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ABSTRACT

Pointing out that teachers and supervisors need to study, analyze, and synthesize diverse issues in the teaching of handwriting, this paper explores several relevant issues. The following issues are discussed: (1) whether handwriting ought to be taught as a separate subject; (2) the conflict between the behaviorism approach--which utilizes precise measurable objectives--and the humanistic approach--which emphasizes that students engage in decision-making to select objectives and learning activities; (3) experimentalism, or the belief that problematic situations in school must relate to life and living in society, as a philosophy of education; (4) the artist approach versus the technician approach to teaching handwriting; (5) self-evaluation versus teacher evaluation of handwriting; (6) the preplanned curriculum--with objectives, learning activities, and appraisal procedures developed by teachers and supervisors--versus the needs approach--which would emphasize diagnostic and remedial work as the involved student reveals specific errors; (7) rewarding proficiency in handwriting through verbal praise, external rewards, and the reward of learning itself; (8) using the word processor in the language arts curriculum; and (9) using a variety of activities to achieve educational objectives. (EL)

HANDWRITING: ISSUES AND PROBLEMS

Marlow Ediger

HANDWRITING: ISSUES AND PROBLEMS

Students need to exhibit legible handwriting. Why? Effective written communication must contain legibility in order to convey content from the sender to the receiver. Ideas in writing are difficult to comprehend when the inherent subject matter contains illegible penmanship.

There are diverse schools of thought emphasizing methods of teaching handwriting. Pros and cons are then in evidence pertaining to objectives, learning activities, and evaluation procedures. Which issues and problems are relevant to consider in the handwriting curriculum?

Separate Subjects Versus Correlation

There are selected specialists in the teaching of handwriting who advocate a separate subjects curriculum. Thus, a separate period of time each day would be set aside for handwriting instruction. Definite sequential objectives are established in implementing each daily lesson plan. Learning activities for pupils to achieve the desired ends are in evidence. Ultimately, learners are appraised to ascertain if objectives have been attained.

Advocates of the separate subjects curriculum believe that learnings from daily lessons in handwriting will transfer to writing experience for students in all curriculum areas. What has been achieved in penmanship is transferable to writing experiences in science, social studies, mathematics, physical education, and the fine arts.

Somewhat toward the other end of the spectrum are educators believing that handwriting needs to be taught as correlated with each academic area whenever writing experiences are being implemented. In the writing of outlines, reports, classroom notes, plays, stories, and summaries, students need to exhibit legible handwriting. Thus, in developing an outline of subject matter containing main divisions, subdivisions, and details, students should

reveal the concept of legibility in handwriting. Specific errors made in handwriting need diagnosis and remediation. Handwriting then is taught as needed and not in emphasizing separate class time for penmanship instruction. Within the confines of students developing outlines, quality handwriting is stressed in proofreading the final written product.

An issue is then in evidence involving teaching handwriting as a separate subject as contrasted with legibility in final written products being emphasized in each curriculum area.

Behaviorism versus Humanism

Behaviorists recommend utilizing precise, measurable objectives in teaching. After handwriting instruction, it can be measured if a student has not achieved the stated objective(s). The objectives are stated prior to teaching and learning. These ends may be developed a year ahead of the time of the implementation in the classroom. The teacher or a committee of teachers may do the writing of these predetermined objectives.

The behaviorally stated objectives need to be arranged in ascending order of difficulty. Each student on an individual basis achieves ordered goals. No student need wait for other learners to catch up with the former. Nor should slower achievers be on a uniform level of attainment with those who achieve at a more rapid rate.

Reinforcement theory is significant in behaviorism as a psychology of learning. The teacher needs to guide students to relate the stumulus (S) with the response (R). The S may be the specific learning activity for the student to participate in. The R is indicated by students revealing what has been learned from the (S) stimulus. To connect the S with the R, success in learning needs to be in evidence. This strengthens the S and the R in S—R theory of learning.

With reinforcement theory, diverse rewards need to be utilized. These include verbal praise, inexpensive prizes, badges, and certificates for outstanding achievement. Learning activities need to be sequential in order that each student experiences continuous progress and success.

S—R theory of learning emphasizes a technology of teaching. The objectives need to be highly precise. Why? Opportunities to learn with learning activities must match in a precise manner with the stated objectives. Evaluation of pupil progress is only in terms of the measurably stated objective(s). A definite method of teaching is then in evidence. A technology of instruction is an end result.

Pertaining to technologies of instruction, McNeil[1] wrote:

> Individually prescribed instruction (IPI) and mastery learning are other examples of curriculum produced by technologists. Instructional objectives, arranged in an assumed hierarchy of tasks, are the keystone of the system, and lesson materials are built around that arrangement. The objectives are the intended outcomes of instruction. Each pupil must master them before going on to the next step in the learning hierarchy. Mastery is indicated by successful responses to criterion-referenced tests matched to the content and behavior specified in the objective. Objectives in the teaching of mathematics, for example, or grouped by topics such as numeration, place value, and subtraction.
>
> Lesson materials are matched with the objectives and allow the pupil to proceed independently with a minimum of teacher direction. The pattern for involving the pupil with the system has three parts.
>
> 1. Finding out what the pupil already knows about the subject. Usually a general placement test is administered to reveal the pupil's general level of achievement. The pupil is also given a pretest to reveal specific deficiencies.
> 2. Giving the pupil self-instructional materials or other carefully designed learning activities. Such activities focus on one of the specific deficiencies previously identified.
> 3. Giving the pupil evaluative measures to determine his or her progress. Such measures help the teacher decide whether to move the pupil ahead to a new task or to provide additional materials or tutoring.

Advocates of the S—R theory of learning stress the following advantages in utilizing their approach in teaching:

1. The teacher can measure if a student has/has not been successful in learning. Behaviorally stated ends are specific and not general.

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[1] John D. McNeil, Curriculum. Boston: Little, Brown and Company, 1985, pages 44 and 45.

The latter kinds of objectives leave much leeway in interpreting if a student is or is not achieving. The teacher needs to be certain that pupils are learning by measuring accomplishment against the stated behavioral objectives.

2. Learning experiences may be selected which have purpose and the inherent purposes are to guide learners in goal attainment. The activities are not in evidence for the sake of having something for pupils to do. Rather, students are to achieve predetermined objectives. Each objective must be worthwhile, relevant, and significant. Thus, quality learning opportunities assist students to attain definite objectives.

3. Evaluation techniques are definite and pinpoint if a learner has or has not measured up to having attained the behaviorally stated objective. Thus, the technique(s) of appraisal are valid. Evaluation is emphasized in terms of a student having achieved objectives. The learning activities selected also pinpointed the precise ends. Therefore, validity is inherent in evaluation. Reliability also increases in the appraisal process, if the involved teachers agree upon if a learner did/did not attain the specific objective. Independent of the teacher or observer involved, the evaluator should be able to ascertain if an objective has or has not been achieved.

Humanism emphasizes students engage in decision-making to select objectives and learning activities. A learner might then choose handwriting activities involving the use of penmanship textbooks. Or, a different choice made may emphasize practicing handwriting skills within functional situations. These practical occasions can involve writing business and friendly letters, announcements, poems, plays and stories. As the need arises within the functional situation, the pupil is provided assistance as needed to achieve legibility in handwriting.

Humanists do not advocate giving physical prizes, badges, and certificates for quality achievement by individual pupils. Operant conditioning is involved when rewards are provided for successful achievement. (The success inherent in learning stresses rewarding the response in S—R theory of learning). Rather, humanism emphasizes the whole person (gestalt) being involved in learning. The late A. H. Maslow advocated meeting needs of the whole person in learning. Dr. Maslow then believed the following needs should be met on the part of students:

1. physiological needs - ample nutrition, rest, shelter, clothing, and water.

2. safety needs - security and lack of want.
3. loving and belonging - being wanted and accepted by others.
4. esteem needs - feeling prized for what can be done well (acknowledgement).
5. self-actualization (becoming the kind of person one desires to become).
6. knowledge needs (desire to learn subject matter and necessary skills).

Miller[2] wrote:

Below are some key assumptions and criteria of humanistic programs:

* Humans have a tendency to realize their positive inner potential. Students are capable of a range of behaviors, and if the right conditions are provided they will move toward higher levels of functioning.
* Individuals have the capacity to direct their own behavior. Although young children need the teacher's assistance, as they mature they are increasingly able to carry out their own learning.
* Values play an essential role in the learning process. It is important that students understand and develop a coherent value system that gives meaning to their lives and provides inner direction to their actions.
* Self-concept is integral to how a student learns and develops. Humanists cite evidence correlating positive self-concept with student learning and achievement. Thus they try to develop a classroom climate and curricula that are conducive to developing a positive self-concept.
* Cognitive, affective, and psychomotor learning are interrelated. Humanistic educators see these aspects of learning as interconnected, and thus cognitive learning is viewed in relation to affective and psychomotor development.
* Teachers should be facilitators of learning. Although at times the teacher may be directive, the main task is to develop a trusting and open classroom climate and then help students achieve their learning goals.
* In the humanistic classroom the students' concerns are accepted as valid content. Although the teacher may not be able to respond to all the concerns, at least he or she can create a climate so that the concerns can be acknowledged.
* Self-evaluation is central to humanistic education. Kirschenbaum states, "Humanistic education tends to move away from teacher controlled evaluation and shift to the student as he learns to evaluate his own progress toward his goals."

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[2]John P. Miller. The Educational Spectrum. New York: Longman Inc. 1983, pages 141 and 142.

Gestalt psychology is highly significant in emphasizing humanism in teaching and learning situations. The needs of the total person must be fulfilled if optimal achievement is to take place.

Gestalt psychology is also inherent in the utilization of learning centers. An ample number of centers and tasks at each center need to be in evidence so that students may sequentially select activities to pursue. Undesirable tasks as perceived by the involved student might then be omitted. A psychological curriculum is in evidence when students individually choose sequential tasks. The following are examples of titles of learning centers which also emphasize handwriting skills:

1. Writing business and friendly letters
2. Writing announcement
3. Writing plays
4. Writing poems
5. Writing stories
6. Writing notes of sympathy
7. Writing thank you notes
8. Writing experience charts
9. Practicing handwriting skills
10. Taking notes.

Based on personal needs and interests, the pupil may sequentially select from any of the above named centers. Each center will have several tasks or learning activities from which students may select.

Experimentalism as a Philosophy of Teaching

Experimentals believe that students solve real problems in school. The problematic situations must relate to life and living in society. The school curriculum then must not be separated from that which exists in society. Committees in society are involved in identifying and solving problems. In school, committees also need to be in evidence.

The handwriting curriculum needs to reflect what is useful in society. Functional situations then need to be in evidence for students. Ideally, the problematic situations should be identified by students. Learners might then perceive purpose in what they identified as being relevant to learn. Which situations existing in society may become relevant for students in handwriting?

1. writing a business letter on school stationery to order free materials relating to a social studies unit being studied.
2. writing a friendly letter to exchange with a friend or mailed to a relative.
3. writing a thank you note for a favor received.
4. writing a sympathy note to a friend who is ill.
5. writing an announcement for parents pertaining to a school function.
6. writing an invitation inviting friends to a birthday party.
7. writing a letter of recognition to a classmate who has achieved in an outstanding manner.

Each of the above named experiences is

(a) functional in society

(b) useful to the involved learner

(c) practical and has utilitarian values.

Pertaining to experimentalism as a philosophy of education, Morris and Pai[3] wrote:

> We must consider also a much more authentic strain of Experimentalist theory: the problem-solving curriculum. The more resolute Experimentalists, since they consider fundamentally wrongheaded the "subject-matter-set-out-to-be-learned" approach to learning, would favor scrapping the whole traditional curriculum. If we are really serious about inducting the young into a "cosmos of process," then working with the old order and compromising with a basically static substantive curriculum will only weaken our efforts and blunt the force of our argument. We must rid ourselves, they say, of the fundamental notion that learning goes on in compartments, that learning is essentially the mastery of preordered materials, organized and systematized into study-able form and set, like so much pastry, before the learner.
>
> Learning is essentially growing. And growing, in Experimentalist language, means the increase of intelligence in the management of life. This in turn means the expansion of reflective thinking and the consequent application of thought to action in the wide reach of affairs we honor with the name "human." If we are to produce growth effectively we must turn the whole learning process, as traditionally conceived, upside down! That is, we must start with the affairs of life, wherever we may meet them, and let those affairs dictate what should be learned and known in order to manage them properly. Hence the entire curriculum will be inverted from subject matter intended to be applied later to life situations to the life situations themselves that provoke the kinds of learning in or between subject-matter areas that intellignet living calls for.

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[3]Van Cleve Morris and Young Pai, Philosophy and the American School. Bostor.: Houghton-Mifflin Company, 1976, pages 91 and 92.

Teaching Handwriting: Art versus Science

A perennial issue involving handwriting instruction pertains to the artist as compared to the technologist concept. If teaching is an art, creative endeavors are highly significant. The teacher then being an artist thinks of unique objectives, learning activities, and evaluation procedures. Previously utilized plans of instruction are no longer useful. New methods of teaching need emphasis to provide for individual differences among learners in handwriting.

The creative teacher does not like the concept of routine in teaching. Nor are the terms drill and practice important. Rather novel means of instruction are stressed in ongoing lessons and units. Students crave variety in activities. The teacher also prefers originality of strategies of teaching. Uniqueness in legibility for pupils to exhibit is important to the teacher as an artist concept. Tiedt[4] in summarizing research wrote the following characteristics of a creative person:

> Because identifying creativity is not easy, we often fail to recognize this type of giftedness. The commonly used IQ test, it has been found, does not indicate creativeness. Although most researchers find a positive correlation between intelligence and creativity, the high scorer on the intelligence test may not score high on tests of creativity. Nor is the student who receives the highest grades necessarily the most creative child.
>
> MacKinnon studied more than 500 famous—writers, architects, composers—who were judged by their peers to be creative. He found that in general these artists had disliked school, did not identify with teachers, and had in many cases dropped out of school.
>
> This study and others which followed resulted in a body of generalizations about the creative person which may prove helpful as we attempt to identify and to understand the creative student. The creative person has been found to possess the following traits:
>
> 1. Nonconformity of ideas, but not necessarily of dress and behavior
> 2. Egotism and feelings of destiny
> 3. Great curiosity, desire to discover the answer
> 4. Sense of humor and playfulness

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[4] Iris M. Tiedt, The Language Arts Handbook. Englewood Cliffs, New Jersey, 1983, page 66.

5. Perserverance on self-started projects
6. Intense emotions, sincerity
7. Tendency to be shy
8. Lack of rigidity

The teacher as a technician concept of instruction advocates predetermining prior to teaching what students will be learning. The objectives then need to be stated precisely and in behavioral terms. A committee of teachers with supervisory guidance needs to select vital ends. The chosen objectives must be arranged from the simple to the complex in ascending order of difficulty.

Next, each teacher selects learning activities for his/her students to attain. The activities must assist students to achieve precisely what is stated in each measurable objective. Only then might a teacher measure to determine if a learner has been successful in goal attainment.

The teacher emphasizing handwriting instruction as a science advocates

1. specific objectives for student attainment.
2. observable. measurable results from each student.
3. objective results from learners independent of who does the evaluating.
4. precise means of diagnosing learner progress as to letter formation, correct spacing of letters and words, proper slant of letters, right proportion of letters, as well as consistent legible slant in the written product.

An issue then exists pertaining to the artist versus the technician approach in the teaching of handwriting.

Self-Evaluation versus Teacher Appraisal

Who should be involved in appraising student achievement? The learner himself/herself might assess personal progress in handwriting. The teacher then needs to guide the learner in self appraisal. Specific or general items for improvement may be identified. Precise items to evaluate include proper letter formation, slant, alignment, proportion of letters, and spacing.

After self diagnosis has been emphasized, the student with teacher leadership may develop lessons and methodology to overcome the identified deficiencies. To overcome weaknesses, the pupil with instructor guidance may work on remedial activities. The activities might include writing business and friendly letters, announcements, poems, plays, stories, as well as thank you letters for favors received.

Toward the other end of the continuum, the teacher largely may appraise student progress in handwriting. The teacher might then diagnose highly specific items. Items such as in manuscript writing, start the lines at the top only and pull downward. For circles or parts of circles in letters, the teacher guides students to write from left to right in formation of the abstract symbols. The fingers are to be utilized in forming the delicate parts of the letters, while the arm is used in moving progressively from left to right.

Myers[5] wrote the following for diagnosing and remediating precise difficulties in handwriting involving the research of Frank Freeman, a specialist in the teaching of handwriting:

1. "The writer should face the desk squarely"—a side position causes spinal curvature.
2. "Both forearms should rest on the desk for approximately three quarters of their length"—if one elbow is unsupported spinal curvature is produced.
3. "The paper should be directly in front of the writer"—the paper on one side of the middle line requires a different adjustment of the two eyes causing eye strain and a twisting of the head and body which produces curvature.
4. "Place the paper with a tilt to the left for right-handers and a tilt to the right for left-handers so that the forearm forms a right angle with the base line of the letters"—this position was found to be more common among good writers than poor writers.
5. "The hand should be held with the palm down"—good writers do not incline the hand with more than a 45 degree slope to the wrist. Poor writers tend to rest the hand on its side. Wrist action produces strain.

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[5]Emma Harrison Myers, The Whys and Hows of Teaching Handwriting. Columbus, Ohio: Zaner Bloser Company, 1963, page 30

6. "The hand should rest upon the third and fourth fingers."
7. "The forefinger should rest lower down on the pen or pencil than the thumb." The end of the thumb should be against the pen or pencil.
8. "The pen or pencil should be grasped loosely, with the fingers moderately curved."
9. "The writing movement should be a combination of arm and fingers; the arm for the forward progress and the fingers for the delicate parts of the letters that the arm muscles are too large and powerful to control."
10. "The writing movement, particularly in the early stages, should be divided into a series of units of movement which are separated by slight pauses. This movement or rhythm is not continuous and uniform in speed.

Planned Curriculum versus Needs in Handwriting

There are educators emphasizing a preplanned curriculum for students. The objectives, learning activities, and appraisal procedures then would be developed by teachers and supervisors, prior to the beginning of a new school year. In achieving a preplanned handwriting course of study, involved teachers and supervisors would attend carefully to the following criteria:

1. quality sequence needs to be in evidence so that each student may gradually move from the easiest to that which is increasingly more difficult.
2. the scope of handwriting experiences would receive careful attention. Thus, breadth of content for learners would assist in attaining legibility in handwriting.
3. essential, core learnings need to be mastered by pupils. A basics curriculum is then in evidence.
4. an appraisal program needs developing which assesses achievement of each student.
5. objectives need to be precise (not general) in handwriting.
6. learning activities should guide students to achieve objectives.
7. adequate stress needs to be placed upon diagnosis and remediation of handwriting errors.
8. one or more reputable handwriting textbooks should provide the majority of experiences for students.
9. transfer of learning needs to be emphasized in that quality in the formal period of time devoted to the teaching of handwriting is utilized in functional situations in writing.
10. a separate period of time needs to be set aside for the teaching of handwriting. Time on task is emphasized for each lesson taught. Definite goals need to be attained by students during the allotted time.

A needs approach in the teaching of handwriting would emphasize diagnostic and remedial work as the involved student reveals specific errors. For example, if a student is writing a business letter with teacher guidance to order free and expensive materials for a science or social studies unit, he/she may need help in forming the upper case letter "B" correctly. Or, the student has incorrect proportion of the upper case "C" and the lower case "c". The learner with the assistance of the teacher would then diagnose and work on overcoming the difficulty.

In a needs approach, within the functional writing situation, the student's personal errors in handwriting would be pinpointed and remedial work provided as individual errors made. The following would not be emphasized:

1. separating handwriting instruction from the everyday writing situations inherent in life.
2. specific remedial errors remedied outside the framework of functional writing.
3. eliminating students in planning objectives, learning activities, and appraisal procedures in the handwriting curriculum.
4. a logical curriculum in which preplanned goals have been selected in handwriting for student attainment. Rather, a psychological curriculum needs to be in evidence whereby teacher-pupil planning is utilized to develop the curriculum.
5. separate time during the day involved in the teaching of handwriting unrelated to other curriculum areas in the school setting.
6. a limited scope in the curriculum in which handwriting is taught as a separate subject, rather than emphasizing the correlated, fused, or integrated curricula.
7. a formal sequence preplanned by teachers and supervisors.
8. evaluation procedures determined and implemented solely by teachers and supervisors.
9. inadequate emphasis of transfer of learning from one situation to another, such as specific techniques acquired in handwriting lessons to functional writing situations.
10. lack of emphasis placed upon learner interests and pursposes in handwriting.

Rewarding Handwriting Proficiency

How should pupils individually be rewarded for improved proficiency in

handwriting? Behaviorists would recommend the use of success in learning, verbal praise, or prizes if students achieve well in handwriting. The teacher needs to ascertain how many precise objectives any learner can achieve realistically in order to receive a physical prize such as a certificate, badge, candy, or gum. The learner is aware of the exact number of measurable goals which need attainment in order to achieve one or more prizes.

Success in learning should be the lot of all students regardless of present achievement levels. If a student is able to perform better in handwriting presently compared to earlies attempts, he/she is successful, providing it is individual optimal achievement. Students being successful in attainment is recommended by all schools of educational psychology. Verbal praise is important to reinforce quality learning, in terms of behaviorism as an educational psychology.

Humanist educators also utilize verbal praise for work well done, but not to the extent advocated by behaviorism. Behaviorists advocate shaping and successive approximations as concepts in teaching. Shaping means to continually reinforce quantitative (measurable) achievement each step of teaching and learning. Behavior of students in an acceptable direction might then be shaped. Successive approximations indicate that with shaping each student will continually aspire upward in goal attainment.

Behaviorism then advocates concepts of reinforcement, shaping, and successive approximations in guiding students to attain precise ends. External rewards tend to motivate student accomplishment.

Pertaining to reinforcing student progress in learning, Bowyer[6] wrote:

> B. F. Skinner's programmed learning, in sharp contrast to branching, is linear where reinforcement is the primary basis of learning. Here the subject matter is developed in small steps and the pupil is rewarded by each success. At the same time, his knowledge is reinforced. The

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[6]Carlton H. Bowyer, Philosophical Perspectives for Education. Glenview, Illinois: Scott, Foresman and Company, 1970, page 367.

> pupil is motivated by the reward for correct answers, and the sequence of questions is tight and carefully constructed in order to minimize incorrect responses. This type of programming is especially suited for drill and practice teaching.
>
> Crowder's approach is associated with intrinsic programming, and like Pressey, he relies upon multiple choice items. The pupil answers a question, and when he makes an error he is referred to correct sources of information. He can proceed only when the mistake has been eliminated. This too, is a branching procedure, but when the student meets an obstacle he is helped by a specific direction. The method of programming necessitates an insight into how the pupil can be expected to think and to respond. The anticipated incorrect answers are used to help build knowledge and skill. All teachers who use cogent reasoning and well-conceived questions to encourage student answers utilize the branching technique, but the use of the machine enables the student to receive more individual instruction than is possible otherwise.

Toward the other end of the continuum, selected educators recommend that learning in and of itself is its own reward. Intrinsic motivation is then in evidence. No prizes, certificates, or badges should be given to learners to stimulate learning. Rather with stimulating learning activities, students from within perceive puprose, motivation, and joy in learning. Learning is prized for its own sake. The student is not achieving for reasons of securing extrinsic rewards. But, inside the learner, satisfaction exists for accomplishing and attaining.

Jerome Bruner, a leading educational psychologist, advocates intrinsic motivation or learning is its own reward. Morris and Pai[7] wrote:

> ...Children often learn knowledge or skills as a result of rewards coming from the outside; extrinsic rewards are likely to conform to what is expected of them. Hence, a child who engages in learning activities for grades alone is likely to be docile and obedient to the teacher rather than spontaneous and creative on his or her own. This child becomes primarily

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[7] Van Cleve Morris and Young Pai. Philosophy and the American School. Boston: Houghton-Mifflin Company, 1976, page 276.

> "other-directed." Bruner hypothesizes that approaching learning as discovering something rather than as learning about something will lead children to act in terms of self-reward, intrinsic reward, that is, to be rewarded by discovery itself. Learning for intrinsic reward eventually frees children from immediate stimulus control, and they become competence-oriented, so that each child can be more of an "inner-directed person."

Somewhat opposite of behaviorism, selected educators then recommend that learning is its own reward. These educators believe that external prizes are unrelated to learning and may actually hinder the process of acquiring and attaining of understandings, skills, and attitudes. If learning is its own reward, students learn because an inward desire to do so is inherent in the student. Intrinsic rather than extrinsic motivation is significant. Students learn due to wanting to learn. From within, the conditions of the student are such that positive feelings toward achievement are in evidence.

The Word Processor in the Curriculum

Relevant objectives need selecting for learners to attain. Numerous changes occur in society. Seemingly, situations in life are not stable nor static. Rather, change is a key concept. Changing societal situations need to be incorporated into the curriculum. The word processor, when more numerous in number than presently, may well provide vital goals in teaching-learning situations.

Objectives in ongoing Lessons and Units

There are selected criteria which need to be followed in choosing objectives. Thus, outcomes for student achievement must

be:

1. purposeful so that reasons for learning are inherent.
2. meaningful in that what is being learned is understood.
3. interesting to stimulate intrinsic learner attention.
4. attainable in a manner which provides for diverse levels of achievement.

To translate the above named criteria into goals for learners to realize, relevant ends need choosing reflecting the utilization of the word processor. The following concepts might well provide direction for selecting objectives, learning activities, and evaluation procedures in using word processors:

1. control card—a magnetic card containing instructions for the central processing unit.
2. electronic typewriter—electronic in nature and not mechanical in operation. The number of moving parts is few and operates in a silent manner.
3. automatic carrier return—the operator does not need to return the carriage at the end of a line of type. Automatically, the carrier is returned by the machine. Automatic centering is completed with a keystroke command to the central processing unit (CPU).
4. central dictation system—direct wiring of a system to a central location whereby dictation from others is received.
5. input—content which goes into a computer.
6. K (kilo)—represented by 1000 characters, approximately. Thus, 30K equals 30,000 characters.
7. keyboarding—the actual operation of a typewriter.
8. log sheet—a document which is used by supervisors to record cost efficiency as to incoming/outgoing work of computer service.
9. magnetic diskette—diskette which has a magnetic coat on which 130 pages, approximately, of typed content may be recorded.
10. magnetic tape—tape which has magnetic coat and is used for recording of information.
11. memory—within the central processing unit, an internal device in which subject matter can be stored and retrieved upon demand.
12. printer—a facet of the output device which prints content on paper.
13. record—storing typed content on a magnetic medium for use in the future.

14. search—a command to the word processor which causes the location of a specific section.
15. shared logic—two or more terminals can utilize the memory of the same central processing unit (CPU).
16. software—includes manuals, programs, and flowcharts to assist in making optimal use of the computer. Software then are materials used to operate and control the hardware (computers).

Learning Activities to Achieve Objectives

Experiences for students should guide in achieving relevant objectives. Each student is at a different level of achievement compared to other learners. Thus, students individually will progress at different rates of speed in attaining objectives.

A variety of activities should be utilized in teaching and learning. Hands on approaches in utilizing the word processor should predominate as a learning activity. However, illustrations, slides, films, tapes, excursions, and filmstrips may also be utilized to provide for individual differences. Success in learning is important in order that each student might optimalize learning.

Sequence in learning is vital. If learnings are sequential, students individually have excellent opportunities to achieve objectives. A lack of learner progress may well be due to improper order of content and skills presented.

Ultimately, student achievement needs to be evaluated. A variety of evaluation techniques may be utilized. These include:

1. teacher observation of learner progress in operating a word processor.
2. teacher written test items, such as true-false, multiple choice, matching, essay, and completion.
3. discussions to notice learner progress.
4. checklists and rating scales to notice if objectives are being attained by learners.

5. anecdotal statements. Thus, the instructor records random behavior of each student in learning to utilize the word processor.

The school cruurculum should not be separated from trends in society. The use of word processors in the societal arena has tremendous implications in selecting objectives, learning activities, and appraisal procedures in curriculum development.

In Summary

Selected issues were identified in the handwriting currciulum. These include:

1. a separate subjectives versus a correlated curriculum.
2. behaviorism versus humanism.
3. experimentalism as a philosophy of education.
4. teaching handwriting: art versus science.
5. planned curriculum versus needs in handwriting.
6. rewarding handwriting: extrinsic versus intrinsic motivation.
7. the use of the word processor in the language arts.

Teachers and supervisors need to study, analyze, and attempt to synthesize diverse issues in the teaching of handwriting. Ultimately, relevant goals, learning activities, and evaluation procedures need selecting to provide for individual levels of student achievement.

Barbe, Walter B, et.al. (Eds.)[8] wrote:

> Handwriting is a necessary skill that it is too often taken for granted. It has been the medium through which the history of humankind has been recorded for thousands of years. The role of handwriting in the development and growth of the human race is incalculable.
>
> The constituents of handwriting are the abilities that make humans unique among animal species: cognition, complex hand-eye movements, language competence, and aesthetics.

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[8] Walter B. Barbe, et.at. (Eds.), Handwriting. Columbus, Ohio: James Bloser, Inc., 1984, page 1.

These abilities are blended together to produce a visual communication system that is functional and beautiful. Through the simple act of applying a writing instrument to a smooth surface and creating a pattern of lines, a person can permenently record thoughts, opinions, interests, and emotions so that others might know them. Representing internal and external reality through graphic symbols interpretable by others is a distinct human talent rivaled only by the power of speech.

The cry in education is no longer for relevance, but for competence. Schools, it is now recognized, must provide children with the basic skills they will need in order to continue their education or to move into adulthood as workers. Handwriting is among the basic skills that have received more attention from the change in philosophy. Sales of handwriting materials have increased each year since 1975, and the amount of time spent on handwriting instruction has increased proportionately. Educators and parents are realizing that good handwriting is not a frill, but an essential ability that relates to success in school and in later life.

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