid., p. 98.

[44]Joyce, p. 223.

[45]Ibid., pp. 223-224.

[46]Ibid. p. 224.

Footnotes (p. 3)

[47] Ibid.

[48] Ibid., p. 225.

[49] Ibid., p. 231.

[50] Ibid.

[51] Ibid., pp. 228-229.

[52] Anastasiow, et al., p. 158.

[53] Joyce, p. 276.

[54] John E. Warriner, Mary Evelyn Whitten, and Francis Griffith, English Grammar and Composition 9 (New York: Harcourt, Brace & World, Inc., 1963), p. 7.

[55] Norman C. Stageberg, An Introductory English Grammar 2nd ed (New York: Holt, Rinehart and Winston, Inc., 1965), p. 209.

[56] Warriner, p. 8.

[57] Stageberg, p. 209.

[58] Joyce, p. 292.

[59] Ibid., 289.

[60] Lemlech, p. 22.

[61] Johnson, p. 436.

[62] Morris L. Bigge, Learning Theories for Teachers (New York: Harper & Row, Publishers, 1969), pp. 326-327.

[63] Ausubel, p. 591.

[64] Ibid., pp. 591-592.

[65] Ibid., p. 591.

[66] Herbert J. Klausmeier and Richard E. Ripple, Learning and Human Abilities, Educational Psychology (New York: Harper & Row, Publishers, 1971), p. 653.

[67] Anastasiow, et al., p. 349.

[68] Ben Brodinsky, Defining the Basics of American Education. (Bloomington, Indiana: The Phi Delta Kappa Educational Foundation, 1977), pp. 19-20.

[69] Brodinsky, p. 19.

Footnotes (p. 4)

[70] Johnson, p. 367.

[71] Brodinsky, p. 20.

[72] Klausmeier, p. 672.

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