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ABSTRACT

Project Priority was designed to bring cognitive style information to two-year colleges in New York State. The project consisted of four sequences: (1) identification of information and personnel for the project; (2) a colloquium on cognitive style for leaders in two-year colleges and related agencies; (3) a series of four workshops considering the implications of cognitive style for the community college, cognitive style assessment instruments, the ways in which cognitive style information could be applied, and development of local projects by campus personnel to explore the applicability of cognitive style information for their own campuses; and (4) reporting of results on the projects executed at the campus level by project participants. In evaluating the outcomes of the project, it was concluded that the major goal of exploring the applicability of cognitive style information for the two-year college was accomplished. Most project participants felt the project was valuable for faculty and students, and all but three of the twenty-one participating colleges indicated a desire to continue their work with cognitive style. Definitions of eleven cognitive style models are included in the report as an appendix. (JDS)

TWO-YEAR COLLEGE DEVELOPMENT CENTER
State University of New York at Albany

Project Priority
1974 - 1975
An ESEA Funded Project

Final Report

Prepared by:
Kathryn J. Martens
Program Associate

Project Priority
Abstract

The Two-Year College Development Center, concerned with faculty interest in better serving the diverse student population of the community college, and believing that information on how individual differences in information processing might effect student learning would be valuable to these faculty, proposed to the New York State Education Department, a project which would bring cognitive style information to two-year colleges in New York State. The first year of the project, funded under Title III, began in July, 1974. Twenty-one two-year colleges, public and private, including community colleges, Agricultural & Technical Colleges and Educational Opportunity Centers participated in the project, as did a staff team from the Chancellor's office of the Virginia Community College System. The objective of the first year of the project was to provide cognitive style information and to evaluate the applicability of that information for two-year colleges.

The project included four sequences. The first sequence involved Center staff in identifying information and personnel who could contribute to the project. In coordination with the project's continuing consultant, K. Patricia Cross, a seminar was held to discuss current research on cognitive style and its implications for community colleges. Attending this seminar besides project staff, were leading researchers in cognitive style.

Information from the seminar was provided to project participants and used as a basis for the second phase of the project, a New York colloquium. The colloquium was designed to introduce cognitive style to leaders in New York State two-year colleges and related agencies. Colloquium participants developed a list of concerns and recommendations for New York State two-year colleges based on an analysis of information obtained at the seminar.

The third and major sequence of the project included four workshops for project team members from the twenty-one participating colleges. The first workshop, Recognition, was designed to introduce the concept and to consider the possible implications of cognitive styles for the community college. The second workshop, Assessment, provided participants with the opportunity to use a variety of tests and introduced other assessment methods. Implementation, the third in the series focused on the variety of ways cognitive style information might be used on campus and provided a "learning lab" of cognitive style materials. The final workshop, Evaluation, was designed to assist college teams in planning a project for their campus. Through these campus projects participants were able to use the information and materials presented at the workshop to explore the applicability of this information for their own campuses.

Campus projects were generally of two types: testing students to determine cognitive style information or planning faculty workshops to introduce this information to others at the college. Results of these projects were reported in the final sequence of the project, the summary activity. In addition to presenting the results of their projects, participants discussed the directions they felt work with cognitive style should take in the future and the support they felt was necessary to continue their projects.

Project Staff

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Introduction to the Project

Problem Statement

Several important trends now affect the concerns of students, counselors, teaching faculty and administrators in two-year colleges. Each of the aforementioned groups is grappling with ways to assure effective learning by the diverse students now, and yet to be, enrolled. One of these trends, based on the premise that each student as an individual merits the optimum personal approach that the college, by its conscientious, creative efforts, can manage, focuses on the student's unique learning style. As a whole, the college, the instructional faculty and, particularly, the counselor now are being called upon to understand fully the ways different students react to and interact with the college's methods and modes. Since open door two-year colleges confront learning problems at their most critical point, the matter of this understanding is crucial and urgent.

One approach to the problem of working with a diverse student population that has received relatively little attention in education is the utilization of cognitive style information. Although there has been almost 30 years of research on cognitive styles, this research has taken place primarily in psychological laboratories. One of the leading researchers in this area, Herman Witkin, suggests that this research can be helpful in improving educational practices. Research by Witkin and others has shown that cognitive styles are an important variable in how students learn, how teachers teach, how teachers and students interact and in the educational-vocational choices students make.

Discussions within the Two-Year College Center with other faculty members in the State University of New York at Albany School of Education, with K. Patricia Cross of the Educational Testing Service, and with colleagues in the two-year colleges led to the conclusion that cognitive styles appeared to provide important information in better understanding and designing educational

approaches for the diverse student population of the two-year college. The Center proposed, to the Bureau of Two-Year College Programs of the New York State Education Department, a project designed to provide information on cognitive style to two-year college personnel and to explore the applicability of that information in community colleges, Agricultural and Technical Colleges and Educational Opportunity Centers in New York State.

The over-all objectives of the project were:

1. To provide the framework whereby college staffs focus on student learning styles in their on-going process of improving counseling and instructional procedures.
2. To focus college staffs on the improvement of counseling services through coordinating of the efforts of the student affairs and faculty on the means of accommodating student diversity.
3. To prepare counseling and instructional faculty to assist students in developing educational (vocational, life) plans based on the recognition of their own unique style.
4. To provide the means whereby college staff members may consider the potentials and problems of personalized education for their college.

Background Information

Cognitive styles reflect individual differences in information processing. According to Messick (70), they are "unconscious habits that represent an individual's typical modes of perceiving, thinking, remembering, and problem solving." They are typical ways of processing information, regardless of whether that information has its primary sources in the world outside or within the individual. As Witkin (74) notes, the term cognitive can be misleading since they are manifestations in the cognitive domain of still broader dimensions of functioning that cut across other psychological domains, including personality and social behavior. Ausubel (68) sees them as both individual differences in cognitive organization and various self-consistent personal tendencies that are not reflective of human cognitive functioning in general. Witkin makes the point that they are actually broad personal styles of information processing.

Although the exact wording of definitions of cognitive style may vary among researchers, all definitions stress individual differences in information processing. Certain other characteristics of style are generally agreed on by researchers in the field. An individual's style, for example, generally tends to stablilize in early adolescence. Thus cognitive styles are generally regarded as "stable, relatively enduring self-consistencies in the manner or form of cognition" (Messick 70). However, not everyone has a dominant cognitive style on all dimensions of style. Since styles are bi-polar in nature, the individual who has a particular style on any dimension will fall at one end or the other of the continuum. Cognitive styles are, as is reflected in Messick's definition, generally regarded as unconscious habits. They are spontaneous, unplanned responses to a given situation. As such, they should be distinguished from strategies which are conscious, planned responses, responses that an individual has learned to use in a particular situation. It is when an individual is confronted with a new or ambiguous situation that his style will tend to dominate. It is also important to note that styles, unlike many cognitive and personality factors can be assessed by non-verbal, perceptual means.

Witkin, Messick and Kogan all stress the importance of distinguishing cognitive styles from abilities. Kogan (71) notes a difference in emphasis between the two. "Abilities concern level of skill - the more and less of performance - whereas cognitive styles give greater weight to the manner and form of cognition." Witkin (75) states simply that style "appears to be more related to the 'how' than to the 'how much' of cognitive functioning".

Different cognitive styles have developed both from psychological research and from practitioners interested in individual differences. A variety of cognitive styles have been identified in the psychological literature. Messick (70) lists and describes nine cognitive styles which have been the object of systematic theoretical and empirical examination. These nine appear to be the

most solidly established in psychological research. In addition to the nine identified by Messick, Kogan (71) has researched a dimension known as risk-taking vs. cautiousness. "The dimension refers to individual differences in choice of 'high payoff-low probability' options." Although each of these dimensions were identified and researched by different researchers, they share certain common characteristics. All dimensions originated through psychological research. They are all bi-polar in nature, and each bi-polar dimension represents individual differences in information processing habits or modes. Not all individuals have a particular style on each of these style dimensions. However, those who do have a dominant style, who fall at one end or the other of the continuum of a particular dimension, will process information differently from someone at the other end of the continuum. These styles tend to be stable over time and the "value" of having any particular style is dependent upon the situation.

McKenney and associates at the Harvard Graduate School of Business developed a model of cognitive style which has its origins in the works of Brunner and Witkin. The basic premise of the model is that the world imposes high quantities of data on the individual and that in response, the individual selects and uses only part of that data as "information" (Nelson 74). Rather than being bi-polar, this model includes two dimensions affecting different aspects of information processing: information gathering and information evaluation. The information gathering aspect is the perceptual process by which the mind organizes and codes the wide variety of visual and auditory stimuli it encounters. Individuals may be either preceptive or receptive in this process. The information evaluation dimension relates to problem solving and reflects differences between a systematic and an intuitive approach. Those who have a dominant style on this model are said to have information processing space which delineates the extent to which they tend to use each of the four modes. Initial research with this model was with business school students.

Eleven cognitive styles were introducted to project participants, the ten identified through psychological research and the McKenney model. A listing of these styles and their definitions is contained in Appendix A.

Description of the Project

Selection of Participants

During the summer of 1974, letters were sent to presidents of all public and private community colleges, Agricultural and Technical Colleges and Educational Opportunity Centers in New York State announcing the project. Colleges interested in participating were asked to write the Center. Forty-two letters of interest were received. Follow-up phone calls we made to determine extent of interest and a final selection of colleges was made. An attempt was made in the selection to assure both a geographic distribution and a distribution of the various types of colleges. Not all colleges invited to participate were able to do so. The final list included two Educational Opportunity Centers, two Agricultural and Technical Colleges, two private community colleges, ten SUNY community colleges, and five CUNY community colleges.

Colleges were asked to select a team of five, including one counselor, one faculty member and one administrator to participate in the project. One person designated team leader, was financed by the grant to attend four workshops. One additional person for each college attended at the expense of the college. This second person was to be a different individual for each workshop. It was the responsibility of the team leader and the team member attending each workshop to share the information from the workshop with team members not attending. Twenty-three teams participated.

Since the first year was exploratory in nature the project staff hoped for a diverse representation on the teams. When it was discovered that no continuing education personnel were present on any of the teams, New York City

Community College's division of continuing education was asked to participate.

The Virginia Community College System also sent a team. The team was composed of staff members from the office of the Chancellor of Community Colleges. This staff had already developed an interest in cognitive style through a workshop conducted for them by two Project Priority staff members, Bosco and Martens. They wanted to be further trained in order to present cognitive style information to counselors and faculty in Virginia Community Colleges. Center staff felt it was appropriate to assist the Virginia Community College System in their efforts.

Participating Colleges and Team Leaders:

Bronx Community College	Anita Baskind, Professor-Student Development
Broome Community College	Gary Reddig, Vice-President for Student Affairs
Buffalo Educational Opportunity Center ...	Claudia Chiesi, Coordinator for Program Development
Canton Agricultural & Technical College ..	Carl Glenister, Director of Counseling
Clinton Community College	Elizabeth O'Leary, Director of Counseling
Cobleskill Agricultural & Technical College.	Ronald Hileman, Professor-Accounting
Community College of the Finger Lakes	John Champaigne, Director of Developmental Studies
Corning Community College	Dale White, Director of Special Programs
Genesee Community College	David Peters, Dean of Students
Hostos Community College	Carmen Quesada, Assistant Dean of Students
LaGuardia Community College	LaVergne Trawick, Counselor
Maria College	Peter Idleman, Dean for Academic Affairs
Monroe Community College	Edward Mills, Director of Counseling
North Country Community College	Edward Stodola, Director of Counseling
New York City Community College	Ruth Lebovitz, Counselor
New York City Community College	Victor Lauter, Dean of Continuing Education

Staten Island Community College.....	Elizabeth Worthman, Department of Counseling
Suffolk County Community College	Herbert Zagarow, Director of Psychological Services
Sullivan County Community College	Mary McCarty, Associate Professor-Science/Math
Trocaire College	James Lanz, Vice-President for Academic Affairs
Ulster County Community College	John Hjelmeland, Counselor
Virginia Community College System	John Lavery, President John Tyler Community College
Westchester Educational Opportunity Center	Kathleen Hart, Counselor

Project Activities

The project was designed to include three interlocking sequences geared to assisting local colleges in improving the education provided students. The total scope of the project also included a final assessment of learning and recommendations. The three sequences of this project were aimed at assisting colleges in planning and carrying through projects aimed at exploring the use of cognitive style information. The three sequences included: seminar, colloquium, and a series of statewide workshops. As the project progressed the final activity, a summary and evaluation with Dr. Cross, was expanded to include workshop and colloquium participants. In its expanded form it became the fourth sequence of the project.

Seminar

The first project activity, held in July, 1974, was designed to assist center staff in furthering their information about and understanding of cognitive style. This seminar included project staff and a small group of noted researchers on cognitive style (see list p.ii). Dr. Cross assisted in the design of the seminar and chaired the sessions. The objectives for this sequence were:

1. Participants will provide a synthesis of current research applicable to the problems and objectives defined in the proposal.
2. Participants will analyze the scope and framework of particular learning style theories.

3. Participants will provide written suggestions for potential implementation of learning style theories in New York State two-year colleges.

The seminar provided a great deal of useful information for Center staff. Following the seminar an extensive report was written by the Project Director. This report included a synthesis of the research information discussed and suggestions regarding potential implications (see appendix B). Excepts from the report were distributed to participating colleges during the workshop sequence.

Colloquium

The colloquium sequence represented an analysis and processing of the seminar information to establish the concerns community colleges might face in terms of utilizing information about cognitive style differences. The one-day colloquium brought together state community college leadership representatives, representatives from New York State Education Department and the State University of New York (see list p.iii). This meeting was held October 18, 1974 and was chaired by Dr. Cross. The objectives of this sequence were:

1. Participants will utilize the synthesis of current research provided by the seminar to become familiar with the basic concepts of learning style theories.

2. Participants will develop a list of concerns and recommendations for New York State two-year colleges based on an analysis of seminar data.

3. Participants will develop a system for informing New York State two-year colleges of PROJECT PRIORITY and establish a selection process for involving teams from New York State Colleges.

The meeting included an introduction to the project, an overview of the information from the seminar, and a discussion of the potential implications of cognitive style. Participants were then asked to provide suggestions regarding studies that might be done and potential problems. In response to the charge of sharing and identifying ideas and potential problems for Project Priority, colloquium participants indicated the following:

I. SUGGESTED STUDIES (Ideas)

- Course of instruction for students in Cognitive Style to help student learn how they learn.
- Assisting students in coping with switching subjects; i.e. different styles present in different subjects.
- Promote staff interaction -- communication.
- Help student modify their Cognitive Style.
- Application of Cognitive Style to students in Continuing Education classes.
- Involve faculty in local campus research design.
- Provide ways for faculty and students to enter into a Win-Win strategy.
- Career guidance as related to Cognitive Style.
- Relationship of Cognitive Style to instruction based upon competencies.
- Work to explode myth, i.e. vocational students are already better matched.
- Design research to validate gut level assumptions held by people who have attended colleges about how learning best takes place.

II. POTENTIAL PROBLEMS AND CONCERNS

- Money and time for faculty and teams to develop learning strategies for different styles.
- Some faculty will actively resist involvement.
- Danger of teams being set up as experts.
- Administrators will want to know what specific outcomes are -- improve G.P.A., lower attrition, etc.
- Faculty will want to know what they will be able to do better than they do now.
- Need to avoid being expected to give answers rather than establish hypothesis for research design.
- What happens after Project Priority? This needs to be spelled out.
- Why study Cognitive Style instead of some instructional concerns? Will need to be answered.
- Teams should not feel compelled to sell anything -- should function as part of campus planning, etc.
- Definition of Cognitive Style used by each campus team should be uniform and understood.
- Cognitive Style being viewed as a panacea.
- Temptation of team to respond to questions empirically rather than being flexible enough to say, "I don't know." "How can we work on it?"

colloquium participants were particularly concerned that the project and the information be regarded as exploratory in nature. This concern was shared by project staff and communicated to workshop participants.

Workshops

The series of four Project Priority workshops was designed to provide an understanding of the theory and concepts of cognitive style and to develop procedures which would be useful in implementing this information. Participating teams were asked to develop a project to be conducted on their campuses to explore the usefulness and practicality of the information.

The workshops moved sequentially from an introduction of the concept, to testing and implementation ideas and concluded with a specific focus on designing campus projects and evaluating the impact of cognitive style. Each of the workshops was designed by project staff in coordination with a team of participants and the project's continuing consultant, Dr. Nelson. These teams and Dr. Nelson also served as resource consultants for the workshops (see list p. i).

The first workshop, Recognition, was held October 20-22, 1974. It was designed to introduce the concept of cognitive style, to teach the eleven cognitive styles and to begin a consideration of the potential implications of cognitive style for two-year colleges. The objectives were:

I. Participants will discuss the importance of recognizing:
   1.1 Individual Cognitive Style differences.
   1.2 Cognitive Style's application to Community College programming.

II. Participants will demonstrate familiarity with various Cognitive Style theories:
   2.1 Participants will be able to write a definition of Cognitive Style.
   2.2 Participants will be able to list at least 2 differences between Cognitive Styles and abilities.
   2.3 Participants will be able to list at least 1 dimension of Cognitive Style which they think might provide useful information for them in working with two-year college students.

III. Participants will write objectives for their teams:

3.1 Participants will write a long range objective for their team's impact on campus.
3.2 Participants will write an operational objective for accomplishment by their campus team prior to the Assessment Workshop.

Dr. Sperry served as a consultant to introduce the cognitive styles identified through psychological research and Dr. Nelson introducted the McKenney model.

The evaluation of the workshop indicated that participants were generally able to define cognitive style, to differentiate styles from abilities and that there was an increased familiarity with the various cognitive styles. Participants also developed objectives for their teams to accomplish before the next workshop.

The second workshop, Assessment, was held November 17-19, 1974. The specific purpose of this workshop was to introduce testing instruments and other informal ways of assessing cognitive style. The objectives of this workshop were:

I. Participants will be able to use current methods of assessing cognitive style differences:

1.1 To identify selected standard measures of cognitive style.
1.2 To identify the cognitive style dimension being measured by various instruments.
1.3 To select and participate in the taking of at least one cognitive style instrument.
1.4 To evaluate the personal effect of taking the selected instruments.
1.5 To compare advantages and disadvantages of selected instruments.

II. Participants will use cognitive style data to develop cognitive profiles for college instruction, counseling and decision making:

2.1 To identify one non-test method of assessing cognitive style.
2.2 To participate in a discussion of the application of cognitive style information to an instructional setting, a counseling situation and an administrative decision making situation.

III. Participants will develop a plan for looking at and seeing how this new process fits their respective campuses:

3.1 Participants will review objective for Impact Project from Recognition Workshop
3.2 Participants will write an operation objective for assessing Cognitive Style on their respective campuses.

Participants were introduced to 15 tests, many of which they took themselves. These tests were explained by Dr. Ekstrom and Dr. Nelson. The workshop team introduced three non-test assessment procedures, one for career counseling, one on administrative decision-making, and one for observing teaching style and student reaction. The terminology which was introduced at the first workshop was also reviewed.

The evaluation of this workshop showed that team leaders coming to their second workshop felt they had a reasonable understanding of five cognitive styles. Participants attending their first workshop felt they understood only four of the styles. By the completion of the workshop most participants were able to say which cognitive style five selected tests measured and to suggest methods, other than tests, that might be used for assessment. The evaluation also reported teams became more specific in the formulation of their own objectives at the second workshop.

The third workshop, Implementation, was held January 26-28, 1975. It was designed to suggest a variety of ways to use cognitive style in a two-year college setting and to assist teams in setting up their own campus projects. The objectives were:

I. Participants will become familiar with a variety of counseling and instructional procedures which recognize individual differences.
   - 1.1 Name two of the matching strategies identified by Sam Messick.
   - 1.2 Identify one strategy appropriate for their campus and list the steps necessary to accomplish it.

II. Participants will consider the implications of diverse cognitive styles for college planning and program development.
   - 2.1 Identify existing administrative decision-making structure (lines of communication, organization, scheduling flexibility).
   - 2.2 Focus on potential institutional change through
     - 2.21 Informing the people who approve change
     - 2.22 Working with people who can affect change.
   - 2.3 Translate the mission statement of the college to foster support for a project in cognitive styles.
   - 2.4 Identify environmental factors that could be particularly supportive, or particularly blocking, in implementing projects.

III. Based on data from their campuses, participants will develop a specific implementation plan for utilizing cognitive style information.

3.1 Identify the steps in implementation.
3.2 Identify the situation at home campus to be studied.

Dr. Keen spoke with participants about a variety of areas where cognitive style may be used and suggested the development of their own assessment procedures where current tests were inappropriate. A learning laboratory of materials was set up to provide a variety of formats for the presentation of information prepared by the workshop team. Dr. Keen and Dr. Nelson also assisted participants in designing their own projects.

The evaluation for this workshop was designed to assess the transfer of knowledge from the first two workshops to the implementation situation. Although many of the participants particularly those attending their first workshop, experienced some difficulty with the task designed to measure this on the pre-evaluation form, they were generally able to do so on the post evaluation.

The final workshop, Evaluation, was held February 23-25, 1975. The major purpose of this workshop was to assist participants in the design and evaluation of their campus projects. The objectives were:

I. Participants will develop a specific method for evaluating their on-campus Project Priority project, including both assessment and implementation procedures where applicable.

1.1 Participants will list the four stages to be considered in the planning and evaluation of campus projects: design, installation, process, and product.
1.2 Participants will identify two types of data that might be gathered for evaluation of their campus project, hard and soft data, and list one method that might be used to collect each type.
1.3 Participants will plan the evaluation of their campus project to include some measure of:
-- what the project accomplished
-- the impact of the project on the total college campus
-- problems encountered in implementing the project.

II. Participants will informally evaluate their involvement in Project Priority to date and made any necessary adjustments.

2.1 Prior to the evaluation workshop campus teams will complete an "unfinished business" form listing any unanswered questions or concerns they have regarding their involvement in Project Priority.
2.2 Participants will participate in an "unfinished business" session with workshop and center staff to discuss the above questions.
2.3 Where appropriate participants will meet individually with workshop and/or Center staff to discuss questioning regarding their involvement in the project.
2.4 Team leaders will meet and in an informal discussion evaluate their involvement in Project Priority to date.

In order to assist teams with the design of the project the workshop team prepared video-tapes of their own campus projects and viewing guides to assist in identifying critical planning points. Dr. Moore and Dr. Nelson assisted participants with the evaluation of their projects. They were assisted by an additional team of four individuals who has experience in the area of evaluation. Dr. Moore, Dr. Nelson and project staff also worked with participants on any unanswered questions on cognitive style.

The evaluation showed that many of the team leaders indicated their project was ready to go by the end of the workshop and that most of their questions were answered. As the evaluator commented, "The real test of this workshop will be the reports of the various projects."

Summary Activity

In the original design of the project the summary activity was to be a meeting of Dr. Cross and the project staff to review and evaluate the project. However, as the project progressed it was felt that it would be valuable for the teams to participate in this evaluation process. Therefore, a one-day meeting was held June 24th to accomplish the following objectives.

1. To provide a written report to the field on the accomplishment and implications of the project.
2. To consider follow-up or continuation activities that may be of value to New York State two-year colleges

Although funding was not available, 15 team leaders and members were able to participate. Seminar and colloquium participants were also invited and several attended. The first objective was accomplished through the presentation of both oral and written reports on the campus projects. Following these reports, discussions were held on the implications of the project and recommendations for continuation.

In small group discussions participants identified the following as being priorities for continued work with cognitive style:

-- A book of readings in cognitive style, including a battery of tests
-- Continued workshops
-- Compiling and dissemination of research information
-- Research projects
-- Campus visits by Project Priority Staff
-- Further work on faculty awareness.

In her concluding remarks Pat Cross commended the participants for their excellent work. Her recommendations were that they continue to work with cognitive style information in:

1. Faculty awareness projects
2. Student awareness
3. Program design
4. Involvement in research.

Evaluation

The project evaluator, Dr. Bosco, was present at all project activities and provided the Center with both formative and summative evaluation reports. Comments from the evaluation reports on each of the workshops have been included in the project description section of this report. A final evaluation was also conducted and each of the campus projects was reviewed. Dr. Bosco's complete report is attached (see Appendix C).

The final evaluation of Project Priority, conducted by Dr. Bosco, focused on knowledge of cognitive style and the application on cognitive style information on campus. This evaluation, mailed to all workshop participants in June, 1975, was completed by ten team leaders and twenty team members. The results showed that both team leaders and team members felt that their understanding of cognitive style had increased from poor to good over the course of the project. Nineteen of the respondents indicated that they had implemented cognitive style with students and tested students on their campuses. Twenty-nine of the thirty also indicated that cognitive style information had been presented to faculty and staff on campus. Team leaders rated the campus impact of their work as average while team members were split in their ratings between average and good.

Participating colleges were also asked to send a report on their campus project to the Center. Sixteen of the twenty-one participating colleges completed their reports by the June deadline. These reports are summarized in the final evaluation report. Campus projects were of two types, staff development sessions to create faculty awareness of cognitive styles and the testing of students to get additional information about the use of cognitive style with students.

In his final evaluation report Dr. Bosco concluded, "It is manifestly clear from the specific data presented in the body of this report that the general objectives of this project have been more than just 'met'. What the data does not show is the enthusiasm and verve which this project has generated on the institutions which participated in it."

In addition to the evaluator's data, project staff sent out a survey form in June to obtain more detailed information on the workshops and the total project. This survey was completed by 22 team members and nine team leaders from 14 New York State colleges and the Virginia Community College System. (The colleges not completing the survey were Bronx, Clinton, Community College of the Finger Lakes, Corning, LaGuardia, Ulster, and Westchester EOC). The purpose of this five page, open-ended survey was to obtain the participant's reactions to the project activities at the end of the project and to obtain their suggestions for future planning. The participants who responded were almost exclusively administrators and faculty members and approximately half of them had attended more than one project activity. Eleven checked that they had worked on faculty awareness projects and another nine on projects using cognitive style with students. The cognitive styles most frequently worked with by participants were:

Field dependence-independence (13)
Reflective-Impulsive (9)
McKenney Model (8)
Systematic - Intuitive (7)

Participants were asked which activity at each of the workshops was most helpful to them. The most frequently selected activity for each workshop was:

Recognition - small group discussions
Assessment - taking the tests
Implementation - Peter Keen's presentations
Evaluation - small group discussions of projects

When participants were asked which activity of the total project was most significant for them the most frequent response was preparing the campus project.

Participants were also asked which activities were the most helpful in planning their campus projects. The activities most frequently mentioned were the sessions at the evaluation workshop. Other activities mentioned included discussions with workshop consultants and testing. The activities listed as most helpful depended on the workshops attended and the type of campus project. Those who conducted faculty awareness projects seemed to find the recognition workshop most helpful. Most people seemed to benefit from the small group discussions at the various workshops.

In making recommendations for changes in the project, participants emphasized ways of helping the total team become more involved in the project. The most frequently mentioned suggestion was to have the total team attend all (or at least two) workshops. Some participants listed the tests as the most helpful materials while others felt there were gaps in the testing that caused problems. Participants mentioned Drs. Nelson, Keen and Hoddick and Center staff as being most helpful to them. Most participants completing the survey said that they planned to continue their work with cognitive style.

Conclusions and Recommendations

The evaluation of project staff, participants and the evaluator was that the project accomplished it's major goal of exploring the applicability of cognitive style information for the two-year college. Project staff also feel that the project meet it's four general objectives which focus on programming for student diversity. Through the workshop experiences and the campus projects team members focused on the use of cognitive style information

in improving counseling and instruction. Although the nature and design of the projects varied for each of the campuses the results lead to the development of certain conclusions.

Most of the participants in the project concluded that cognitive style information was valuable to faculty in their classroom teaching. For some it suggested additional approaches to explore with students who are experiencing difficulties. For others it became an additional factor to consider in the design of materials. Participants also concluded that this information was valuable to students. Students involved in the campus projects generally seemed receptive to the idea and interested in learning more about themselves. Most campus teams concluded that this information was important enough to share with other faculty and conducted workshops on their campuses. All but three of the colleges involved in the project indicated at least a desire to continue their work with cognitive style.

Although participants and staff were extremely positive about the immense amount of work that had been accomplished over the year, many questions remained unanswered. While we felt cognitive style information was valuable we could not provide all the specific recommendations as to how it was valuable. Many of the excellent suggestions for studies provided by colloquium participants early in the project were still excellent suggestions. Thus another major conclusion of participants and staff was that the project should continue. Once the basic knowledge was obtained and the applicability explored as it had been, participants were prepared to focus on specific instructional and counseling uses of this information. Additional funding has been requested to continue the work begun by this project.

Participants have also made specific suggestions regarding the direction further work should take. In response to questions on the evaluation form, team leaders and team members indicated that efforts with cognitive style on

their campuses could be improved through faculty workshops. They also indicated that that work should take the direction of classroom application. The primary support they wanted from the Center was additional workshops, information on other campus projects, consultants and campus visits by Center staff. The support on campus that they most often indicated they needed was money, time, and approval from administration. Of major concern was the emphasis on helping the total team become involved in the project. Participants at the summary activity also recommended that research projects, a battery of tests and a book of readings on cognitive style were needed.

It is the conclusion of project staff and consultants that the considerable amount of work which went into this project has been extremely valuable for all concerned. We now feel confident that cognitive style information has direct applicability to the two-year college. We recommend that this work continue in the directions suggested by Dr. Cross at the Summary Activity:

1. Faculty Awarness Projects
2. Student Awareness
3. Program Design
4. Involvement in Research.

Project staff wish to commend the team leaders and members for their outstanding work and dedication to the project. We also thank the consultants for their support and involvement. Without the efforts of these outstanding individuals the project would not have been able to accomplish its goals.

Cognitive Style Models

Appendix A

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MODEL	DEFINTION	PRINCIPAL RESEARCH	MEASURING INSTRUMENT
1. Field independence vs. field dependence	Differentiated (independent) vs. undifferentiated figure-ground relationships. Field independents tend to extract a figure from its ground or background. Field dependents tend to see figures only in relation to their ground; they are superior to field independents in such tasks as memory for faces and they seem to be socially more sensitive.	Witkin	Embedded Figures Test, Rod & Frame Test; Body Adjustment Test
2. Scanning vs. focusing (defined as strategies, not as attentional differences)	Posed a problem requiring identification of relevant as opposed to irrelevant information, scanners look for attributes and proceed in a constraint-seeking, broad to narrow fashion while focusers generate more global, self-sufficient or all-encompassing hypotheses, proceeding in a trial-and-error fashion. If a scanner makes an error, he has nonetheless learned something while a focuser cannot tell which part of his hypothesis is wrong. When the focuser is right, however, he attains solution faster than a scanner.	Menninger Foundation; Schlesinger; Bruner, Goodnow, Austin	Twenty Questions Concept Attainment Tasks (e.g., Bruner et.al. in A Study of Thinking
3. Broad vs. narrow categorizing	The broad categorizer prefers a small number of categories containing a large number of items, while the narrow categorizer prefers a larger number of categories with a small number of members. The broad categorizer admits more items or ideas as similar while the narrow categorizer rejects items and differentiates concepts more thoroughly.	Menninger Foundation	Category width Tasks, Object sorting Tasks

MODEL	DEFINITION	PRINCIPAL RESEARCH	MEASURING INSTRUMENT
4. Leveling vs. Sharpening	In taking in new information, the leveler shows greater readiness to assimilate new stimuli to previous categories while the sharpener tends to differentiate new instances from old. While categorizing style applies to free categorizing exercies, leveling and sharpening are examined in a more controlled way using successive presentation of stimuli rather than simultaneous presentation.	Menninger Foundation; Gardner; Santostephano	Schematizing Test Wagon Test
5. Constricted vs. flexible control	Constricted control shows greater susceptibility to interference by irrelevant information while flexible control is evidenced by resistance to interference.	Menninger Foundation; Kleen	Stroop Color-Word Test
6. Tolerance vs. intolerance for incongruous or unrealistic experiences	Tolerance is revealed by more frequent reversals readier adaptation to unusal perceptions. Intolerance involves the demand for more information before the unusual is accepted.	Menninger Foundation	Aniseikonic lenses; reversible figures
7. Impulsive vs. reflective responding	Impulsivity is characterized by quick responding while reflectiveness involves considering alternate classification or responses. When he's right, the impulsive is faster; the reflective makes fewer errors.	Fels Institute; Jerome Kagan	Matching Familiar Figures; Identical Pictures
8. Analytic vs. nonanalytic conceptualizing styles	Analytic style entails differentiating properties or attributes while nonanalytic responses may be thematic-descriptive or relational. The analytic is more attentive to similarities in property, the nonanalytic more attentive to functional relationships.	Fels Institute; Jerome Kagan	Conceptual Style Test

MODEL	DEFINITION	PRINCIPAL RESEARCH	MEASURING INSTRUMENT
9. Risk-taking vs. Caution	The risk-taker will take the risk when there is a low probability of a high payoff, while caution entails preferring low risk with a high probability of low payoff. In cost-payoff situations, the risk-taker tries to outwit the odds, the cautious person tries to identify the safest odds.	Kogan and Wallach	Cost-payoff games
10. Cognitive complexity vs. simplicity	Cognitive complexity is characterized by hierarchic integration while cognitive simplicity is reflected by use of dimensions of difference. Cognitive simplicity is favored when only horizontal analysis along a dimension is necessary. Cognitive complexity is favored when vertical analysis of relations between dimensions is necessary.	Kelly; Shroder, Driver, Streufert	REP Test Paragraph completion This I Believe Test
11. McKenney two-dimensional model Assimilation: Preceptive vs. Receptive Planning: Systematic vs. Intuitive	The preceptive individual assimilates information to his concepts or categories while the receptive individual assimilates data as raw as possible. Preceptives categorize or chunk information as it comes to them while receptives can more often take a new look at the data presented, since they've stored it as data not concepts. Systematic individuals create orderly, sequential plans or strategies; if you have a good plan, you'll find a good solution. Intuitives prefer ideas, identifying the problem and skipping from part to whole analysis; a good solution for them is good because it solves the problem they defined.	McKenney, Keen, Nelson, Botkin	Tasks Assessing each mode: e.g., Identical Pictures (Receptive), Elaboration (Preceptive), Paper Folding (Systematic), Scrambled Words (Intuitive)

January 24, 1975