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ABSTRACT

The goals of the Information System for Vocational Decisions (ISVD), a computerized vocational development program which emphasized goal setting and purposeful action, are related to a tentative curriculum context called a Career Development Program. This Program is learner centered with process and subject matter a function of individual inclinations and differences. The author emphasizes that vocational skill training cannot and must not be separated from the total educational process. Academic preparation has relevance to the vocational development of an individual. It is suggested that this common curriculum deal with phases of self-awareness, career awareness, role identification, goal setting, and purposeful action as modalities in facilitating rational decision-making and analyzing careers. The need to assign supervisory responsibilities in implementing such a curriculum is discussed, through final delineation must wait for live interaction between the inquirer, the scripts and the computer. (Author/TL)

INFORMATION SYSTEM FOR VOCATIONAL DECISIONS

Project Report No. 10

A TENTATIVE CAREER DEVELOPMENT CURRICULUM AND ITS IMPLICATIONS FOR THE PATTERNING OF SUPERVISORY RESPONSIBILITIES IN THE INFORMATION SYSTEM FOR VOCATIONAL DECISIONS

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The Common Curriculum and a Tentative Career Development Program

We defined the general framework for supervision of the Information System for Vocational Decisions (ISVD) in a previous paper entitled, Toward a Language of Supervision (Fletcher, Lerer, and Gunnoe, 1967). To delineate specific dimensions of the supervisory process[1] within the context of ISVD, we now direct our attention to examination of a suggested, but still highly tentative, curriculum context and a specific curricular Program within which the supervisory processes are likely to occur.

The ISVD is proceeding along several fronts simultaneously. One of these fronts is the delineation of a supervisory process implied by the ISVD in its general outlines. This delineation is proceeding according to this paper and its predecessor as noted above. A second of the fronts of the ISVD is specification of a Vocational

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[1]"...the continuous active management (administration) of the problem-solving decision-making processes" (Fletcher, Lerer, and Gunnoe, 1967, p. 5).

Development Program. This goal is being pursued under general direction of Robert O'Hara, Executive Director of the ISVD, with the cooperative support of other staff members. At the present time, a first approximation of a Vocational Development Program in its probable entirety is scheduled for completion by September 1967.

However, the development of theory in supervision requires an even earlier tentative partial delineation of a possible Career Development Schema. Therefore, this paper outlines such a Career Development Schema modeled on the one in construction at the University City Science Center, Philadelphia, under direction of Christopher Weeks (1967).[2]

Supervision and curriculum in the ISVD will develop with the proposal leading to the grant from the U. S. Office of Education. Two paragraphs from that proposal are of immediate relevance to this paper's discussion of supervision in relation to a tentative Career Development Schema, namely:

> "Vocational education today faces serious problems caused by the more rapidly changing nature of the world in which its students must find their way. There is still too much emphasis on specific preparation for specific jobs, with the danger that the student may find his occupation obsolete by the time he completes his training.
>
> "Clearly, we need to persuade our citizens to redefine such concepts as occupation and career to encompass a lifetime, not a single instance, of choice and change. Jobs

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[2]Fletcher and Lerer have participated in the development of the Philadelphia Career Development Program.

must be considered as containing clusters of personal and technical requirements (skills), and training must be designed to develop skills which are usable and/or adaptable to a variety of different jobs. This means providing more and better data about job characteristics and skill requirements as they relate to people. It also requires that we train our people to use these data, design the necessary technology to provide access to them, and develop means of evaluating the results of their use. Finally, ways must be found to marshal and coordinate the necessary talent and interest to mount an intensive and systematic attack on the problem." (Tiedeman, Landy, Fletcher, Ellis, Davis, and Boyer, 1965, p. 1)."

A further examination of the original proposal indicates that the objectives of the Project are to be achieved by:

1. Development of a computer-based data system for use in vocational decision-making;
2. Development of one or more training programs, or courses, in vocational decision-making; and
3. Study and assessment of the system, its users, and its use. (Tiedeman, et al., 1965, p. 3).

Although the need for an examination of current curricula offerings and the development of one or more new curricula is implied in our proposal, our purpose in this paper is to make explicit some directions in which the curriculum of our school-age inquirers might

move. At this point we have been unable to separate, to our own satisfaction, "vocational curriculum" from the "academic curriculum," but suggest "a common curriculum" (Broudy, 1964), or "organic curriculum" (Morgan, Bushnell, 1966) - one which is offered to the total population of a school as a resource, and is basically the same for all in regard to what is expected, but not in what is achieved. Variability for different ability levels and accommodations to individual inclinations can be obtained by adjusting the sophistication and detail, and/or changing the focus of that which is taught. However, the expected goal remains the same for all.

The Broudy concept of the "common curriculum" does not negate the necessity for teachers to hold expectations before students that whatever they elect to do, they do well. This requirement that awareness become informal as choices progress will be foundational to all choice contexts of the ISVD (Olympia, 1967). Furthermore, our application of the notion of the "common" or "organic" curriculum requires the teacher to organize what students are expected to know, and to adopt a pedagogy which causes the students to inform themselves to a desired level of capability translated into action; i.e., the think/act duality (Fletcher, Lerer, Gunnoe, 1967). Therefore, we will construct the Information System for Vocational Decisions so that the Career Development Schema can be conceived as a resource available to all but so that direction, clarification, skill development, and progress in elected directions can be facilitated 1) by general instruction in the art of choosing, 2) by application and

further instruction in that art in the specific context of career development (Tiedeman, 1967), and 3) by reality testing.

As part of the common curriculum, vocational education becomes neither an alternative, nor an adjunct, to the mainstream of a curriculum of thinking and experiencing to which the school-age population is exposed (Tiedeman, 1964, 1966). Rather it is a natural and essential component of the total education process; all students walk the verbal-experiential continuum; all students deal with the abstract and the concrete. Therefore, included in the common curriculum must be a "Career Development Program," one that provides a means for individual choice and action within the "common curriculum."

The ISVD project reports so far have made three approximations toward denotation of the curriculum components incorporated in a common curriculum. Tiedeman (1966) has indicated some of the outcomes of vocational development which can probably be arranged in conjunction with a discovery form of pedagogy. This work makes clear that a Self Development Program will have to be one of the themes created within the resources of the ISVD. Tiedeman (1967, Appendix B) has further specified the conditions under which this Self Development Program must be designed because of the specific choice points, or developmental discontinuities, which appear and/or are arranged in a person's life. O'Hara (1967) in "A Theoretical Foundation for the Use of Occupational Information in Guidance," has indicated the necessity for a Vocational Development Program.

However, there is still a fourth, or Career Development Program,

which will be needed in the ISVD. This fourth Program takes its theme from the paradigm of decision-making which Tiedeman and O'Hara (1963) have laid out in specific application to the analysis of obtained careers, not in specific application to the development of careers. However, that paradigm must also in its turn be augmented by the concept of entrepreneurial behavior which Fletcher has laid out (cf. Dudley and Fletcher, 1965). The Career Development Schema is not fully clarified at the present time in relation to the intricacies of all of its relationships to the three other curricula with which it must articulate. However, a first approximation is made in this paper to facilitate further exposition of the process and technique of supervision which is implied in ISVD.

The Career Development Schema as later specified, requires the following assumptions implicit in the ISVD and its assemblage of Programs:

1. People learn best when the learning situations provide experiences which are relevant to realistic goals of the individual. This suggests that the ingredients for learning include self-appraisal by the learner; the setting of realistic rational aspirations and goals; the personal development of a plan of action to move toward the achievement of these aspirations.

2. Despite the importance of other societal institutions in achieving similar ends, it is the prime responsibility of schools to make pupils ready for learning - for becoming a "knower."

> This assumption, in turn, suggests the necessity of an appropriate climate for acquiring basic knowledges and skills, civilized attitudes and appreciations.

The Career Development Program

It is essential that students be offered a series of educational experiences which will facilitate their becoming rational decision-makers, and are provided with those "dispositions" that will educate them in the specialized tasks which might be required by society. One aspect of the development of power in rational decision-making is the concommitant realistic self-appraisal and assessment related to careers in society. Who am I? Where am I? Where do I want to be? How do I get there? Such are some of the significant questions to which schools and the "system" must address themselves to help students find answers.

Therefore, to facilitate the implementation of a viable Career Development Program, we suggest the following developmental phases:

1. World exposure and self-awareness
2. Career awareness and aspirational development
3. Experimentation and role identification activity
4. Goal setting
5. Purposeful action

Each of these phases must in turn be expanded into some suggested following sub-aspects:

1. World Exposure and Self-Awareness (elementary grades)

    1.1. Experiences which are self-oriented encouraging exploration and inquiry.

1.2. Alternatives made available to encourage and permit decision-making.

1.3. Individual choices based on individual interests, likes, abilities.

Do I like to work alone or with others?
Do I like to work with things or ideas?
Do I like to be the leader or the follower?
Do I like to be in a stable environment? Am I happy with constant change?

1.4. Emphasis on relations of the individual to himself, to others, society.

2. Career Awareness and Aspirational Development (elementary grades)

2.1. Exposure to a variety of careers (jobs, occupations).

2.2. Relationships between jobs and personal strengths and weaknesses indicated.

2.3. Focus on awareness of "style of life" suggested by various careers.

2.4. Re-examination of need for continued experiences to provide additional world awareness and self-awareness as indicated.

2.5. Repeated self-appraisal in terms of realistic evaluation of others and "world of work."

2.6. Recycling based on individual needs.

3. Experimentation and Role Finding (elementary and intermediary grades)

3.1. Emphasis on situation in which decision-making is stressed in terms of individual relationships to careers.

3.2. Within the framework of existing educational programs, making significant educational decisions (course selection, school selection).

3.3. Utilization of role-playing and/or gaming-simulation experiences in which the individual as an "entrepreneur" becomes significant.

3.4. Initiation of "role activity" process: role perception, role analysis, role identification.

3.5. Facilitating recycling based on individual needs.

Each of the sub-phases of each of the above phases are a part of the exploratory step of the "decision-making" paradigm. See Figure 1.

Goal setting and purposeful action are involved with crystallization, choice, and clarification as stipulated by the paradigm. The sub-aspects of the two phases of a specific vocational choice development probably will involve the following:

4. Goal Setting (intermediate and upper grades)

4.1. Emphasis on crystallization aspect of decision-making paradigm.

4.2. Selection of academic program that facilitates rational decision-making (pupils wanting to explore medicine would have a significant science component; students exploring secretarial positions would have a major business ed. emphasis) and vocational discrimination.

4.3. Narrowing down of alternatives in depth for exploration of specific occupation, jobs, clusters, roles.

4.4. Role analysis leading to role identification.

4.5. Introduction of observer-participant phases of work-study cooperative experiences.

4.6. Facilitating recycling based on individual needs.

5. Purposeful Action (upper grades)

5.1. Making decisions concerning career development choices.

5.2. Major involvement in work experience component of educational process.

5.3. Periodic evaluations of extent to which activities of preceding phases have facilitated "rational decision-making."

5.4. Facilitating recycling based on individual needs.

Figure 1

CLIENT-SUPERVISOR-DATA BASE RELATIONSHIPS

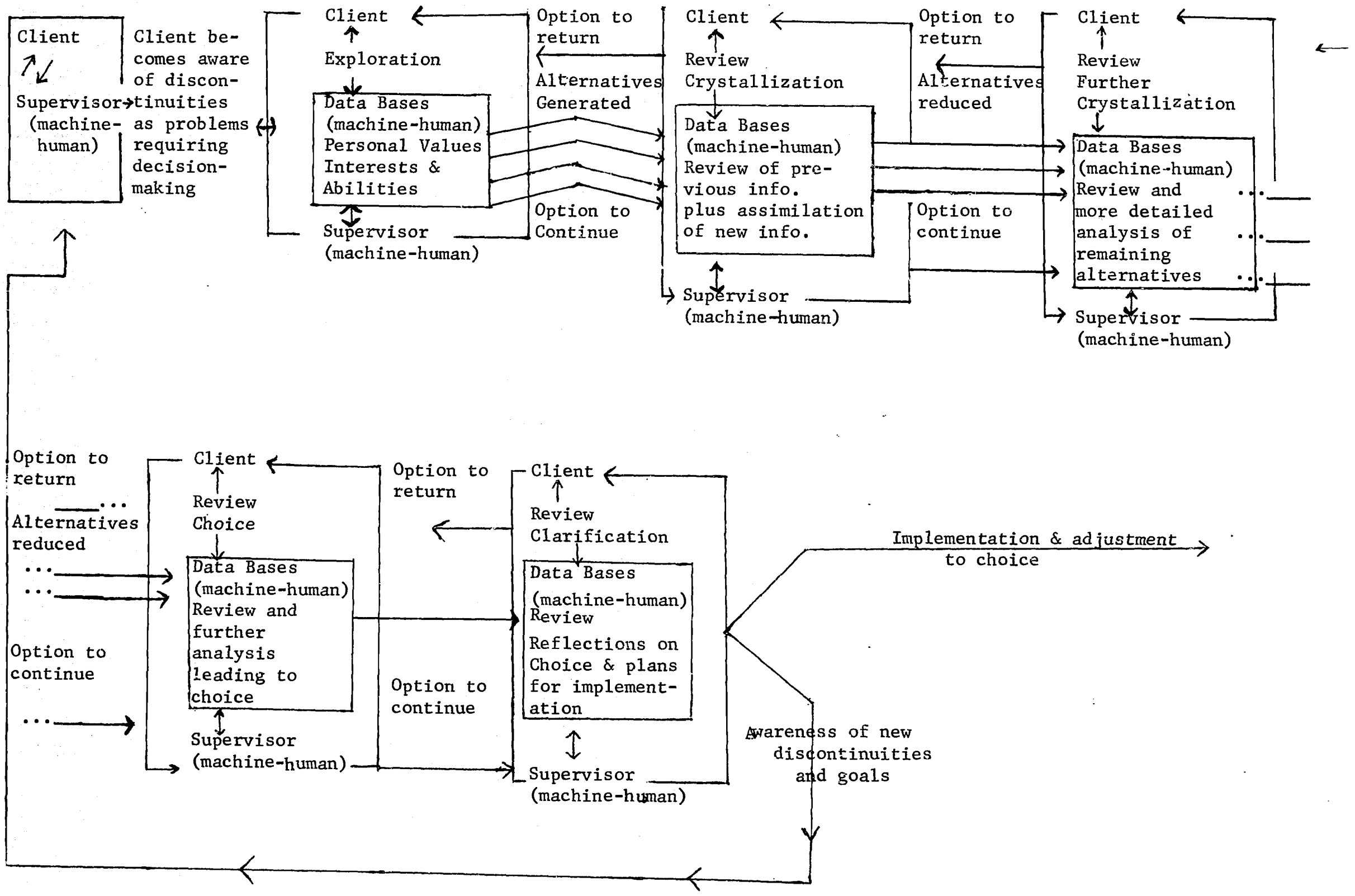


Figure 2 recommends the degree of emphasis which the several phases of the Career Development Program are likely to need at each of several levels of school grades.

It must be understood that these phases are not discrete entities which can be treated independently of each other; they are merely logical conveniences for our organization of expectation, work, analysis and teaching. Each phase is to be conceived as built upon a previous one; for instance, phase two should logically incorporate elements of phase one, as the individual needs of the students permit. Phase five, by the same token, is not only presumed to be built upon the previous four phases, but will and must include explicit references to these preceding phases.

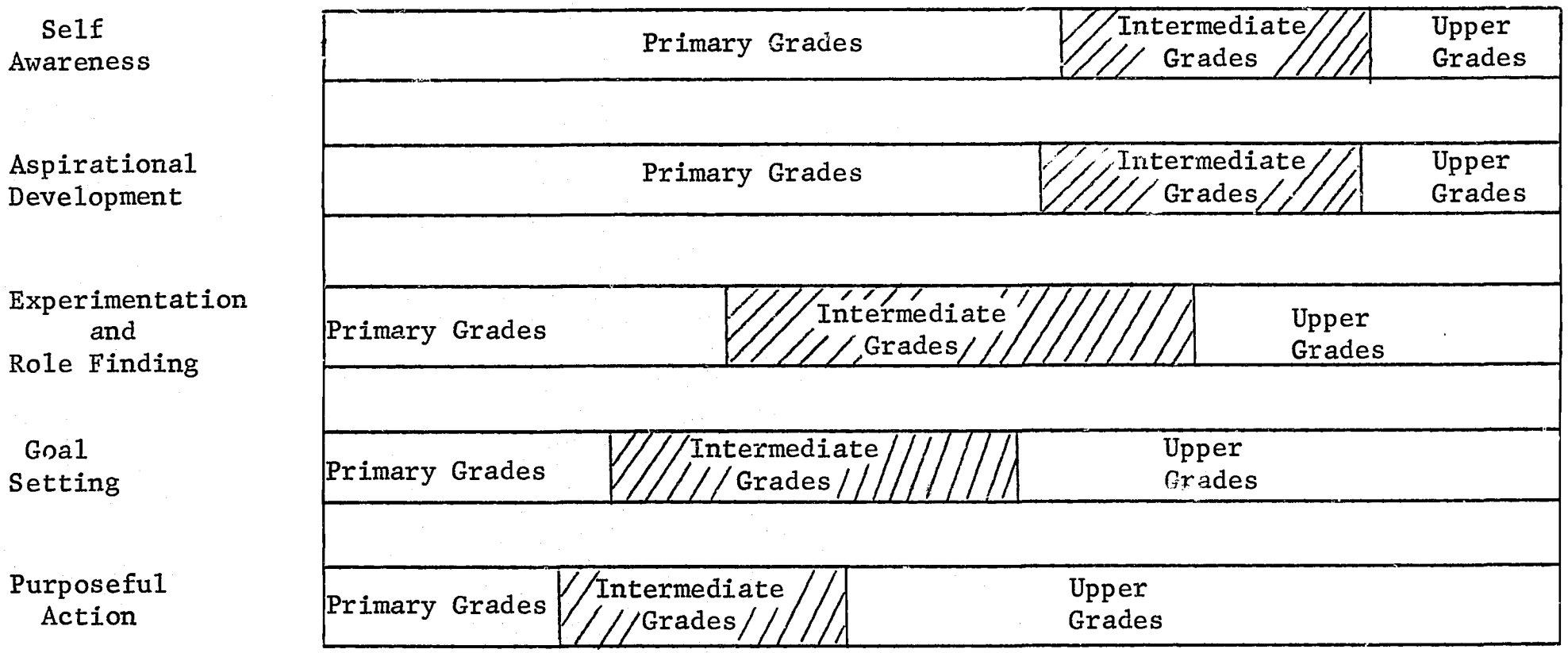
However, individual needs in students as manifested through their inclinations and/or sets serve as the final arbiter in determining the degree to which the student initially explores and then reinforces himself in each phase. It is entirely possible that for some students leaps can and should be made from one phase to the other--from self-awareness in some definite and some intuitive terms to experimentation in as yet unspecified and unexplored terms; for others, the pattern will need to be more sequential and precise. "In education as in other affairs, man's purpose is to move forward and upward. Sometimes he moves slowly and painfully; occasionally he moves forward with amazing speed." (Doll, 1964, p. 2)

It is also highly probable that students will need to be "re-cycled" through previous phases as self-appraisal and assessment reflect

Figure 2

CURRICULUM EMPHASES IN EACH PHASE

Developmental Phase



Degree of Involvement with Each Phase

According to Grade Level

changes wrought by increases in knowledges and skills gained by inquirers.

The Inquirer and His Supervision

It is essential that the overall pattern of the Career Development Schema, whatever form it finally takes, consciously be understood by the supervisor and clients of the "System," to facilitate the continuous development and progress of the client. Just as the supervisor and inquirer must know "where the inquirer is," so it is important to know where the "System" can take the inquirer and for him to be shown how he can get there.

Therefore, it becomes necessary that we attempt a first approximation of the particular responsibilities assigned to the human and/or machine responsibilities in the "System."

When we speak of an inquirer's initial involvement with the system, we must be aware of at least two kinds of inquirers--those whose first contact with the system occurs in the primary grades, and those whose first contact occurs at some other time in their educational-vocational career. Primary grade children will need a variety of human "bridges" between the known world and the new world of the "System." At this point in time, machines cannot yet offer to most inquirers the same kinds of experiences and reactions that are available in a well conceived and sensitively implemented and on-going human-human interaction. This human interactive mode will be essential for inquirers in the primary grades, where suggested major emphases are on the phases of self-awareness and world exposure. The development of realistic

self-awareness by any individual in relation to himself, his peers, and society-at-large can probably best be effected in face-to-face relationships with other human beings. The degree to which a client, at some other point in his development, can effect rational appraisal and awareness with respect to himself and other societal factors, will most accurately determine the amount of bridging, as helped by humans, which he will need.

Therefore, it is suggested that the development of self-awareness and world exposure concepts become the major responsibilities of the supervisors of the "System" as they prepare the inquirer for maximizing use of the potential resources of the "System."

As the inquirer increasingly becomes aware of these resources and of his own personal needs to continue to explore personal aspirations, increased utilization of stored data bases occurs. (See Figure 1). There will by then be additional involvement with the "world of work." Hence, interactions with the machine components of the "System" will increase.

Supervision and the Inquirer - Machine Interactions

It is important to note here that the machine as envisioned in terms of its console units which create the interface of person and computer, will consist of the following components:

1. Audio: a component that will speak to the inquirer under computer direction, with the possibility of recording the oral responses of the inquirer for future playback;

2. Keyboard: a component for the designation of inquirer responses in numbers, letters, and words;
3. Display: a component including audio-visual composites of movies, slides, video tapes, and a cathode ray tube (CRT) with a light pen for direct response of the inquirer to the material projected on the CRT;
4. Hard copy print-out: a component that will permit the inquirer to select and retain copies of desired data.

The inquirer then will be able to engage in a series of interactions with the machine, guided by scripts that incorporate any or all of the potential multi-sensory appeal devices noted above.

The machines can record the results of inquirer reactions in descriptive statistical terms (e.g., the length of time taken to respond, frequency of distribution of responses, words spoken or selected by inquirer, items omitted by inquirer), but more complex and probably intangible elements found in human sensitivity and non-verbal communication can be noted at that moment when the client and supervisor are themselves directly engaged in a relationship.

The supervisor must serve as the continuous monitor interpreting inquirer progress, interests, abilities, patterns of questioning, and responses as noted by the machine monitor. This material thus serves to guide additional appropriate activities - activities that could involve returning to the machines, recycling to a previous phase, and/or introducing new machine/human relationships.

It must be noted that during these human/machine monitoring

activities the inquirer is continuously being made ready for additional relationships with all components of the "System," his and ours.

As noted in Figure 1, personal data bases will be included (e.g., standardized test data, teacher anecdotal data, interest inventory data), and, after appropriate monitoring by the machine and human supervisors, will become available to the inquirer. The hard-copy print-out and audio/CRT components could be particularly appropriate devices for sharing simulated experiences with the inquirer.

Selected audio-visual composites (movies, tapes, slides, video-tapes) would be suitable in helping inquirers understand the "style of life" and "style of work" associated with particular occupational areas and/or vocational aptitudes and interests.

However, these interactions with the machines must be monitored and evaluated by the supervisors in planning review, reinforcement, and/or new learning experiences for the inquirer - experiences that can be provided appropriately by a return to the machine or by human interaction with the inquirer, e.g., field trips, work-study, special visitors, traditional "developmental lessons."

As the inquirer's personal involvement and progress in the Career Development curriculum increases, interaction with the machine increases. During experimentation and role-finding activities machine-based simulation and gaming (Fletcher, et al., p. 10) become increasingly important instructional devices. By this point in time, the inquirer already has experienced a variety of comparatively simple interactions with the machine, understands what can and cannot be

expected and done, and has been involved in continuous feedback with the machines and supervisors.

When the inquirer begins thinking seriously about making vocational choices, or reengaging in a series of serious self-awareness activities, occupational, personal and economic data bases in the machines provide significant data. For some inquirers, the machine interaction can itself transform these data into information; for other inquirers, supervisor instructions may be most effective for a while. However, the process by which the data are transformed into information in appropriate ways, suggests that human interaction is, and must always remain, one essential element.

Relationships between those using the "System" and the machine/human supervisors, must develop from the individual idiosyncratic needs of the inquirer, the sensitivity and skills of the supervisors, and the kinds and availability of the data bases within the machines. It would appear, then, that "planned" and "unplanned" supervision must both exist. Materials for storage in the machines must be prepared in advance of use, and be ones with which the supervisors of the "System" are familiar. These resources and their access modes will be considered as the "planned supervisory" components. It is around this material that the inquirer and supervisor can organize a series of experiences that will alert the inquirer to his discontinuities, and will inform him of resources at the machine. It is incumbent upon the supervisors that they be conversant with materials that are already in the "System," those that are being prepared, and with the implications of these materials for use by the "System."

The supervisors must know what can and cannot be done by the machines as appropriate preparedness continuously is created for inquirer-"System" interactions. In fact, it is this awareness which represents the mature condition to which we want to bring inquirers through repeated exploration of their systems in interactions with ours. Only then can the implications of these interactions for follow-up supervisor-inquirer activities be understood and their potential maximized.

It is to this degree, then, that supervision is considered "unplanned supervision." The scripts and materials in the machines must perforce limit the alternatives available to the inquirer. The supervisor, through his knowledge of these scripts and materials, knows what alternatives for choice have been made available to the inquirer and during his interaction with the inquirer can further anticipate and prepare. However, anticipation or preparation will at best be general for all those "unanticipated consequences" resulting from the inquirer's interaction with the machines.

Summary

In this paper an attempt has been made to relate the goals of the ISVD to a tentative curriculum context - a context which we have elected to call a Career Development Program. It is important that our attention be so directed as we become increasingly involved in the preparation of scripts and the delineation of supervisory responsibilities.

As currently envisioned, the Career Development Program would be learner centered with process and subject-matter a function of individual inclinations and differences. Vocational skill training cannot and must

not be separated from the total educational process. All components of the program are to "be defined in terms of their contribution to the attainment of the specified behavioral objectives." (Morgan, Bushnell, 1966, p. 11) The myth that separates academic from vocational preparation must be shattered; the functions inherent in academic preparation have relevance to the vocational development of an individual. Much of what is offered in academic English, social science, science, and mathematics, has vocational applicability, just as much of what is offered in "related areas" in vocational education is directed toward development of the civilized "good man."

It has been suggested that this common curriculum deal with the phases of self-awareness, career awareness, role identification, goal setting, and purposeful action as modalities in facilitating rational decision-making and analyzing careers. Incumbent in the implementation of such a curriculum is the need to attempt an approximation of the assignment of supervisory responsibilities to the machine/human components of the ISVD. However, such responsibilities are at this point at best tentative. Final delineation must wait for live interaction between the inquirer, the scripts and the computer.

The following questions provide guides which hopefully will lead to later statements clarifying the areas within which these questions exist.

Inquirer-"System" Relationships

1 - How does the "System" provide for the "out-of-phase" inquirer?

2 - Are all units mandatory?

3 - What particular sections of curriculum units are to be made into scripts for the machine?

4 - Who assumes responsibility for assigning individuals to human/machine components?

"System"-School System Relationships

1 - How does one relate the content of the "System's" curriculum with the content of the school system's curriculum?

2 - Who shall determine time allotment for use by school systems of "System" resources?

3 - What options are available to the inquirer in terms of utilization of the "System"? (i.e., are the STEP tests or O'Hara's test mandated on the machine?)

Internal "System" Relationships

1 - What kind of human supervision is to be available to inquirers during interaction with the "System"?

2 - What administrative procedures shall be established to facilitate appropriate scheduling of "System's" resources?

Some of these questions are more immediately relevant than others and some of more importance than others. However, the answers to all of them will be developed in further papers delineating supervisory responsibilities.

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