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ABSTRACT

This paper describes a cognitive and socio-moral developmental, learning style, and attitudinal study. The subjects were 168 college students enrolled in a general education "diversity core" undergraduate course on social diversity and social justice in the spring of 1990 at a large northeastern public research university. Ninety-seven students completed the study or 58%. The study replicates and confirms the findings of an earlier study. It presents and statistically analyzes pre- and post-test results from four assessment instruments. The study describes each instrument, reports the findings of a positive direction of change on all measures for all students in the sample, and provides statistical analyses between group differences, course effects, gender effects, and ethnic/cultural differences. Specific questions addressed by this initial study include: (1) descriptive statistics or what are the demographic, developmental, and attitudinal characteristics of students who enroll in this social diversity course? (2) similarities between the student samples or on the basis of the descriptive statistics, do the two major sources of undergraduates constitute the same undergraduate population? (3) effect of the course or does the credited semester long course on social diversity have a statistically significant effect on the epistemological and moral development of students who enroll or on changes in their social attitudes and learning style orientations? and (4) effects of age, college class, gender, and racial identity or if effects attributed to the course are found, are they the same if demographic variables of age, college class, gender, race, and ethnicity are considered in relation to the developmental, learning style? (Author/DK)

CONNECTING THEORY AND RESEARCH TO COLLEGE TEACHING PRACTICE:

DEVELOPMENTAL FINDINGS APPLIED TO "SOCIAL DIVERSITY" CLASSES

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M. Adams, Y. Zhou, 1993

CONNECTING THEORY AND RESEARCH TO COLLEGE TEACHING PRACTICE: DEVELOPMENTAL FINDINGS APPLIED TO "SOCIAL DIVERSITY" CLASSES

College and university campuses over the past decade have experienced continuing violence and harassment against students on the basis of gender, race, sexual orientation and religion. This includes some of the more dramatic and well-documented racial confrontations at Dartmouth College and the Universities of Michigan and Massachusetts, the increasing reports of date-rape and sexual violence, the harassment of gay, lesbian or bisexual students in the residence halls and at campus social events, the anti-Semitic graffiti and menacing telephone threats, the drive-by insults, racial slurs and demeaning classroom assumptions about reverse racism and affirmative action cases (Dalton, 1991; Evans and Wall, 1991; Hively, 1990). It also includes the less dramatic or documented nuances that create discomfort for students from underrepresented social groups in the classroom and residence halls and impede their ability to pursue their education in this nation's colleges and universities.

These inter-student dynamics understandably reflect the intergroup conflicts experienced within the larger community and national context. Two decades after the Kerner Commission (1968), an ACE Commission on Minority Participation in Education and American Life reports "that America is moving backward -- not forward -- in its efforts to achieve the full participation of minority students in the life and prosperity of the nation" (One-Third of a Nation, 1988). It urges colleges and universities to

accept the responsibility to become "a vital social laboratory in which solutions to knotty national problems (can be) tested and perfected" (ACE, 1988). It especially urges creative efforts to value diversity in the academic atmosphere and campus culture. The "Social Diversity" course and related research discussed in this paper is one such experimental curriculum whose overall goal is the recognition and unlearning by students of their intergroup stereotypes and prejudiced attitudes, their learning of new intercultural perspectives, and their development of strategies to intervene in harassing and discriminatory behaviors.

These dimensions of campus life provide the impetus for utilizing research findings to refine our actual educational goals and practice as suggested in this paper and elsewhere (Adams and Marchesani, 1992). The idea of using college-level courses to educate students about social diversity and social justice, and to help them develop specific skills and competencies to interact equitably in an increasingly multicultural society, is a relatively new one. There are few curricular or pedagogical models for such courses. Our own assumptions about instructional and curricular design (as distinct from course content) in such an educational effort are derived primarily from social cognitive development theory. This means that we think of our students' learning and behavior in developmental terms, considering the cognitive, affective and behavioral skills we hope to change by the design of such a course. Throughout the design and teaching process, we revise and reformulate our developmental hypotheses about our students and adjust the teaching/learning process.

We have been struck by the "difficult dialogues" in social diversity courses that inhibit the interchange of opinion and perspective especially valued in higher education. Instructors in some of the new courses on social diversity and social justice report "resistance" to information that contradicts popular stereotypes, difficulty in moving between specific facts or observations and broader systemic abstractions, hot disputes or stony silence instead of reasoned discourse. These glimpses of resistance and difficulty, especially in the college courses that deal centrally rather than peripherally with these subjects, provide grist for the mill of adult developmentalists. Consider this report from one such college classroom:

> My students express some disappointment, particularly early in the semester, that I do not provide them with "answers" to the questions of intergroup relations. Students frequently come to my course with a dualistic worldview, looking for just two sides to every issue -- a right side and a wrong. They come ready to argue and defend what they view as right and attack and ridicule what is wrong, or they feel guilty if they might be perceived as being in the wrong....It takes a considerable amount of time as well a personal and intellectual work for students to accept the absence of answers and to bring an intellectual perspective that incorporates many competing and complementary views of individual issues (Schoem et al, 1993, p. 17).

The values, beliefs and biases students bring to these classes on social diversity and social justice, the tenacity of old stereotypes, the difficulty of challenging entrenched modes of thinking, the unexpectedly emotional attachments to thinking that is rooted in trusted home, school and religious communities, suggest a powerful and multidimensional developmental agenda if social diversity and social justice courses are to succeed in the college classroom.

For these among other reasons, the educational effort described in this paper differs from more traditional "diversity" teaching efforts in bringing an explicit adult cognitive development set of theories to bear on the educational enterprise. The evolution of this course has been nourished by generative developmental theories in epistemology (Perry, Belenky et al), moral judgment (Kohlberg, Gilligan, Rest), racial identity (Jackson and Hardiman), psychosocial aspects of identity (Erikson and Chickering), social perspective-taking (Selman) and self-reflection/self-knowledge (Weinstein and Alschuler). The "bridge" between these theories and educational practice for us has been the interaction of the research and the applications described below.

Broadly considered, this study concerns the developmental and attitudinal characteristics and changes of college students as they are exposed in class to social and cultural differences, systems of social inequity, and applications of their learnings to everyday campus life. It is part of an on-going exploratory study (Adams and Zhou, 1990) of cognitive development, learning styles, and attitudinal change among college undergraduates who participate in a required General Education course called "Social Diversity in Education." Our research questions include (1) the demographic, cognitive developmental, attitudinal and learning style characteristics of students who enroll in our General Education "Social Diversity" courses and (2) course effects on cognitive, attitudinal or learning style change as well as effects attributable to demographic factors such as age, college class,

gender and race/ethnic heritage. Our interpretations of these findings guide and modify our goals for student learning outcomes and shape the instructional strategies and design of the course. The findings also lead to new research questions, especially the question of more finely-grained developmental measures that correspond more precisely to developmental skills in course contexts or "real world" applications. Thus, the developmental findings enable us to confirm or correct curricular and instructional practice, at the same time that both research and classroom experience lead us to raise new research questions.

In this paper, we start by specifying our course goals. We believe these goals reflect the cognitive developmental skills we consider necessary for growth and success in this course. Second, we describe current research that focuses upon only a few of these cognitive developmental skills. In this stage of research, we focus upon those cognitive development theories that are widely enough in use, with a broad data base, to provide comparable initial baseline data in areas closely related to course skills. Third, we present and analyze our findings and discuss some of their implications in providing a student profile. Fourth and finally, we revisit our course curriculum and pedagogical procedures in light of the findings to consider the educational goals and classroom practice highlighted by these data, while noting that the developmental skills investigated in this phase of research are by no means exhaustive and that a more finely-grained, context-specific, qualitative study will likely constitute our next research stage.

COGNITIVE DEVELOPMENTAL SKILLS AND COURSE GOALS

Background for the Study

The undergraduate course on social diversity and social justice is conducted in multiple sections at a large Northeastern state university campus with an overall undergraduate enrollment of 16,000 and a residence hall undergraduate population of 11,600. Most of the students at the university and in the course, whether from mainstream or underrepresented social groups, come from more or less monocultural home and school communities that have little prepared them for the diverse populations they encounter on campus, the multicultural course content of some of their classes and the range of cultural programs in the residence halls and social activiies on campus. Whether or not they are themselves from dominant or targetted social groups, the expectation on campus of receptivity and acceptance toward other cultures and respect for social differences may not have been practised or even valued in their home neighorhood communities or among their peers and may even contradict the assumptions and beliefs of their families or religious backgrounds.

The campus has several other characteristics that shape the context of our study: (1) A fairly recent overhaul of the General Education curriculum to include social and cultural diversity as a required area for study. Our developmental findings are applied to one such course which fulfils the diversity requirement. (2) Opportunity to use residence hall situations as a course context for the everyday experiences examined in the course. All sections

of this course take place in residence hall sections and some sections are designated for Resident Assistants. (3) Slow and uneven movement toward a more multiculturally inclusive and equitable campus still punctuated at times by incidents of racial, sexual, homophobic and anti-Semitic harassment, backlash, resentment, misunderstanding and violence (Hurst, 1988; SAREO, 1988 passim).

The "Social Diversity" course is based on an educational approach which integrates cognitive development theory with the experiential aspects of social learning (Adams and Marchesani, 1992; Kolb, 1984; Belenky et al, 1986; Perry, 1981). Course content consists of aspects of social and cultural identity, social diversity and societal manifestations of oppression in the areas of gender, race, religion, sexual orientation, and physical/mental disability. Explicit student learning objectives for the course and intentional instructional strategies are based on the developmental theories described in this paper.

Course Goals in light of Cognitive Development Theory

Course goals include awareness, knowledge and interpersonal skills as the intercultural competencies we believe students will draw upon as they interact on the campus and as they prepare to live, work and build new families, schools and communities in rapidly changing, increasingly multicultural commuities. By raising awareness we mean that students become aware of their own multiple social identities as well as those that differ from theirs. By **knowledge** we refer to a knowledge of the broad dynamics as well as the specific manifestations of social

oppression (specifically racism, sexism, homophobia, anti-Semitism, ableism), sufficient to allow for continued future learning. We identify as conceptual understanding the methods of critical analysis drawn from those aspects of psychology and sociology which describe the socialization process and help account for the systemic maintenance of oppression. We also expect that students learn to recognize real-world examples by linking new concepts and perspectives to their own observation and experience, and that they be able to identify and practice new ways to intervene on their own behalf or as allies for members of targetted social groups. The residence hall locale for these classes dramatizes the many subtle or striking opportunities for recognition and intervention of course content in daily life.

Learning goals for the course have grown more modest and pragmatic as developmental research confirms our realistic appraisal of the cognitive and interpersonal skills of our students. Further, student change in the dimensions identified as course goals involves incremental developmental change in dimensions such as self-knowledge, self-other perspective taking, empathy, moral judgment and social identity development.

(1) "Raising Awareness": Awareness in this course primarily involves self-awareness with relation to one's own social identity and experiences, and those of others. Increased self- and other-awareness also includes the process, difficult for many undergraduates, of de-centering from one's formative socializing experiences with reference to race and ethnicity, gender, sexual orientation, religious beliefs and practices. Further, there is

the process, equally difficult, of placing personal experience and observation (one's own and that of others) in broad, systemic, theoretical perspective, a process of building abstractions out of concrete, sometimes personal facts.

Our understanding of social identity development has been informed by recent work on the development of racial identity (Hardiman and Jackson, 1992; Tatum, 1992; Helms, 1991; Cross, 1991; Phinney, 1990), gender socialization (Kaplan and Sedney, 1980) and sexual orientation (Evans and Wall, 1991). But we have had to consider whether social identity development may be a multidimensional construct, by which advanced levels of racial identity are built upon more complex self-knowledge and self-other perspectives (Weinstein and Alschuler, 1985; Selman, 1976, 1980; Benack, 1984).

Psychosocial identity development theory (Pascarella and Terenzini, 1991) also helps illuminate students' often competing developmental needs, on the one hand to establish an individual identity and more autonomous self and on the other hand to see the individual self also as a social group member implicated in the dynamics of systemic oppression. For example, students in dominant social groups especially tend to see themselves exclusively as "an individual" and "a person," while at the same time generically grouping members of targetted groups as "women" or "people of color," an internal contradiction that we believe may be related to competing social identity, psychosocial and cognitive developmental agendas.

(2) "Knowledge": This goal involves the traditional area of

college teaching, the acquisition and utilization of new information as a basis for further understanding. In the social diversity course, new information tends to generate dissonance and provide contraditions with prior stereotypes and belief systems.

(3) Conceptual Understanding: In the social diversity course, this is a higher order formal operational skill that involves a number of subsidiary skills. To name a few examples, we ask students to consider new information (#2 above) in terms of abstract principles or concepts; compare and contrast a range of social justice issues (racism and anti-Semitism, sexism and homophobia) at the abstract level of theory and the concrete level of specific issues; take perspective upon their own personal experience as "object" in relation to the experience of others or as an instance of theoretical principles. In this effort, we are helped by the "ways of knowing" epistemic theories of Perry (1970, 1981) and Belenky et al (1986) to anticipate students' tendency to dichotomize complex questions, to reduce multiple perspectives to choices of either/or, and at times to fail in their efforts to see relations between concrete information and broad principles and between examples presented in the classroom and experience presented in daily life.

(4) **Recognition of real-world examples:** This involves "transfer" or "lifting" from the specific domain of classroom learning to the messier arena of everyday life (Alexander and Judy, 1988; Perkins and Salomon, 1989). The cognitive developmental literature illuminates the difficulties of disengaging from inside one's personal experience sufficiently to

reflect from a broader or from a different social perspective (Kegan, 1982).

(5) Intervention skills: This involves self-other perspective-taking, self-knowledge, critical thinking about "ill-structured" problems, and the relative weighing of various solutions or options (Kitchener, 1982). Many of the skills noted above appear here as well.

METHODOLOGY AND INSTRUMENTS

The initial phase of research draws upon a repeated measure design to provide broadly based developmental baseline data for epistemological concepts -- namely, the concepts of the nature of knowledge, authority and uncertainty (Perry, 1970, 1981) and moral judgment (Kohlberg, 1969, 1976; Rest, 1976, 1986). The developmental instruments selected are the Measure of Epistemological Reflection (Baxter Magolda, 1983; Baxter Magolda and Porterfield, 1985, 1988) derived from the Perry scheme, and the Defining Issues Test (Rest, 1979, 1986, 1987) derived from Kohlberg's theory of the development of moral judgment. These research instruments are limited by their derivation from global epistemological and moral judgment theories and we question their precise applicability to student skills displayed in the day-to-day classroom context or campus environment. The applicability of these theories and instruments to the developmental skills of the course are described below.

Developmental measures are supplemented by an attitudinal measure of homophobia (Hudson and Rickett's Index of Homophobia or IHP, 1980) and Kolb's Learning Style Inventory (Kolb, 1981; Smith

and Kolb,1986); these also are described below. Our selection of paper and pencil assessment instruments rather than interview formats allows us a large baseline sample in this and in a preceeding study (see Adams and Zhou, 1990, for validity and reliability information on the four measures). Demographic data included gender, age, college class, academic major and parental occupation. During the Spring semester, 1990, all students enrolled in the multiple-section course "Social Diversity in Education" were asked to participate in an on-going developmental and attitudinal study. The multiple sections attract undergraduate students seeking to fulfill a general education core diversity requirement as well as resident assistants who were required to take the course as part of their training. Separate sections for general students and resident assistants' followed the same course curriculum and pedagogy. In addition, we had a section designated for students recruited from an academic support program for African heritage, Asian, Latino and Native American students (CCEBMS: the Committee for the Collegiate Education of Black and Minority Students).

The study was presented to all students as an effort by course planners to better understand and anticipate student attitudes toward learning and knowledge and toward several attitudes and skills involved in the course. Students were able to make immediate personal use of their individual Learning Style results and were aware of some of the applications of section-profiles by course-planners.

Students received the pre-test during the first week of

Students received the pre-test during the first week of classes and the post-test during the final week of classes. The MER, DIT, IHP and LSI were completed during the first and final weeks at home, and turned by the student into an Academic Affairs Office. Of 133 Resident Assistants enrolled in designated sections of "Social Diversity in Education" during Spring 1990, 68 completed pre- and post-tests (51%). Of 168 students enrolled in seven open sections of the same course, 97 students completed the study (58%).

The Perry Scheme and Measure of Epistemological Reflection

The process of cognitive development outlined in the Perry scheme (Perry, 1970, 1981) charts qualitatively different views of knowledge from certainty through uncertainty to contextual thought. It tracks students' gradual loss of the view that knowledge is certain and authority absolute (the Dualist, Positions 1 and 2), their realization that some uncertainty seems undeniable, that truth is not always known and that authorities suggest procedures rather than give answers (Multiplicity, Position 3), until, having embraced uncertainty as a new kind of certainty (Multiplicity, Position 4) they begin to think contextually (Relativism, Position 5) and to establish commitments within a relativistic framework (Positions 6 to 9).

This account of cognitive development from a dichotomous to a contextual way of thinking and from an external to an internal locus of authority for intellectual judgments, provides a useful conceptual framework for the multiple perspectives, the absence of certainties in social justice problem solving, the opportunities for complex problem-solving and abstract thought, the internal locus for judgments and decisions, and the broadening of authority and knowledge away from the teacher and toward one's peers and one's self that characterize aspects of Social Diversity education. The applicability of Perry's model to social perspective taking, the coordination of multiple frames of reference and ability to differentiate among experiences and points of view (Benack, 1984, 1988) confirm Perry as a model of choice, despite the limits of its originating research at an elite private college using primarily male subjects.

Further, the Perry model has been shown to suggest the emergence and evolution of social perspective taking and empathy (Lovell, 1990), meaning the capacity to coordinate multiple frames of reference and to differentiate "my experience" or perspective

from "your experience" or perspective (1981). "The relativist . . . can understand the differences in experiences as reflecting the differences in perspectives. Unlike the dualist, the relativist expects that people will have somewhat different interpretations of the same event. He or she sees no contradiction in multiple views of a situation, each having 'validity' or 'truth'" (Benack, 1984). Finally, the Perry scheme has become an accepted reference point for college instructional design and assessment (Knefelkamp, 1974; Widick, 1978; Mentkowski, 1983), by which learning environments are directed toward contradiction or disequilibrium to promote change, or toward support and moderated diversity when contradictions seem overwhelming.

The currency among college teachers of the Perry scheme because of its descriptive power, and the emergence of "women's ways of knowing" from a modified form of the Perry interview focussing upon subjects, prompted the development of the Measure of Epistemological Reflection (MER) (Baxter Magolda, 1983, 1984, 1989; Baxter Magolda & Porterfield, 1985, 1988). The MER is a standardized, gender-inclusive, practical and reliable production instrument written production task instrument, with a series of questions that probe separately six domains intermingled in Perry's research for separate written response and justification: educational decision-making, role of the learner, role of the instructor, role of peers, evaluation, and nature of knowledge. The justifications or reasoning structures evoked by the probes provide units of analysis or cues for coding by trained raters who use a scoring manual for position descriptions and reasoning structures within each of the six domains.

Moral Judgment and Defining Issues Test

Kohlberg's account of the development of moral judgment situates the emergence of complex and inclusive moral reasoning in one's encounter with increasingly complex moral perspectives or moral dilemmas that challenge one's present cognitive structure. Accordingly, Kohlberg has described an optimal developmental environment that involves exposure to higher levels of moral reasoning, stimuli that pose conflicts or contradictions to one's current reasoning structure, and an open discussion format in which conflicting moral views expressed by peers can be compared (Kohlberg, 1969, 1976).

The Social Diversity course presents frequent situations in which students discuss and argue from different life experiences and perspectives about situations that are similar in form, but not subject, to the dilemmas initially posed by Kohlberg. For our initial baseline data, moral judgment seems to provide a developmental focus for social perspective-taking, role-taking, empathy and interpersonal understanding (Higgins, 1989; Selman, 1980).

Our search for a widely-used, gender inclusive, objectively

scored recognition or preference task moral judgement measure led us to the Defining Issues Test (Rest, 1976, 1979, 1986). As a recognition or preference instrument it produces higher stage levels than an interview or sentence completion format such as the MER (Rest, 1976; Mines, 1982). The DIT consists of a moral dilemmas followed by a number of questions and probes to establish a subject's reasoning structures or justifications for the preferred response to the dilemma. The scoring system provides a profile for each the subject's responses at each stage level, the P score (percentage of Principled or stage 5 and 6 responses), reliability and consistency checks and several other features (Rest, 1979; Mines, 1982).

The DIT over the years has been used in numerous studies to measure increases in moral judgment attributed to educational programs and other interventions across age groups and educational levels (Rest, 1986). Rest provides detailed analyses of these, from a cross-sectional and longitudinal perspective (Rest, 1979) and across culture, gender and religion (Rest, 1986). According to analyses and meta-analysis of a representative sample of 56 DIT studies and over 6000 subjects, the gender effect on the DIT is thought to be insignificant, as is the interaction between gender and age or education (Rest, 1986).

Experiential Learning Theory and Learning Style Inventory

The active, experiential dimensions of the Social Diversity course derive in part from the emphasis in Piaget, Perry and Kohlberg upon action, experimentation and direct, concrete experience as the basis for intellectual development. It also has roots in Kurt Lewin's (1951) application of action-research to planned-change interventions in small groups, large organizations and community systems. The Lewin-tradition can be traced in the T-groups and sensitivity training of the fifties and sixties, applied to human relations and the dynamics of group- and inter-group interventions and social change. The Social Diversity course owes its simulations, small group discussions, personal inventories, structured exercises, observation tools and skill-building activities to these two traditions of social learning -- Piaget and Lewin -- that also converge in the experiential learning model of David Kolb (1981, 1984).

The core of Kolb's experiential learning model is a four stage cycle -- from Concrete Experience (CE) through Reflective Observation (RO) and Abstract Conceptualization (AC) to Active Experimentation (AE) -- which represents the transformation of experience into concepts and behavior, provides a basis for identifying different orientations to learning or learning types, and demystifies theory by rooting it firmly in the concrete and reflective components of learning (Kolb, 1981). This experiential learning model informs the Social Diversity course as (1) a description of the four major components or stages of social learning, (2) a typology for individual orientations or preferences toward one stylistic dimension over the others and (3)

The 1985 revised Learning-Style Inventory (LSI 1985) is a twelve-item rank-order forced choice questionnaire designed to provide information on a subject's learning style preference. Subjects rank-order their preferences among the four possible responses to each question, the four responses reflecting the four learning modes -- Concrete Experience (characterized by feeling), Reflective Observation (watching), Abstract Conceptualization (thinking), and Active Experimentation (doing). The LSI measures the respondent's relative orientation toward each of the four learning orientations -- CE, RO, AC, and AE -- as well as the two combination scores indicating preference of abstractness over concreteness (AC-CE) and action over reflection (AE-RO) (Smith & Kolb, 1985).

The LSI (1985) had value for this initial stage of exploratory research for at least two reasons. First, we draw directly on the Experiential Learning model to substantiate our application of all four learning modes in instructional design and use the four components of the model to explain to students our rationale for various instructional activities. This is important in an experientially taught course which otherwise seems to some students to contradict the norms they have experienced of large lectures emphasizing passive learning. Second, this aspect of our intial research provides student profiles to inform curricular design and teaching strategies.

Index of Homophobia

In the absence of reliable developmental assessment instruments directly linked to the specific issues addressed by the course, we utilize an attitudinal measure to complement the structural developmental features of the MER and DIT. We chose the Index of Homophobia (Hudson & Ricketts, 1980) because course evaluations and classroom observation had suggested that our students have the least prior exposure to education about sexual orientation. Further, the classroom resistance we had experienced in dealing with sexual orientation suggested that the pre- and post-test results on a reliable instrument would give us another perspective. We also wished to consider the continued usefulness of attititudinal measures compared with developmental instruments. We selected an instrument which focuses upon affect and feeling toward sexual orientations rather than judgments about the morality or beliefs, in order to assess the depth and range of attitudinal change.

The Index of Homophobia or IHP (Hudson & Ricketts, 1980) is a 25-item summated category partition scale with a score ranging from 0 to 100. Subjects rank their answers from 1 (= Strongly agree) to 5 (= Strongly disagree) in response to twenty-five statements which probe feelings of fear, disgust, anger, discomfort and aversion which the authors characterize as indicating homophobia. 12 of the 25 statements are positively

the 25 statements are negatively stated ("I would feel uncomfortable . .) and must be reverse scored before the final score is tallied (e.g., 1=5, 2=4, 4=2, 5=1). Respondents expressing low discomfort or aversion gain low scores and conversely, respondents expressing considerable dread, disgust or fear show high scores.

FINDINGS AND ANALYSIS

The specific questions addressed in this study are:

(1) Descriptive Statistics. What are the demographic, developmental and attitudinal characteristics of students who enroll in this Social Diversity course?

(2) Similarities between our student samples. On the basis of the descriptive statistics, do our two major sources of undergraduates -- the one (Cohort 7) including students who enroll in open sections of the "Social Diversity" course and the second (Cohort 8) including Resident Assistants who enroll in designated sections of the same course --constitute the same undergraduate population or do they constitute different student populations?

(3) Effect of the Course. Does the credited semester-long course on Social Diversity have a statistically significant effect on the epistemological and moral development of students who enroll and/or on changes in their social attitudes and learning style orientations?

(4) Effects of Age, College Class and Gender. Do the demographic background factors of age, college class and gender contribute significantly to cognitive development, attitude measures or learning style orientations?

Analysis of these questions was conducted by repeated measure design.

Discussion of Findings

QUESTION 1: Descriptive Statistics. What are the demographic, developmental and attitudinal characteristics of students who enroll in this Social Diversity course?

This first question is addressed by the demographic profiles and base-line developmental, attitudinal and learning style test results presented below in Figures 1 through 11. These results include demographic profiles together with descriptive statistics for epistemological development (MER), moral judgment (DIT), learning style preferences (LSI) and degree of homophobia (IHP). (MER findings include overall scores and two component domains, Domain 4 "Role of Peers" and Domain 6 "Nature of Knowledge.")

Demographic information for age and class appears below in

Figures 1-4. The age range is 18 through 24, with the cohort of Resident Assistants slightly older and a college class ahead. 16 % of the students in the open sections are 18, 34% 19; 18% entering students and 42% sophomores. Among the Resident Assistants, there are no 18 year olds and 52% are age 20; none are entering students and 49% juniors. 70% of the respondents from the open sections are female; of the Resident Assistants, 55%.

Figures 1 - 2
Figures 3 - 4

Descriptive statistics for all assessment variables -- the Measure of Epistemological Reflection (MER), Defining Issues Test (DIT), Learning Style Inventory (LSI), and Index of Homophobia (IHP) -- appear below in Figures 5-11. Mean scores appear in tabular form immediately below.

	Open Sections (Cohort 7)		Resident Assistants (Cohort 8)	
	mean	s.d.	mean	s.d.
MER pre	2.8	.32	2.9	.33
post	3.1	.34	3.2	.36
IMP pre	46.1	18.17	35.3	16.87
post	39.9	18.04	30.6	15.66
DIT (P) pre	40.3	16.77	40.7	13.86
(P) post	42.65	14.43	44.95	14.43

The pre-scores and post-scores for the MER for both cohorts (Figure 5) are close within decimal points. The Resident Assistants show slightly larger gain scores.

Figure 5 here

The two component domains of MER, MER 4 "Role of Peers" and MER 6 "Nature of Knowledge," showed greater movement in the positive direction than the overall MER score. For "Role of Peers" (Figure 6) we find increases in Stage 3 and Stage 4 thinking (8%, 8%), with a 16% reduction in Stage 2 thinking for students in open sections. Among Resident Assistants, we find the disappearance of Stage 2 thinking coupled with an 8% decrease in Stage 3 thinking and a 20% increase in Stage 4 thinking.

Figure 6 here

Similarly, for "Nature of Knowledge" (Figure 7) we find reductions in Stage 2 and 3 thinking (13%, 10%) coupled with a 22% increase in Stage 4 thinking and the emergence of Stage 5 thinking for the open sections. For the Resident Assistants, we similarly find the disappearance of Stage 2, a 4% decrease in Stage 3, a 19% increase in Stage 4 and the emergence of Stage 5.

Figure 7 here

For DIT "P" ("principled reasoning") scores the trend is also

positive (Figure 8). Both groups have pre-scores within decimal points of each other, but larger gain scores for the Resident Assistants (4 points) than in the open sections (2 points).

Figure 8 here

For the Index of Homophobia (Figure 9), a downward trend constitutes a positive finding (lower scores express lower homophobia) and both groups show this positive downward trend. It is striking, however, that the Resident Assistant group's pre-score is lower (more positive) than the post-score for the open sections. Starting higher (less positive) the open sections show a larger gain score, although without matching the Resident Assistant starting-point.

Figure 9 here

For the Learning Style Inventory (Figures 10 and 11), we find that both student groups have nearly balanced learning style orientations and students in both groups show change.

Figures 10 and 11 here

QUESTION 2: Similarities between our student samples. On the basis of descriptive statistics, do our two major sources of undergraduates-- those (Cohort 7) who enroll in open sections of the "Social Diversity" course and the Resident Assistants (Cohort 8) who are required to take the course -- constitute the same undergraduate population?

The findings for Question 2, which are mixed, appear on the next page. Based on our observation of the selection criteria for Resident Assistants, their prior training and practical residence hall experiences, we had expected Resident Assistants to differ from students in open sections on the developmental, attitudinal and learning style measures. We note the mixture of findings: no significant difference in the MER overall scores or in the DIT, IHP or LSI, yet significant difference in the two sub-component MER scores, MER 4 "Role of Peers" and MER 6 "Nature of Knowledge." We believe that MER 4 "Role of Peers" does reflect influences other than our course, such as the RA selection process, training and role. These mixed findings confirm some but not all of our expectations.

QUESTION 3: Effect of the Course. Does the credited semester-long course on Social Diversity have a statistically significant effect on the epistemological and moral development of students who enroll and/or on changes in some social attitudes and learning style orientations?

(1) For the overall mean MER Scores:

-- no significant group difference (F=6.15, p>.01)
-- significant course effect (F=34.36, p<.01)

(2) For MER Domain 4: Role of Peers:

-- significant group difference (F=15.89, p<.01)
-- significant course effect (F=33.12, p<.01)

(3) For MER Domain 6: Nature of Knowledge:

-- significant group difference (F=8.02, p<.01)
-- significant course effect (F=48.46, p<.01)

(4) For Defining Issues Test P-Scores (DIT):

-- no significant group difference (F=1.0, p>.01)
-- no significant course effect (F=.26, p>.01)

(5) For Index of Homophobia (IHP):

-- no significant group difference (F=2.37, p>.01)
-- no significant course effect (F=4.04, p>.01)

(6) For the Learning Style Inventory:

-- no significant group difference (F=5.31, p>.01)
-- significant course effect (F=10.53, p<.01)

-- For the overall MER scores, we find a significant course effect without significant group differences. We consider it an important finding that both Resident Assistants and members of the general student population show the same epistemological gain scores due to the course effects.

-- For both sets of sub-domain scores in the MER -- Role of Peers (Domain 4) and Nature of Knowledge (Domain 6) -- we find significant course effects and significant group differences. We had expected that Resident Assistants would have higher "Role of Peers" scores (by inclination for a peer-sensitive role and/ or by training as peer helpers) as well as greater relativism ("Nature of Knowledge") ratings when assessment instruments explicitly probed concerning conflicts between truths or opinions.

-- For the Defining Issues Test P-Scores, we note that the differences in the mean scores (the RAs showed twice the gain) do not achieve statistical significance.

-- For the Index of Homophobia (IHP), notable group differences in the mean scores do not achieve statistical significance. We are still interested that the pre-test scores for the Resident Assistants shown in the descriptive statistics are lower (e.g., better) than the post-test scores for students in open sections. This difference in mean scores, although not statistically significant, possibly suggests that students who

serve as Resident Assistants and pass the selection threshold may be influenced on an attitude measure by job-role expectations, by prior role-related training or by social desireability concerns. The overall gain scores for Resident Assistants are also greater.

-- For the Learning Style Inventory, we find a significant course effect with no significant group differences. We conclude from the descriptive statistics that both student groups remain relatively stable in their proportions for each of the four learning style types, although individual students appear to change in their specific learning orientations. These findings confirm our expectation that a course designed with all four learning style orientations in mind will enable individual students to explore new orientations.

QUESTION 4. Effects of Age, College Class and Gender.
Do the demographic background factors of age, college class and gender contribute significantly to cognitive development, attitude measures or learning style orientations?

We use gain scores rather than post-tests to elicit age, gender and college class effects. The findings of significance for gender and college class are reported below. Age was not found to be significant.

For the overall mean MER Scores:

-- significant gender effect ($F=5.88$, $p<.05$)

For MER Domain 4: Role of Peers:

-- significant gender effect ($F=4.84$, $p<.05$)

For MER Domain 6: Nature of Knowledge:

-- significant gender effect ($F=4.48$, $p<.05$)
-- significant class effect ($F=3.21$, $p<.05$)

For Defining Issues Test P-Scores (DIT):

-- significant course effect ($F=26.55$, $p<.01$)

For Index of Homophobia (IHP):

-- significant course effect ($F=16.74$, $p<.01$)

For the Learning Style Inventory:

-- no significant gender or class effects

ADDITIONAL QUESTION:

In addition to our analysis of the demographic factors of age, college class and gender, we also conducted a small sub-study for the effects of racial/ethnic heritage. To do this, we used a single sub-set of Cohort 7 consisting of a single section of students recruited by the CCEBMS program (Committee for the Collegiate Education of Black and Minority Students). We compared this CCEBMS section with students in other sections of Cohort 7. The CCEBMS section is known to include only students of color. All students in the CCEBMS section participated in this study: 54 students overall, 16 men and 34 women. We use gain scores rather than post scores to analyze change. The findings are presented below:

Demographics

	CCEBMS Section	Other Open Sections
number	54	43
men	16	13
women	38	30
first year	15	2
sophomore	23	18
junior	9	13
senior	7	10

Mean (Post) Scores by Gender

	CCEBMS Section		Other Open Sections	
	men	women	men	women
MER TPR	3.13	3.10	2.94	3.11
MER 4	3.19	3.11	3.08	3.03
MER 6	3.63	3.47	3.15	3.63
DIT P	41.47	42.37	37.12	46.38
IHP	40.21	41.92	48.08	33.69

Differences between two groups (e.g., CCEBMS section and other sections in Cohort 7):

-- no significant group difference ($F=6.00$, $p>.05$)
-- significant course effect ($F=6.00$, $p<.01$)

We also looked at course effects and other demographic factors (age and college class) for the CCEBMS section with the following results:

Gender, class and course effects for the CCEBMS section. (There are no age effects.)

For the overall mean MER Scores:

-- no significant gender, class or course effects

For MER Domain 4: Role of Peers:

-- significant course effect (F=49.02, p<.01)

For MER Domain 6: Nature of Knowledge:

-- significant class effect (F=3.6, p<.05)
-- significant course effect (F=36.03, p<.01)

For Defining Issues Test P-Scores (DIT):

-- significant course effect (F=19.37, p<.01)

For Index of Homophobia (IHP):

-- significant course effect (F=7.12, p<.01)

For the Learning Style Inventory:

-- significant course effect (F=49.24, p<.01)

APPLICATION OF FINDINGS TO COURSE DESIGN: THEORY TO PRACTICE

Epistemology:

When we first designed the Social Diversity course, we hypothesized that dualistic thought in our students would prove a major impediment in their understanding the multiple social diversity and social justice issues and perspectives. Dualistic thinking especially in the "Role of Peers," we suspected, would inhibit the ability of students from diverse backgrounds to help each other understand their divergent experiences and points of view. Thus, the research finding of positive movement shown by the MER from a late dualistic to multiplistic epistemology within the fourteen-week semester (a finding that achieved statistical signifance as a course effect on both the global MER and two course-related component measures) confirmed several of our course

policies and practices: we discourage entering students from taking the course in their first semester; we moderate the sources of multiplicity; we emphasize one issue or perspective at a time, gradually building multiple perspectives as a semester-long enterprise. These research findings substantiate our use of active, concrete, experiential activities drawing on multiple perspectives as well as our use of alternative knowledge sources (books, films, peers, memories and observations) to confirm multiple perspectives. They helped strengthen the experiential over the abstract knowledge course goals, led us to reduce the sources of contradiction and conceptual confusion, allowed us to provide explicit course structure and support for the inevitable student-generated dissonance and contradiction, and led us to emphasize active and concrete rather than abstract teaching strategies.

The existence of dualistic thought among some students (and its virtual disappearance at the post-test) reminds us to make explicit use of our authority as college teachers to endorse new ways of learning. For example, one of our instructors, in order to deflect authority from the teacher to student peers, asked her students in their homework to devise open-ended questions for class discussion for which there were no correct answers. The higher "Role of Peers" pre-test and gain scores also affirmed our use of the interactive social environment of the class through in-class dialogue, focus groups and student interaction as well as the out-of class social environment through peer interviews, group assignments and campus observations.

We are struck by the close Cohort 7-Cohort 8 overall MER scores as well as the significantly higher Cohort 8 component scores for "Role of Peers" and "Nature of Knowledge." Our practice in the sections designated for Resident Assistants is to rely on peer-to-peer dialogue and active learning, more spontaneously and with less instructor's mediating authority than we use for the open sections. The Cohort 7 results for "Role of Peers" encourage us to use authority to sanction and practice more peer interaction, especially in areas of complex social problem-solving and dialogue among divergent points of view. Recent writing from a cognitive developmental perpective has emphasized, although primarily with reference to children, the value of peer-learning and the sociocultural approach (Bidell and Fischer, 1992; Wertsch and Kanner, 1992; Damon, 1990).

Moral Judgment:

Among the early influences on our course design was the peer dialogue and debate of the Just Community approach (Kohlberg and Higgins, 1987; Higgins, 1989), in which students struggle to come up with fair and equitable solutions to real world dilemmas in the context of an instructor's modelling a slightly more complex or adequate moral response. Our findings from the Defining Issues Test, especially the gain scores over a 14 week period, encourage us to continue to pose (or invite students to pose) and discuss real-world dilemmas in the domain of social diversity and social justice. We have also developed a social issues inventory that invites students to pose social diversity or social justice dilemmas they have recently experienced, review the perspectives

of all participants (including their own), discuss these perspectives among peers and pose a more desireable outcome. We discuss and role-play various outcomes to interpersonal conflicts having to do with race, gender and other course topics.

We are struck that the Resident Assistants show twice the gain scores of other students and speculate that this difference may be linked to the nature of their role: as peers they must problem-solve a range of ethical dilemmas outside class as well as in class. This encourages us to emphasize similar aspects of peer interaction for the sections open to all students. The larger gain scores for Resident Assistants encourage us to continue drawing our examples from campus and residence hall life for students in both groups.

Attitudes toward Gays, Lesbians and Bisexuals:

The positive research findings in the reduction of homophobia indicate, at the least, that teaching to an issue can lead to positive attitude change. An attitude measure is, however, open to the question of socially desireable responses and less valuable for our purposes than a developmental instrument in this area. Nonetheless, it seems important that students on a multicultural campus indicate that they know what the socially desireable responses are, whether or not they act in accordance with those responses. The anonymous course evaluations, not quoted in this paper, indicate that for many students changes with regard to their attitudes towards gays, lesbians and bisexuals, proved the most difficult part of the course, the most personally disturbing, and the part of their learning they were most aware of. This

and the part of their learning they were most aware of. This evidence from the evaluations confirms the direction and magnitude of change reflected in the attitude assessment.

Learning Style Differences:

We had hypothesized that all four learning orientations would be represented in our classes and shared the view that all four learning modes should be developed by each student. The distribution demonstrated by both pre- and post-tests endorses our view and assists individual instructors in designing sequences of learning activities. We also explain the theory behind the model to our students, in support of our unconventional (in their higher education experience) teaching approach. They use their individual profiles to reflect on their preferred and their short-changed learning modes, to build on the one and strengthen the other. The change in proportion of students preferring each orientation is an unexpected outcome and has not to our knowledge been noted elsewhere.

Our belief that the Resident Assistants would be more active and more concrete, less reflective and less abstract, was not confirmed by our findings.

Next Steps:

We have noted that these findings constitute the initial stage of a continuing study of cognitive development, learning style differences and attitudinal changes among college undergraduates who enroll in a General Education "Social Diversity in Education" fourteen-week credited course. It corrects methodological problems but confirms all essential findings from

general student population in the Social Diversity course (Adams and Zhou, 1990).

Our goal in this study has not been to demonstrate developmental or attitudinal change for its own sake, but to understand the developmental characteristics, skills and change processes for students engaged with challenging and relatively new subject areas of social diversity and social justice. Our data suggest some of the baseline cognitive developmental thresholds for our students as well as the direction and magnitude of change over the semester. We acknowledge that the measures used in this initial phase are derived from global cognitive developmental theories. The recent cognitive developmental literature emphasizes variability across developmental domain (Bidell and Fischer, 1992) and the designation of specific developmental skills evoked by specific learning contexts (Kitchener and Fischer, 1990; Okagaki and Sternberg, 1990). We are convinced by our experience of student uncertainty and struggle upon entering the course and student reports of growth, empathy and transformed perspectives upon leaving it, that our understanding of specific kinds of developmental change that take place must be more closely tied to the course context, to better support the design of course curriculum and process. We believe the challenges experienced by the students are intrinsically tied to the social diversity and social justice subject matter and that developmental change should be assessed within specific course interactions. At the same time, the more global course threshold and effects indicated by our data continue to help us revise our curriculum, refine our

teaching approaches, and prepare our graduate teaching assistants, many of whom are familiar with cognitive development concepts.

Our next step, therefore, will be to draw on the developmental skills literature (Bidell and Fischer, 1992; Rose and Fischer, 1989; Fischer, 1980) coupled with the sociocultural literature (Vygotsky, 1978; Wertsch, 1985; Wertsch and Kanner, 1992). We hope to find ways to identify the functional skill levels our students may exhibit inside the classroom (or outside, in the residence halls), as distinct from the optimal skill levels implied by our worthy statements of course goals. This first "next step" would help us understand how instructors' and peers' might provide necessary "scaffolding" for new levels of cognitive, affective and behavioral growth. Such an approach would make better use of the sociocultural environment of the college classroom, within which we believe concepts, attitudes and behaviors are tried out first by our students in a range of interpersonal interactions. It also affirms the importance of social discourse in the evolution of new procedures of thinking (Damon, 1990).

Second, we need to tie models of racial identity development or developmental models of thinking about race, directly to course content and course goals (Bidell et al, 1993; Tatum, 1992; Taylor, 1990). Racial identity development as we understand it (Hardiman and Jackson, 1992) has already enabled us to anticipate and deal effectively with conflicting or misunderstood perspectives on racial issues, but we lack a version of the model that speaks to development within the course. Farther down the line would be the

use of racial identity models as paradigms for social identity development in other spheres (Jackson and Hardiman, 1988).

Third, we will adapt a model of interpersonal perspective-taking from young children (Selman, 1980) to college students (Alpert, 1992) in the specific context of the social diversity course. Colleagues are also adapting a general model of the self-knowledge development (Weinstein and Alschuler, 1985) to self-knowledge about social identity within the context of social justice education. If we can generate theories of cognitive development that speak clearly and explicitly to social diversity and social justice educational processes, we will be better prepared to answer the call in the 1988 ACE report for colleges and universities to provide social laboratories in which educational approaches to social diversity and social justice may be tested and perfected.

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Age Across Cohort 7

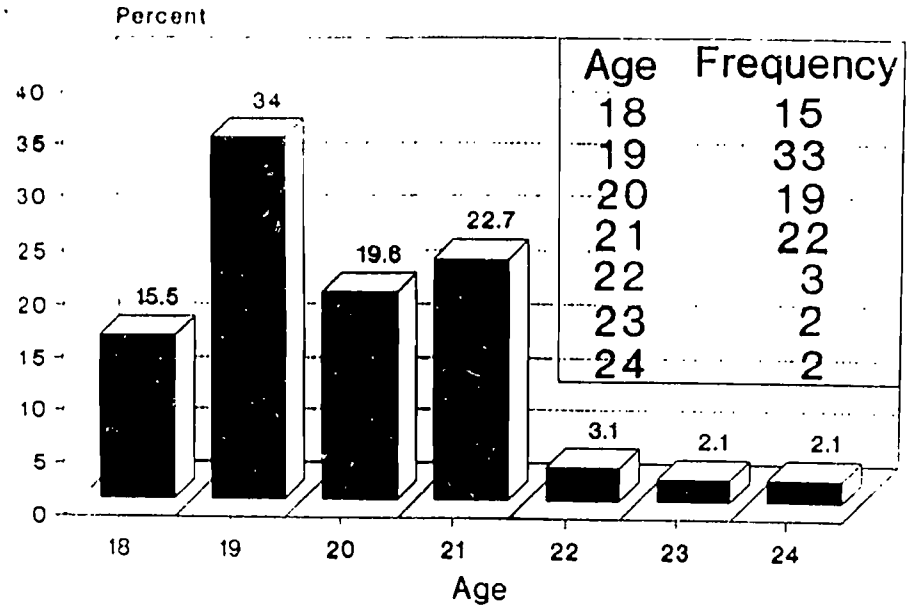


Figure 1

Age Across Cohort 8

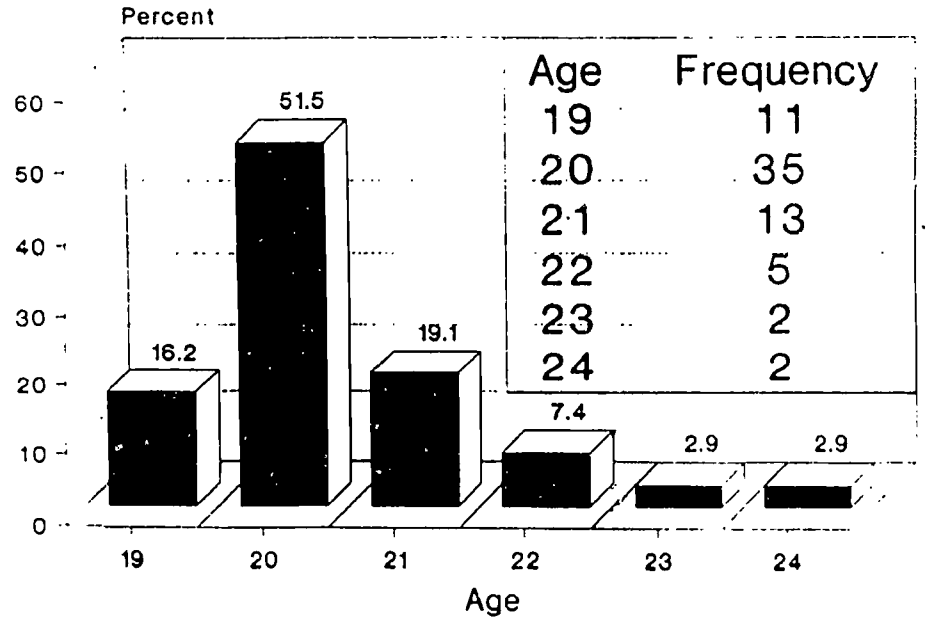


Figure 2

College Class Across Cohort 7

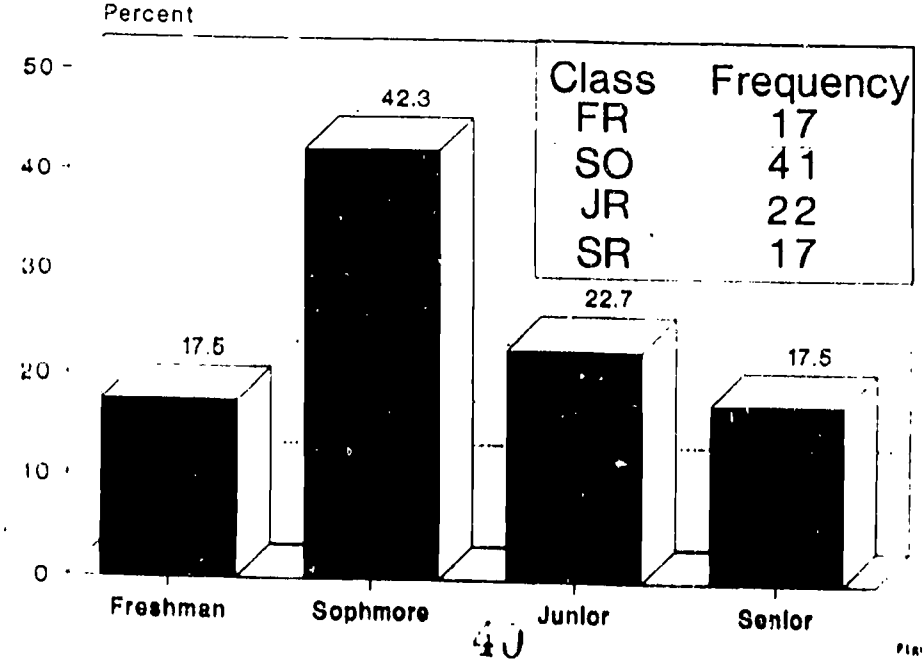
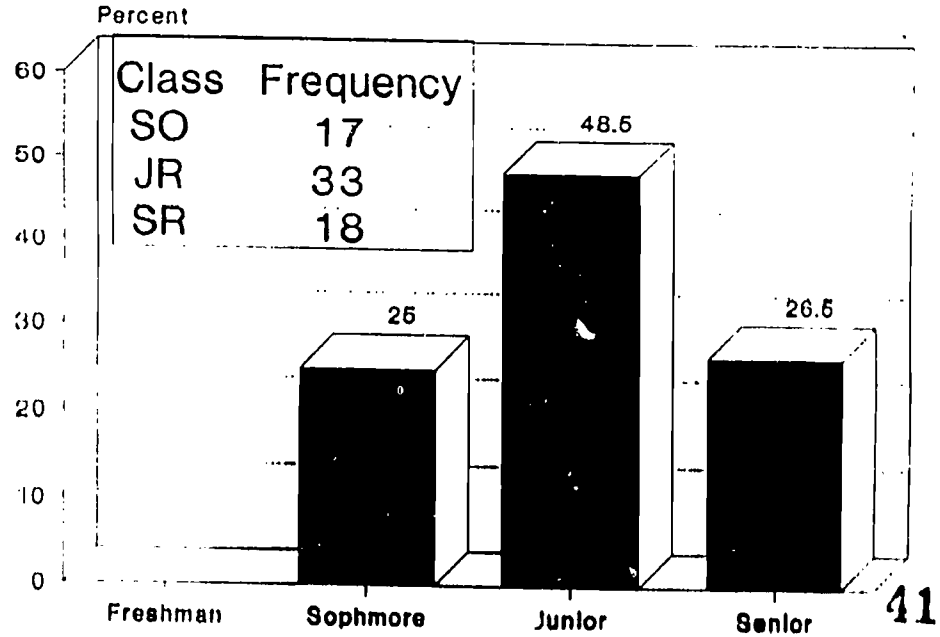
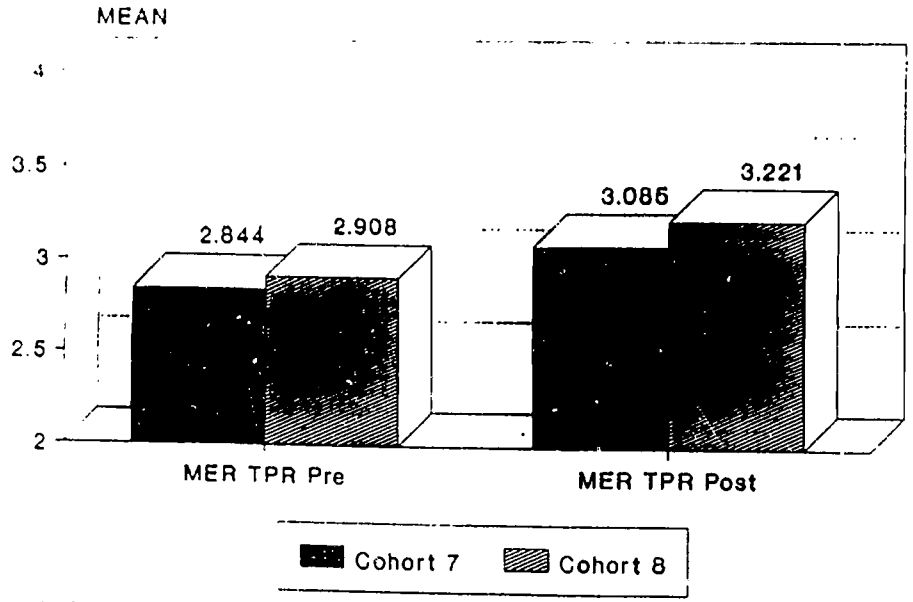


Figure 3

College Class Across Cohort 8



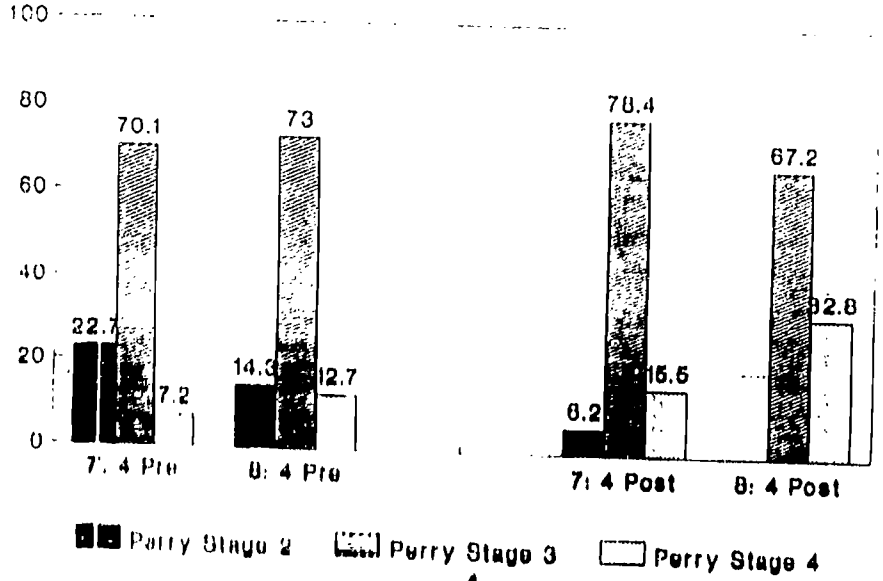
Comparison of MER Mean Scores
Cohort 7 and Cohort 8



Sample Size. Coh 7 n=92. Coh 8 n=52

Figure 5

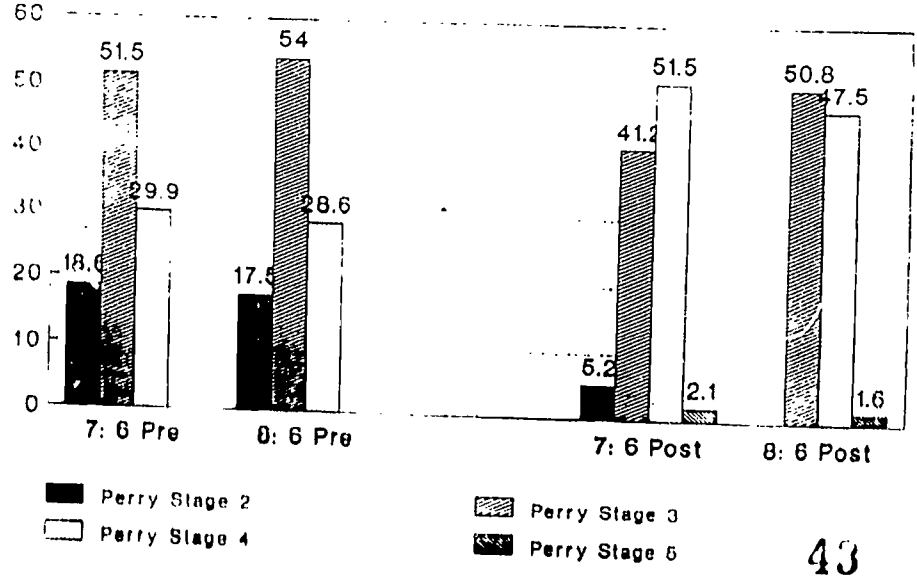
Cohorts 7 and 8 Compared: MER 4
Pre and Post Tests



Note tendency toward higher COH 8 scores

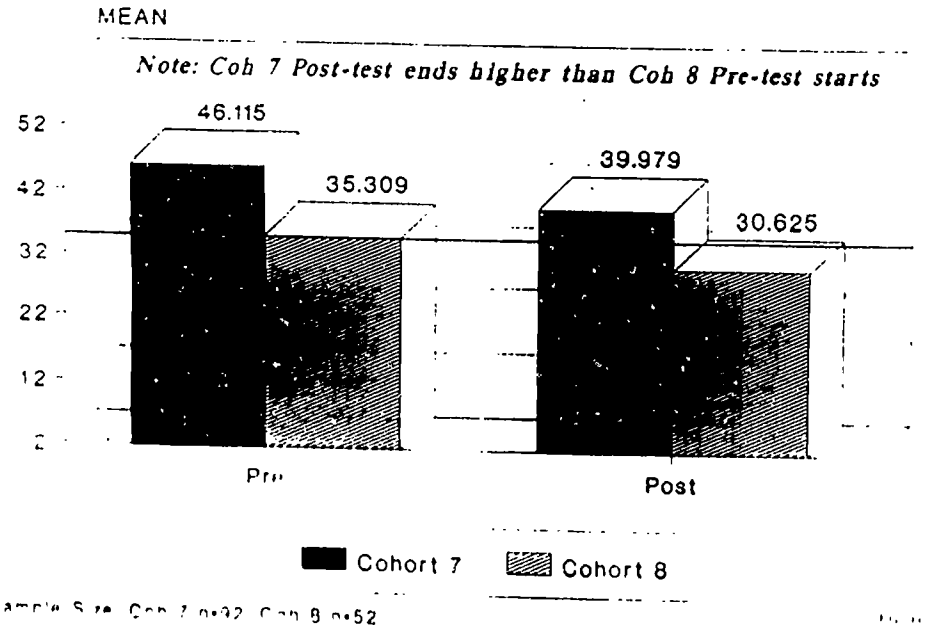
Figure 6

Cohorts 7 and 8 Compared: MER 6
Pre and Post Tests



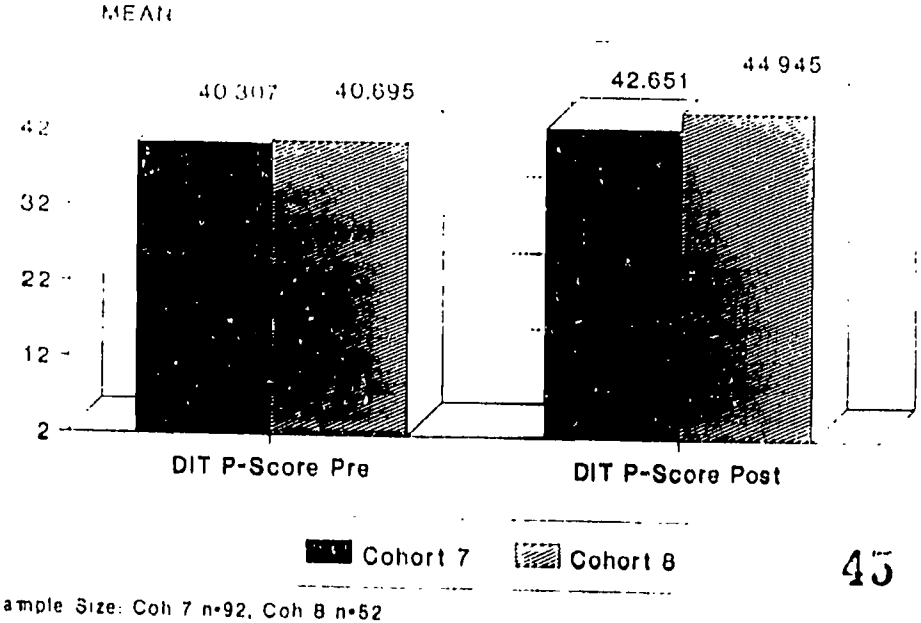
Note tendency toward higher COH 7 scores

Comparison of Homophobia
Cohort 7 and Cohort 8



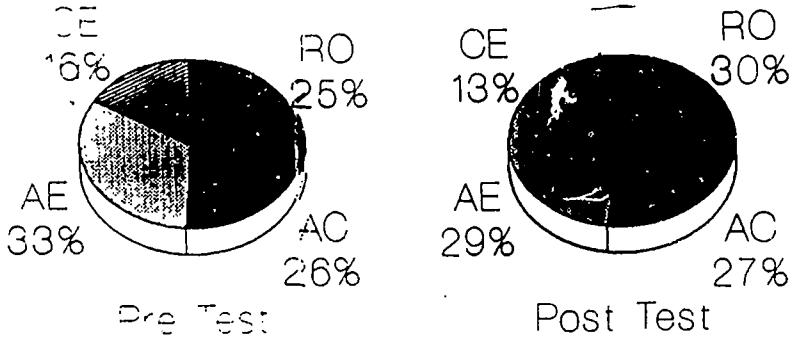
Sample Size: Coh 7 n=92, Coh 8 n=52

Comparison of DIT P-Scores
Cohort 7 and Cohort 8



Sample Size: Coh 7 n=92, Coh 8 n=52

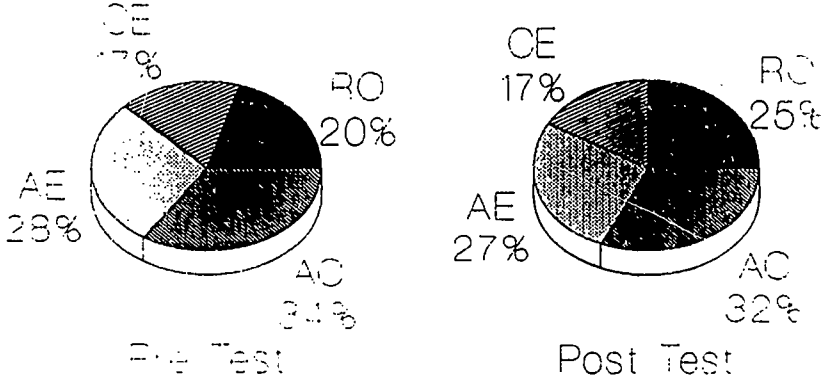
Cohort 7
Learning Style Inventory



CE-Concrete Experience, RO-Reflective Observation, AC-Abstract Concepts, AE-Active Experimentation

Figure 10

Cohort 8
Learning Style Inventory



CE-Concrete Experience, RO-Reflective Observation, AC-Abstract Concepts, AE-Active Experimentation

Figure 11