

***HOW DOES COLLEGE
INFLUENCE
LEARNING
AND
COGNITIVE DEVELOPMENT?***

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NATIONAL STUDY OF STUDENT LEARNING (NSSL)

SAMPLE

2680 STUDENTS IN 23 TWO- AND FOUR-YEAR COLLEGES LOCATED IN 16 DIFFERENT STATES.

5 COMMUNITY COLLEGES

3 PUBLIC RESEARCH UNIVERSITIES

1 PRIVATE RESEARCH UNIVERSITY

4 LIBERAL ARTS COLLEGES

2 HISTORICALLY BLACK COLLEGES

8 REGIONAL COLLEGES AND UNIVERSITIES

DATA COLLECTED

- Fall 1992 CAAP reading, math, critical thinking
NSSL precollege questionnaire
- Spring 1993 CAAP reading, math, critical thinking
NSSL follow-up questionnaire
College Student Experiences Questionnaire
(CSEQ)
- Spring 1994 CAAP science reasoning, writing skills
NSSL follow-up questionnaire
CSEQ
- Spring 1995 CAAP reading, critical thinking
NSSL follow-up questionnaire
CSEQ

PRECOLLEGE

1. LEARNING
2. COGNITIVE SKILLS
3. VALUES/ATTITUDES TOWARD LEARNING
4. ASPIRATIONS AND COMMITMENT

ANALYTIC MODEL

PRECOLLEGE

1. LEARNING
2. COGNITIVE DEVELOPMENT
3. VALUES/ATTITUDES TOWARD LEARNING
4. PERSISTENCE/ PROGRESS TOWARD DEGREE COMPLETION

COLLEGE EXPERIENCES

1. TYPE OF COLLEGE ATTENDED
2. COURSE WORK
3. QUALITY OF INSTRUCTION
4. WORK AND FAMILY COMMITMENTS

TYPICAL CONTROLS IN ANALYSIS

- * INDIVIDUAL PRECOLLEGE SCORE
- * AVERAGE INSTITUTIONAL PRECOLLEGE SCORE
- * PRECOLLEGE ACADEMIC MOTIVATION
- * SEX
- * ETHNICITY/RACE
- * AGE
- * FAMILY SOCIAL ORIGINS (EDUCATION AND INCOME)
- * PART OR FULL TIME ENROLLMENT
- * WORK RESPONSIBILITIES
- * PLACE OF RESIDENCE DURING COLLEGE
- * COURSEWORK TAKEN IN FIVE DIFFERENT CLUSTERS

TWO-YEAR vs. FOUR-YEAR COLLEGES

FIRST YEAR:

NO DIFFERENCES BETWEEN 2- AND 4-YEAR SCHOOLS IN READING, MATH, OR CRITICAL THINKING

SECOND YEAR:

NO DIFFERENCE BETWEEN 2- AND 4-YEAR SCHOOLS IN WRITING SKILLS OR SCIENCE REASONING

HISTORICALLY BLACK (HB) vs. PREDOMINANTLY WHITE (PW) COLLEGES

FIRST YEAR:

NO DIFFERENCES BETWEEN AFRICAN-AMERICAN (AA) STUDENTS AT HB OR PW COLLEGES IN READING, MATH, OR CRITICAL THINKING

SECOND YEAR:

1. NO DIFFERENCES BETWEEN AA STUDENTS AT HB OR PW COLLEGES IN SCIENCE REASONING

2. AA STUDENTS AT HB COLLEGES SIGNIFICANTLY HIGHER IN WRITING SKILLS

THIRD YEAR:

1. AA STUDENTS AT HB COLLEGES SIGNIFICANTLY HIGHER IN READING COMPREHENSION

2. AA STUDENTS AT HB COLLEGES REPORT SIGNIFICANTLY GREATER GAINS IN UNDERSTANDING THE ARTS AND HUMANITIES AND UNDERSTANDING SCIENCE

COGNITIVE EFFECTS OF ATHLETIC PARTICIPATION FOR MEN

FIRST YEAR:

1. FOOTBALL AND BASKETBALL PLAYERS SIGNIFICANTLY LOWER THAN NONATHLETES OR ATHLETES IN OTHER SPORTS IN READING COMPREHENSION AND MATHEMATICS
2. DEFICIT OF ABOUT 8 PERCENTILE POINTS
3. NO DIFFERENCE BETWEEN ATHLETES IN OTHER SPORTS AND NONATHLETES

SECOND YEAR (MEN):

1. FOOTBALL AND BASKETBALL PLAYERS SIGNIFICANTLY LOWER THAN NONATHLETES OR ATHLETES IN OTHER SPORTS IN WRITING SKILLS
2. DEFICIT OF ABOUT 13 PERCENTILE POINTS
3. NO DIFFERENCE BETWEEN ATHLETES IN OTHER SPORTS AND NONATHLETES

THIRD YEAR (MEN):

1. FOOTBALL AND BASKETBALL PLAYERS SIGNIFICANTLY LOWER THAN NONATHLETES OR ATHLETES IN OTHER SPORTS IN READING AND CRITICAL THINKING
2. DEFICIT OF ABOUT 13 PERCENTILE POINTS
3. NO DIFFERENCE BETWEEN ATHLETES IN OTHER SPORTS AND NONATHLETES

COGNITIVE EFFECTS OF ATHLETIC PARTICIPATION FOR WOMEN

1. WOMEN ATHLETES SIGNIFICANTLY LOWER THAN WOMEN NONATHLETES IN:
 - a) FIRST YEAR READING COMPREHENSION
 - b) THIRD YEAR READING COMPREHENSION
2. DEFICIT ABOUT 7-8 PERCENTILE POINTS
3. NO DIFFERENCE BETWEEN WOMEN ATHLETES AND NONATHLETES IN:
 - * MATHEMATICS
 - * CRITICAL THINKING
 - * WRITING SKILLS
 - * SCIENCE REASONING

SOME ELEMENTS OF OPENNESS TO DIVERSITY AND CHALLENGE

ENJOY COURSES THAT CHALLENGE
BELIEFS/VALUES

ENJOY LEARNING ABOUT DIFFERENT CULTURES

ENJOY INTERACTING WITH RACIALLY AND
CULTURALLY DIVERSE INDIVIDUALS

ENJOY DISCUSSIONS WITH PEOPLE WHOSE IDEAS
AND VALUES ARE DIFFERENT THAN MINE

BELIEVE LEARNING ABOUT DIFFERENT
CULTURES IS AN IMPORTANT PART OF COLLEGE

SIGNIFICANT POSITIVE INFLUENCES ON
OPENNESS TO DIVERSITY AND
CHALLENGE ACROSS ALL 3 YEARS

NON-DISCRIMINATORY RACIAL ENVIRONMENT

PARTICIPATION IN A RACIAL/CULTURAL
AWARENESS WORKSHOP

INVOLVEMENT WITH DIVERSE STUDENT PEERS

SEX

AGE

OTHER SIGNIFICANT INFLUENCES ON OPENNESS TO DIVERSITY AND CHALLENGE

FIRST YEAR:

GREEK AFFILIATION (-)

PARTICIPATED IN INTERCOLLEGIATE ATHLETICS (-)

THIRD YEAR:

ARTS AND HUMANITIES COURSES (+)

PARTICIPATED IN INTERCOLLEGIATE ATHLETICS (+)

CREDIT HOURS ACCUMULATED (+)

COGNITIVE EFFECTS OF FRATERNITY **MEMBERSHIP IN THE FIRST YEAR OF** **COLLEGE**

MEN WHO JOIN FRATERNITIES DURING THE FIRST YEAR OF COLLEGE ARE SIGNIFICANTLY LOWER THAN MEN WHO REMAIN INDEPENDENT IN:

1. READING COMPREHENSION

DEFICIT = 6.75 PERCENTILE POINTS

2. MATHEMATICS

DEFICIT = 5.57 PERCENTILE POINTS

3. CRITICAL THINKING

DEFICIT = 10.64 PERCENTILE POINTS

4. COMPOSITE GROWTH

DEFICIT = 7.72 PERCENTILE POINTS

COGNITIVE EFFECTS OF SORORITY MEMBERSHIP IN THE FIRST YEAR OF COLLEGE

WOMEN WHO JOIN SORORITIES DURING THE FIRST YEAR OF COLLEGE ARE SIGNIFICANTLY LOWER THAN WOMEN WHO REMAIN INDEPENDENT IN:

1. READING COMPREHENSION

DEFICIT = 7.93 PERCENTILE POINTS

2. COMPOSITE GROWTH

DEFICIT = 5.17 PERCENTILE POINTS

SIGNIFICANT EFFECTS ON CRITICAL THINKING

- (+) 1. # COURSES IN FINE ARTS AND HUMANITIES
- (+) 2. # COURSES IN NATURAL SCIENCES AND ENGINEERING
- (+) 3. # CREDIT HOURS COMPLETED
- (+) 4. INVOLVEMENT IN CLUBS AND ORGANIZATIONS
- (+) 5. RACIAL/CULTURAL AWARENESS WORKSHOP
- (+) 6. FACULTY CONCERN FOR STUDENT DEVELOPMENT

TEACHER ORGANIZATION AND PREPARATION

- * PRESENTATION OF MATERIAL IS WELL-ORGANIZED
- * INSTRUCTORS ARE WELL PREPARED FOR CLASS
- * CLASS TIME IS USED EFFECTIVELY
- * COURSE GOALS AND REQUIREMENTS ARE CLEARLY EXPLAINED
- * INSTRUCTORS HAVE A GOOD COMMAND OF WHAT THEY ARE TEACHING

POSITIVE COGNITIVE EFFECTS OF TEACHER ORGANIZATION PREPARATION

FIRST YEAR:

READING COMPREHENSION

MATHEMATICS

CRITICAL THINKING

SECOND YEAR:

WRITING SKILLS

THIRD YEAR:

READING COMPREHENSION

CRITICAL THINKING

SOME ELEMENTS OF A “CHILLY CLIMATE” FOR WOMEN

- * SINGLED OUT IN CLASS BECAUSE OF SEX
- * TREATED DIFFERENTLY BY FACULTY
- * OBSERVED DISCRIMINATION DIRECTED AT WOMEN
- * NEGATIVE WORDS ABOUT WOMEN IN CLASS
- * NOT TREATED WITH RESPECT BY FACULTY

NEGATIVE COGNITIVE EFFECTS OF A “CHILLY CLIMATE” FOR 4-YEAR COLLEGE WOMEN

FIRST YEAR:

**GAINS IN ACADEMIC PREPARATION FOR A
CAREER**

SECOND YEAR:

**GAINS IN ACADEMIC PREPARATION FOR A CAREER
GAINS IN WRITING AND THINKING SKILLS
GAINS IN UNDERSTANDING SCIENCE
GAINS IN UNDERSTANDING THE ARTS AND
HUMANITIES**

NEGATIVE COGNITIVE EFFECTS OF A “CHILLY CLIMATE” FOR 4-YEAR COLLEGE WOMEN

THIRD YEAR:

GAINS IN ACADEMIC PREPARATION FOR A CAREER

GAINS IN WRITING AND THINKING SKILLS

GAINS IN UNDERSTANDING SCIENCE

**GAINS IN UNDERSTANDING THE ARTS AND
HUMANITIES**

NEGATIVE COGNITIVE EFFECTS OF A “CHILLY CLIMATE” FOR 2-YEAR COLLEGE WOMEN

FIRST YEAR:

STANDARDIZED COMPOSITE COGNITIVE
DEVELOPMENT

GAINS IN ACADEMIC PREPARATION FOR A CAREER
GAINS IN WRITING AND THINKING SKILLS

SECOND YEAR:

GAINS IN WRITING AND THINKING SKILLS
GAINS IN UNDERSTANDING SCIENCE
GAINS IN UNDERSTANDING THE ARTS AND
HUMANITIES

COGNITIVE EFFECTS OF ON- OR OFF- CAMPUS WORK

FIRST YEAR:

NO EFFECT OF EITHER FORM OR WORK ON
READING, MATHEMATICS, OR CRITICAL
THINKING

SECOND YEAR:

1. SMALL NEGATIVE EFFECTS OF ON-CAMPUS
WORK ON SCIENCE REASONING
2. NO NEGATIVE EFFECTS OF OFF-CAMPUS WORK
ON SCIENCE REASONING OR WRITING

COGNITIVE EFFECTS OF ON- OR OFF- CAMPUS WORK

THIRD YEAR:

CURVILINEAR EFFECT OF BOTH FORMS OF WORK
ON COMPOSITE OF READING COMPREHENSION
AND CRITICAL THINKING

1. UP TO 15-20 HOURS PER WEEK - THE EFFECT OF
WORK IS POSITIVE
2. BEYOND 15-20 HOURS PER WEEK - THE EFFECT
OF WORK IS NEGATIVE

NON-COURSE-RELATED PEER INTERACTION SCALE

TALKED ABOUT: ART, MUSIC, THEATER

TALKED ABOUT DIFFERENT:

PHILOSOPHY/VALUES

RELIGIOUS BELIEFS

POLITICAL OPINIONS

COUNTRIES

HAD LIVELY CONVERSATIONS AT DINNER

PARTICIPATED IN LATE-NIGHT DISCUSSIONS

DISCUSSED WHY SOME GROUPS GOT ALONG

EFFECTS OF NON-COURSE-RELATED PEER INTERACTIONS

FIRST YEAR:

CAAP COMPOSITE SCORE (+)

CAAP READING (+)

CAAP CRITICAL THINKING (+)

UNDERSTANDING SELF & OTHERS (+)

ACADEMIC PREPARATION FOR A CAREER (+)

WRITING AND THINKING SKILLS (+)

UNDERSTANDING ARTS & HUMANITIES (+)

SECOND YEAR:

CAAP SCIENCE REASONING (-)

UNDERSTANDING SELF & OTHERS (+)

ACADEMIC PREPARATION FOR A CAREER (+)

WRITING AND THINKING SKILLS (+)

UNDERSTANDING ARTS & HUMANITIES (+)

EFFECTS OF NON-COURSE-RELATED PEER INTERACTIONS

THIRD YEAR:

UNDERSTANDING SELF & OTHERS (+)

ACADEMIC PREPARATION FOR A CAREER (+)

WRITING AND THINKING SKILLS (+)

UNDERSTANDING ARTS & HUMANITIES (+)

FIRST-YEAR COGNITIVE EFFECTS OF COMPUTER USE AT TWO-YEAR COLLEGES

1. USING COMPUTERS FOR CLASSROOM ASSIGNMENTS HAD A SIGNIFICANT IMPACT ON:

A) FIRST-YEAR COMPOSITE COGNITIVE DEVELOPMENT (I.E., READING & MATH & CRITICAL THINKING

B) FIRST-YEAR READING COMPREHENSION

TWO-YEAR COLLEGES (CONTINUED)

2. COURSES REQUIRED LEARNING TO USE COMPUTERS OR WORD PROCESSORS HAD A SIGNIFICANT POSITIVE EFFECT ON FIRST-YEAR CRITICAL THINKING

3. E-MAIL USE HAD SIGNIFICANT NEGATIVE EFFECTS ON FIRST-YEAR READING, MATH, AND CRITICAL THINKING

FIRST-YEAR COGNITIVE EFFECTS OF COMPUTER USE AT FOUR-YEAR COLLEGES

1. ENGAGED IN COMPUTER WORD-
PROCESSING POSITIVELY INFLUENCED
READING COMPREHENSION

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