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ABSTRACT

This publication contains a status study of psychology in secondary schools in Illinois. One of the major objectives of the study was to examine the status of the psychology course from the perspectives of three major groups of certified teachers--social studies teachers, guidance counselors, and a group of teachers representing all the other miscellaneous areas of certification--to determine if their certification area influences their approach to the course. The study examines teacher characteristics, characteristics of the students enrolled in the courses, as well as course objectives, content, and methods. Where relevant, findings from this study are compared to those from similar surveys conducted in Florida and Mississippi. To gather data questionnaires were sent to teachers and students in the state. Five hundred and fifty four of the 864 schools surveyed (64.1%) returned completed questionnaires. Psychology is taught in 59.7% of the schools in Illinois by 149 social studies teachers, 65 guidance counselors, and 114 teachers in the "Other" category. Social studies teachers received significantly fewer hours of college level psychology course training than their counterparts. None of the three groups of teachers came closer to meeting the expectations or needs of the students than the others. Also, the three groups of teachers emphasized the same content and topics and used identical teaching methods. (Author/RM)

A COMPARISON OF HIGH SCHOOL PSYCHOLOGY COURSES TAUGHT BY SOCIAL STUDIES, GUIDANCE COUNSELORS, AND OTHER AREA-CERTIFIED TEACHERS

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ABSTRACT

Data from 331 psychology teachers in Illinois during 1977-78 were compared according to three broad areas of certification: social studies, guidance counselors, and all other areas of certification. Data as to characteristics of teachers, schools, courses, and students were compared as were course objectives, content, and instructional methods used by these teachers. Where possible, teacher data were contrasted with responses from 1,137 students who were enrolled in these courses. Also where possible, Illinois teacher and student data were compared with information obtained from Florida and Mississippi psychology teachers and students.

(90 words)

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A COMPARISION OF HIGH SCHOOL PSYCHOLOGY COURSES TAUGHT BY SOCIAL STUDIES, GUIDANCE COUNSELORS, AND OTHER AREA-CERTIFIED TEACHERS

When the smoke cleared from the social studies/science "Curriculum Revolution" of the 1960's and early 70's, individuals involved with social studies on the national level at last seemed to take notice of the emergence of a "non-social studies discipline", Psychology, as the fastest growing social studies course in our nation's high schools (Gross, 1977; Jarolimek, 1977; Stahl and Casteel, 1973). Already in 1971-72, over 600,000 students were enrolled in separate courses in psychology in nearly 7,000 schools with most schools offering the course as a social studies elective (Osterndorf, 1975). Yet, with few exceptions (Engle, 1955; Zunino, 1974; Stahl, 1978; Stahl and Casteel, 1974), the rapid growth and development of the high school level psychology course had been virtually ignored by social studies professional organizations, journals, and leaders.[3,4]

This growth has not gone unnoticed by others (Engle, 1967; Noland, 1967; Kasschau and Wertheimer, 1974; Stahl and Casteel, 1973; Stahl, 1974). Data testifying to rapid increases in course enrollments, number of schools offering the course, and number of teachers teaching the course are abundant (Kasschau and Wertheimer, 1974; Engle, 1967; Osterndorf, 1975). These data bases and recent state status surveys reveal that psychology has not only increased in popularity, it has been the fastest growing elective course offering in the high school social studies program over the past two decades.

State and national status surveys conducted in various states since 1932 have consistently revealed that a high percentage of teachers of these psychology courses were/are certified in the broad area of the social studies (Noland, 1966 ; Snellgrove, 1973; Matiya and Gill, 1977; APA, 1976; Fisher, 1974; Stahl, 1974, 1978). After an extensive longitudinal study, Stahl (1976) reported that better than three-fourths of the psychology teachers in Florida from 1970-1971 through 1974-1975 were certified in the social studies.

While data are available about the overall growth of psychology within the social studies curriculum, there has yet to be reported any details on where these social studies certified psychology teachers teach their courses, what their classes are like, what the objectives for their courses are, what content they include in these courses, and what methods they use to teach psychology to their students. Nor do we know whether psychology courses taught by social studies teachers are similar to or different from those taught by teachers certified in other subject matter disciplines. For instance, do social studies-certified psychology teachers teach a different course than those who hold Guidance-Counselor certificates? Even more interesting, do social studies teachers come closer to meeting the needs of high school students who are actually enrolled in these precollege psychology courses?

While much may be speculated about answers to these and similar questions, previous investigations relevant to assumptions about differences between "Humanistic" and "Behavioristic" psychology teachers (Stahl, 1977a, 1978) and between urban-suburban-rural psychology

teachers (Stahl, Matiya, and Hunt, 1980) produced conclusions contrary to conventional wisdom.

After a brief review of the literature, this article will report the findings of a status study of psychology in one Midwestern state. The article represents the first study comparing psychology courses taught by social studies certified teachers and teachers who held certificatation in other subject matter areas. Where relevant, findings from this study will be compared to those from similar surveys conducted in Florida and Mississippi. Finally, the article includes a comparison between responses made by 331 Illinois psychology teachers and 1,137 high school students who were actually enrolled in courses taught by these same teachers.

A SUMMARY LITERATURE REVIEW

Psychology has been included in the secondary school curriculum since the 1830's. By 1900, it was designated as a separate course with 12,368 students enrolled. By 1935, its growth had become so significant that the American Psychological Association (APA) organized a separate committee to study its progress.

The 1948-49 Biennial Survey of Education reported that enrollment had increased to nearly fifty thousand students (46,547 students). In the twenty years between 1932 and 1952, psychology courses in the high schools grew significantly faster than either sociology or economics courses.

The course gained in popularity and enrollment through the fifties and sixties. Records on student enrollment in 1961 indicated that over

two hundred percent more students were taking the course than had taken it twelve years before. A sharp rise in schools offering the course and the increase in the number of states teaching psychology further attest to this growth. By 1972-73, 6,870 U. S. schools offered specific courses in psychology which enrolled 611,468 students. This enrollment figure represented 3.3 percent of all students enrolled in school during the 1972-73 school year and 8.8 percent of the enrollment in schools which offered these courses. Overall, the total student enrollment in psychology courses increased a phenomenal 323% from 1961 to 1973 (Osterndorf, 1975).

Studies of secondary school psychology courses during the past two decades have tended to substantiate each other (Engle, 1967; Noland, 1966; Kasschau and Wertheimer, 1974). The list below briefly summarizes many of the more important characteristics relative to the past and present status of psychology within the secondary school curriculum:

1. Student enrollment and number of schools offering the course are rapidly increasing.
2. Students and teachers see the course as being personally valuable for students.
3. Courses are very popular among students as reported by their teachers.
4. Courses are offered in all fifty states.
5. Courses are most often one semester in length with year long courses a distance second.

6. Courses are offered as an elective more often than as a required subject.
7. Psychology is not required in any state for graduation, but a few isolated schools require it for graduation.
8. Courses are more likely to be offered in schools with over 500 students enrolled.
9. Courses are primarily opened to seniors-juniors combined classes and then to classes open only to seniors.
10. Females are much more likely to enroll in the course than males.
11. Whites are much more likely to enroll in the course than blacks, regardless of the white/black ratio of the school's enrollment.
12. The course is offered in schools across a wide variety of urban-suburban and rural settings.
13. Personal or self adjustment and self understanding are two of the most often stated objectives of the course.
14. Teachers tend to include in these courses the content and topics they believe should be included in psychology courses offered on this level.
15. Courses are usually assigned social studies credit.
16. Teachers are predominantly certified in social studies.
17. Teachers have little difficulty in identifying their approaches to the course with the labels--"behavioristic or humanistic."
18. Teachers develop and use a great deal of materials such as popular magazines to supplement their courses.

19. Until 1973, the T. L. Engle and Louis Snellgrove textbook, Psychology: Its principles and applications (various editions) was by far the most popular text.
20. More schools would offer the course if properly trained teachers and finances were available.

METHOD

In the Spring, 1978, a 4-page questionnaire accompanied by introductory letter and a self-addressed, stamped, return envelope was mailed to public and private secondary school principals in Illinois. The letter requested the principals to forward the questionnaire to the individual in their schools responsible for teaching psychology. A second mailing took place within a month of the first one. Eventually, 554 of the 864 schools surveyed (64.1%) returned completed questionnaires.

In addition to these teacher data, a number of schools were randomly selected for purposes of having the students enrolled in these psychology courses to complete a questionnaire directly related to them. By mid-Spring, 1,137 students in over two dozen schools returned completed forms via their teachers. As appropriate, the results of their responses will be incorporated within this paper as well.

RESULTS

INTRODUCTION TO THE RETURNS

The data analysis revealed that psychology as a separate course of study for credit was taught in 331 of the 554 Illinois secondary schools

responding to the questionnaire (59.7%). The primary focus of this study was to go beyond the mere description of the general status of psychology on the pre-college level. This focus included the comparative investigation of psychology courses taught by teachers with different subject matter backgrounds and college course training. In particular, the possibility that the certification areas of these teachers would translate into different approaches to the course existed. This possibility was especially intriguing since no previous detailed data have been reported on the status of social studies teachers relative to this content area on this level of instruction.

One questionnaire item asked teachers to indicate what certification area they were currently using within the context of their present teaching position. Seven areas were listed with the eighth, or "Other" category left open for certification areas not listed. Of the 331 respondents, 149 (45.0%) indicated their teacher certification area at that time was in the "Social Studies"; 67 (20.2%) indicated "Psychology", 65 (19.6%) indicated "Guidance and Counseling", 8 (2.4%) indicated "Administration", 5 (1.5%) "Science", and 4 (1.2%) "Home Economics". The 29 individuals marking the "Other" certification area reported they held certificates in such diverse content areas as Religion, English, Physical Education, Health, and Business.

In order to investigate how one's certification area may influence the approach one takes to a course, the researchers sought to examine the status of the pre-college psychology course from the perspective of three major groups of certified teachers: the 149 teachers certified in the Social Studies, the 65 certified Guidance Courselors, and the 114

teachers representing all the other miscellaneous areas of certification. The remainder of this paper will stress the responses of these three groups of teachers from both descriptive and comparative perspectives.

DESCRIPTION OF SCHOOLS OFFERING PSYCHOLOGY COURSES

Information relative to the nature of the schools where these teachers taught was obtained. These data were concerned with the public-private status of the schools, the school population, size, and the geographical location and background setting of the school. The results collected relative to these school characteristics are reported below.

School classification

The responses of these three groups indicated that over 80 percent of the teachers in each group taught psychology in public secondary schools with most of the others in each group teaching in Catholic parochial schools. Of those responding, 123 (82.6%) of the Social Studies, 54 (83.1%) of the Guidance Counselors, and 94 (82.5%) of the "Other" category teachers taught psychology in public school settings. Meanwhile, 24 Social Studies teachers (16.1%), 7 Guidance Counselors (10.8%), and 12 Other category teachers (10.5%) taught their separate courses in Catholic parochial schools. The few other teachers in each of the three groups taught in private religious or non-religious school settings.[5]

School enrollment characteristics

When the responses of these teachers regarding the enrollment of the schools where they taught were examined, an interesting pattern was revealed. Of the 149 Social Studies teachers, 51 (34.4%) taught in schools with enrollments of less than 500, 29 (19.6%) in schools

with enrollments between 500 and 1,000, (11.5%) in schools with enrollment between 1000 and 1,500, and 51 (34.4%) with enrollments exceeding 1,500 students. Of the 65 Guidance Counselors, 40 (61.5%) taught in schools with less than 500 students each, 18 (27.7%) in schools with enrollments between 500 and 1,000, and 7 (10.8%) in schools with enrollments over 1,000 students. Of the 114 teachers certified in "Other" areas, 47 (41.2%) taught in small enrollment schools of less than 500, 24 (21.1%) in schools with enrollments between 500 and 1,000, 12 (10.5%) in schools with enrollments between 1,000 and 1,500 students, and 31 (27.2%) taught in schools exceeding 1,500 enrolled students.

These data clearly show that as the size of the school enrollment increases, the psychology teacher was less likely to be certified in Guidance and Counseling and more likely to be certified in either the Social Studies or some other area (primarily "Psychology"). This pattern suggests that one of the duties of Guidance Counselors in small schools is to teach the psychology course with this course being turned over to full time teachers as the school increases in enrollment. Of the 118 schools with enrollments exceeding 1,000 students, only 7 offered courses taught by Guidance Counselors while 68 schools offered similar courses taught by Social Studies certified teachers.

Geographic settings of the school

The respondents were asked to identify the rural-suburban-urban setting of their particular school location and student population. While the largest number of teachers in each of these settings held Social Studies certificates, it was interesting to discover that far more rural schools (165 of 328, or 50.8%) offered separate courses in

psychology for credit than did either suburban (89 or 27.4%) or urban (65 or 20.0%) schools. Sixty-one (41.2%) of the Social Studies certified psychology teachers taught in rural schools while 46 (31.1%) and 37 (25.0%) taught in suburban and urban school settings. Of the Guidance Counselors, 48 or 75.0% taught their psychology courses in rural schools. The pattern for the 113 teachers certified in "Other" areas resembled that revealed in the Social Studies teacher responses.

These data lend support to the distribution revealed above in the school enrollment figures. With rural schools traditionally having smaller enrollments, the task of teaching the separate course in psychology appears to be assigned, whenever possible, to the Guidance Counselors. As school enrollment increases, as in urban and suburban settings, the course increasingly is assigned to teachers certified in the Social Studies or some "Other" area of subject matter training (Stahl, Matiya, & Hunt, 1980).

In review, the above information indicates that regardless of school type, size, or location, the majority of psychology course teachers held Social Studies certificates. Only in small schools in rural settings did Guidance Counselors challenge this dominance. Finally, the distribution of psychology teachers holding "Other" areas of certification tended to parallel that of the Social Studies teacher responses.

COURSE DESCRIPTIONS

Elective or required status of the course

When asked whether the specific course in psychology was offered as an elective or required course in their schools, 144 of the Social Studies teachers (96.6%), 62 of the Guidance Counselors, (95.4%) and 112 of the

"Other" certified teachers (99.1%) marked the 'elective' response category. Of the 324 teachers responding to this item across all three categories, only 6 reported that psychology course was a required one at their particular school. In 4 of these 6 schools, the psychology courses were taught by Social Studies certified teachers.

Number of sections taught

In response to the item concerning the number of class sections of psychology they taught each day, the data from the Social Studies teachers revealed that 52 teachers (35.4%) taught one section, 37 (25.2%) taught two sections, 29 (19.7%) taught three sections, 20 (13.6%) taught four sections, and 9 (6.2%) taught five or six sections each day. Among the Guidance Counselors, 44 (68.8%) taught only one section each day while 13 (20.3%) taught two sections, 5 (7.8%) taught three sections, 2 (3.1%) taught four sections, and none taught five or more sections of the course. Of the teachers certified in "Other" areas 46 (41.4%) taught one section, 22 (19.8%) taught two sections, 21 (18.9%) taught three sections, 10 (9.0%) taught four sections, and 12 (10.8%) taught five or six sections on a given day.

Of the 322 psychology teachers who responded to this item, 142 or 44.1% taught only one section of the course per day. Collectively, these teachers taught a total of 678 sections among themselves with 340 or 49.8% of these being taught by Social Studies certified teachers. As suggested by these overall data, if a school offered but one section of psychology, it was almost equally likely the teacher would come from any one of these three groups of certified teachers. However, should two or more sections be offered, the chances that the teacher held a

Guidance Counselor certificate greatly diminished in favor of teachers in the Social Studies or in some other area of subject matter training.

Additional information concerning the number of sections taught support the above explanation. The Guidance Counselors averaged only 1.45 sections of psychology each day (s.d. = .78) in contrast with the 2.31 sections (s.d. = 1.29) and 2.30 sections (s.d. = 1.42) averaged respectively by the Social Studies and "Other" certified teachers. This distribution of mean differences among the sections taught by these groups was found to be a statistically significant one using ANOVA ($F = 11.89$, $p < .001$; See Table 1).

Number of students taught

Not only do Social Studies certified psychology teachers teach more sections of this course per day, but they also come into contact with more students per year in these courses. During the 1977-78 school year, the Social Studies teachers faced an average of 111.4 students each (s.d. = 103.0). This student enrollment figure is to be contrasted with 54.3 students averaged by the Guidance Counselors (s.d. = 54.9) and the 110.1 students averaged by the "Other" teachers (s.d. = 120.7). Collectively, the 325 teachers responding to this item reported teaching a total of 32,347 students in their respective courses during the 1977-78 school year. Of this total, 16,376 or 50.6 percent were taught psychology by teachers certified in the broad area of the Social Studies.

The total enrollment figures of 32,347 for 1977-78 should be examined in light of the 1976-77 enrollment total of 30,985 students as reported by these same teachers. The previous year found the average Social Studies teachers teaching 117.9 students with the Guidance

TABLE 1

ANOVA Data Related to Number of Sections of Precollege Psychology These Three Groups of Teachers Taught Each Day

Source	df	SS	MS	F-Ratio
Between Groups	2	37.33	18.67	11.89*
Within Groups	319	500.65	1.57	
TOTAL	321	537.98		

* $p < .001$

Counselors and "Other" area teachers averaging 57.6 and 108.6 students, respectively. The 1977-78 total represents an increase of 1,362 students or 4.4 percent in enrollment for the psychology course over the previous year. According to the results, 23 teachers of psychology during the 1977-78 period had not taught the course in their schools the previous year. Of these 23 new teachers of psychology, 12 were certified in the Social Studies.

Length of the course

Approximately three-fourths of the courses taught by teachers in each of these three certification-area groups were one semester in length (i.e., 76.5%, 76.9%, and 71.1%, respectively, for the Social Studies, Guidance Counseling, and "Other" certification area teachers). The second most popular length for such courses was the full year course with an approximate 20 percent frequency for each of these three groups. Courses of various lengths including six and nine week units were taught by about 5 percent of the teachers in each of these three groups. In general, the distribution among these teachers in respect to the length of their psychology courses was nearly identical across all three categories.

POPULARITY OF THE PSYCHOLOGY COURSES

The teachers were asked to reveal whether they thought the psychology course was considered a "popular" one for students to take in their particular schools. Their responses showed 93.9% of the Social Studies and 89.1% of the "Other" certified teachers considered the course to be popular among students in their schools. Somewhat surprisingly, only

79.9% of the responding Guidance Counselors reported the course as being popular. A Chi-square analysis revealed the margin of difference among these three groups relative to course popularity was a significant one (X^2 = 10.13, p = .04). For whatever reason, students appear to like psychology more when it is taught by Social Studies and "Other" certified teachers than they do courses taught by Guidance Counselors.

DESCRIPTIVE DATA CONCERNING STUDENTS ENROLLED IN PSYCHOLOGY COURSES: TEACHER SURVEY RESULTS

Besides information in the school setting and course characteristics, descriptive data relative to the student make-up of the psychology classes themselves were obtained.

Sex of the students enrolled

When data regarding the sexual make-up of students enrolled in these courses were examined, it was revealed that 239 of the 322 teachers responding to this item taught classes with predominant female enrollment (74.2%) while 36 teachers (11.2%) taught predominantly male classes, and 47 teachers (14.6%) taught equally balanced classes of males and females. This heavily female enrollment pattern parallels similar data from previous studies of schools in several different states (Stahl, 1974, 1976, 1977b).

From the perspective of certification, 103 Social Studies teachers (70.5%) taught female dominant and 21 (14.4%) taught male dominant classes while 22 teachers (15.1%) had classes of about equal sex distribution. Guidance Counselors tended to teach either predominantly female classes (42 or 66.7%) or balanced classes (14 or 22.2%) while a large majority

of the "Other" teachers taught classes enrolling mostly females (94 or 83.2%).

Racial mixture within psychology courses

Better than 4/5 of the courses taught by these three groups of teachers enrolled white-to-black students at a ratio of 95% white/5% black regardless of the rural-urban-suburban location of the school or of the white-to-black ratio of the overall student population of the school. Thus, 126 Social Studies teachers (86.3%), 57 Guidance Counselors (87.7%), and 104 "Other" teachers (92.9%) taught classes enrolling a white-to-black student ratio which approximated 95% white/5% black. Only 3 Social Studies teachers (2.1%), 5 Guidance Counselors (7.7%), and 3 "Other" teachers (2.7%) taught in courses with an enrollment of more than 50% black-to-white students.

These data reveal that better than 90 percent of the teachers in each category taught classes which enrolled whites-to-blacks at a ratio of better than 80% white, to 20% black. This enrollment pattern of extremely heavy white student populations is identical to that found in Florida and Mississippi schools (Stahl, 1976, 1977b). For whatever reason, it is clear that even though the course is an elective one, black students in Illinois, like in Florida and Mississippi, do not enroll in psychology regardless of what proportion of blacks make up the overall school enrollment.

Grade level of students in psychology classes

The teachers were asked to indicate what grade levels of students were eligible to enroll in their particular psychology courses. An

analysis of the Social Studies teacher responses revealed 93 (63.3%) taught courses enrolling 11-12th grade students, 39 (26/5%) taught courses for 12th graders only, and 10 (6.8%) taught courses which enrolled 10-12th graders. An almost identical pattern was found for the "Other" teachers with figures of 73 (64.6%), 30 (26.5%), and 9 (8.0%) for these same three grade categories. At the same time, only 33 of the Guidance Counselors (50.8%) taught courses for 11-12th graders while 22 (33.8%) taught courses for 12th graders only, and 9 (13.8%) taught courses for 10-12th graders. Other grade levels and grade combinations made up the remaining categories.

In looking at all these teachers collectively, 199 or 61.2% taught courses enrolling 11-12th graders, while courses for 12th graders only was a distant second (91 or 28.0%). Twenty-eight teachers (8.6%) taught courses with 10-12th graders enrolled. Of special interest is the pattern of enrollment of psychology courses which was revealed in a longitudinal study of Florida from 1970-71 to 1974-75 (Stahl, 1976). Its pattern clearly showed that gradually schools maintained or increased their levels of student enrollments by opening up the course to other grade level students. Schools often initiated the course exclusively for 12th graders, then opened it to 11th-12th graders, and then gradually to 10th through 12th graders. Hence, this opening of course enrollment to lower grade level students has often been mis-read as though a greater number of students (usually 12th graders) are enrolling in the course. Consequently, Psychology course enrollments are temporarily showing increases in some schools/states only because lower grade level students are increasingly being allowed to take the course. Combining

this enrollment tendency with the prevailing "back-to-basics" movement, psychology may well begin to loose enrollment over the next few years as budgets tighten and as elective courses give way to more basic skills oriented programs and units.

DESCRIPTIVE DATA CONCERNING STUDENTS ENROLLED IN PSYCHOLOGY COURSES: STUDENT SURVEY RESULTS

These teacher data relative to some of the characteristics of students enrolled in their courses can be examined in light of the information collected from the 1,137 students who were surveyed. Being randomly selected, these student responses represent a cross-sampling of students and classes across Illinois. Included as part of the student questionnaire were five items designed to gather descriptive data relevant to the sex, race, age, and grade level of each respondent. Information was also collected as to the grade each student earned in the psychology course for the previous grading term.

Sex of students enrolled

Overall, nearly three-fourths of the teachers indicated their classes consisted of a majority of female students. Taken collectively, these teacher respondent data are consistent with numerous other studies reporting a preponderant female majority in high school level psychology classes (Kasschau and Werthiemer, 1974).

As expected from the teacher data, females did make up a clear majority of the 1,137 student population sampled in this survey. Of these students, 684 or 60.3% were female and 450 or 39.7% were males. These percentages run nearly parallel to the population data for sex

of students in similar courses in both Florida and Mississippi (Stahl, 1976, 1977b).

Combined with other available data, a composite description of the 'typical' female and male psychology student can be developed. The typical female student was white, in the twelfth grade, and most likely 17 years of age. The typical male was a white 12th grader and equally likely to be 17 or 18 years of age. The chances are very good that both students received a better grade of "A" or "B" in psychology for the last grading term.

Race of students enrolled

When these data were analyzed according to the race of the students enrolled, the results were consistent with those reported by their teachers. Of the 328 urban/suburban/rural teachers, 308 had reported heavy white enrollments of 80 percent or higher in the separate psychology courses. This high proportion of white enrollment was supported by the student data. An overwhelming majority of the 1,137 students, 955 students or 84.5% were white. Black students, 142 or 12.6%, were the second most numerous racial group while only 33 or 2.9% made up a third category of "other" students.

Grade levels of students enrolled

According to the teacher survey results, of the 328 schools represented, 290 opened the psychology courses to just 12th graders or to 11th-12th graders combined. Far fewer schools, 38, even allowed 9th and/or 10th graders to enroll in these courses. The student results confirm these teachers reports of a larger senior majority in these classes.

When the student responses were examined, the findings revealed that two-thirds of the 1,137 students (753 or 66.9%) were seniors, with juniors (326 or 29.0%), sophomores (46 or 4.1%), and freshmen (1 or .1%) following in that order. As expected, 12th and 11th graders do make up the vast majority of students enrolled in these courses.

At all grade levels, the typical student was a white female. As one would expect, as the grade level rose, so the age level of the students increased with the ninth graders being 14 years of age, tenth graders primarily 15 and 16 years of age, eleventh graders about evenly divided between 16 and 17, and twelfth graders nearly equally divided between 17 and 18 years of age. In summary, 62.9% of these students were 17 or 18 year old seniors.

Age level of students enrolled

In one study Stahl (1976) reported that 45.8% of the 1,215 Florida psychology students in 1974-75 were 17 years of age, 36.1% were 18, 16.9% were 16, with the rest being 14, 15, or 19 years of age. Data from the survey of Illinois students found that 505 students were 17 years of age (44.5%), 383 were 18 years old (33.7%), 193 were 16 years of age (17.0%), 36 or 3.2% were 19, 16, or 1.4% were 15, and 2 or .2% were 14 years of age. Collectively, 887, or 78.2% of these 1,137 students were 17 or 18 years of age. These overall percentages of students per each age level are somewhat equivalent for students in Florida, Mississippi, and Illinois (see Table 2).

Academic grades these students received

Each student was also asked to identify the grade s/he received in the psychology course for the previous grading term. Nearly a

TABLE 2

Descriptive Data on Psychology Students in Three States

Student Characteristic	1,215 Florida Students 1974-75	724 Mississippi Students 1975-76	754 Mississippi Students 1977-78	1137 Illinois Students 1977-78
Females	58.6	63.5	57.8	60.3
Males	41.4	36.5	40.2	39.7
Whites	88.1	78.8	90.8	84.5
Blacks	9.1	21.0	4.9	12.6
Other	2.8	.2	4.3	2.9
Freshman	.6	2.8	.1	.1
Sophomores	2.3	3.8	3.1	4.1
Juniors	31.1	21.5	27.6	29.0
Seniors	66.0	71.9	69.2	66.9
14 years old	.3	2.1	.1	.2
15 years old	.9	3.1	.9	1.3
16 years old	16.9	15.8	16.0	17.1
17 years old	45.8	49.3	46.2	44.6
18 years old	36.1	28.2	35.9	33.7
19 years old	.0	1.7	1.9	3.1
"A" Grade	26.3	33.6	25.3	26.7
"B" Grade	37.4	37.4	31.9	31.7
"C" Grade	23.4	17.7	26.5	25.3
"D" Grade	8.7	8.0	11.7	10.8
"E/F" Grade	4.1	3.9	3.8	4.5
N.A.	.0	.0	.7	1.0

third of the grades received by these students were "B" grades (356 responses of 31.7%). "A's" were the second most received grades (299 responses or 26.6%) followed very closely by "C" grades (285 responses or 25.4%). "D" grades were received by 121 students (10.8%) while 50 students (4.5%) reported a grade of "F". Eleven students reported not receiving grades the previous grading term and fifteen failed to respond to this item.

Summary of student descriptive data

As a result of these data, a composite description of the 'typical' high school psychology student in Illinois can be developed. She is a white, 17 year old senior student enrolled in a school of over 500 students. If her class averaged 30 students, it would include approximately 15 white females, 10 white males, 3 black females, and two black males. The majority of her classmates are 17 or 18 year old seniors with about a third being juniors. Of the 30 students, about 10 received a "B", while approximately 8 received "A", 8 "C"'s, 3 "D"'s and 1 "F" for the last grading term. Our 'typical' student probably earned an "A" or "B" on her report card. With few minor exceptions, these student data are nearly identical to the composites of the 'typical' psychology student found in both Florida and Mississippi (Stahl, 1976, 1977b).

CHARACTERISTICS OF THE TEACHERS

Besides school and course descriptive data, an attempt was made to obtain information about the teachers themselves. Were teachers in each of these three certification groups different in terms of their sex, college training, or felt adequacy to teach the course? Were teachers

in one of these three groups more "humanistic" or "behavioristic" in their approach to the course. The obtained data revealed some interesting patterns among these teachers.

Sex of psychology teachers

Although not specifically requested, the researchers assigned a sex code to each respondent according to the title and/or name cited on the questionnaire name and address section. By using titles (e.g., Ms., Mrs., Miss, Mr.) or first names, 308 of the 331 teachers were able to be identified as either being female or male. As a consequence of this procedure, it was possible to examine the female-male makeup of these three groups of teachers.

Overall the 308 sex-identified teachers, 214 were male (69.5%) with the remaining (94 or 30.5%) being female. The data revealed 77.6% of the "Other" certified teachers were males with the corresponding difference in each group being females (i.e., 22.4%, 34.5%, and 39.1%, respectively).

College psychology course preparation

Information was obtained concerning the number of undergraduate and graduate level psychology and educational psychology courses these teachers completed on the college/university level. In order of frequency, 112 teachers making up the "Other" category averaged 32.9 hours of psychology course background in college (s.d. = 17.41). The 63 Guidance Counselors averaged 32.6 college credit hours in psychology and/or educational psychology courses (s.d. = 15.87). The 144 Social Studies teachers responding to this time reported a much lower average of 24.8 hours (s.d. = 14.85). Using ONEWAY ANOVA, the difference between the first two groups means and that of the Social Studies teachers was

found to be a significant one ($F = 9.87$, $p < .001$, see Table 3).

At least one teacher in each of these three groups reported having over 90 hours of college level psychology coursework. Quite remarkably, one Social Studies and one "Other" category of teachers revealed having taken no specific course in psychology or educational psychology on the college level.

Felt adequacy towards the course

The teachers were asked to indicate whether they felt they were adequately prepared to teach psychology on the pre-college level. Of the 114 teachers in the "Other" certification group, 104 or 91.2% reported they felt adequately prepared followed closely by 59 of the 65 Guidance Counselors (90.8%). Meanwhile, only 127 of the 149 Social studies teachers (85.2%) indicated they were secure about their college preparation to teach the course. Since a majority of the 114 "Other" category teachers, 66 or 57.9%, were certified in the content area of Psychology and since the Social Studies teachers were the least likely of these three groups to have had extensive college level Psychology course preparation, the pattern above was not unexpected.

In general these data suggest very strongly that increased college level coursework in psychology relates rather directly to one's felt adequacy to teach 'psychology' to secondary school students. However, this is not to imply that either college course background training or felt adequacy translates directly into quality and effectiveness of teaching 'psychology' for the teachers involved.

Humanistic-Behavioristic approach of teachers

One item on the questionnaire asked teachers to indicate whether the approach they took to their psychology course was "Humanistic" or

TABLE 3

ANOVA Data Related to Number of College Credit Hours

These Teachers had Received in Psychology and Educational Psychology Courses

Source	df	SS	MS	F-Ratio
Between Groups	2	5048.74	2524.37	9.87*
Within Groups	316	80809.02	255.72	
TOTAL	318	85857.76		

*$p < .001$

"Behavioristic" in nature. Neither term was defined for the respondents. Overall, 317 of the 331 teachers responded to this item with 47 or 14.8% of these marking both the humanistic and behavioristic options on the form. For purposes of analysis, this double response was converted into a third category and assigned the label, "Eclectic." The response to these three categories of approaches were then examined.

Of the three groups of teachers, a slightly higher percentage of Social Studies certified teachers were found to be 'behavioristic' (56 or 143 or 39.2%) than were either the "Other" group (42 or 37.8%) or the Guidance Counselors (18 or 28.6%). In contrast, 60.3 percent of the Guidance Counselors and 50.2% or the "Other" teachers reported being 'humanistic' in their approach compared to only 42.0 percent of the Social Studies teachers who followed a similar approach. A larger percentage of Social Studies teachers, 18.9%, reported being 'eclectic' in their approach than did the other two groups (i.e., 11.7% and 11.9% for these two groups). (See Table 4).

The Social Studies certified psychology teachers involved in this study were more likely to adopt a 'behavioristic' approach to the psychology course than were teachers from the other two groups. When the 'eclectic' category is dropped, the majority of the remaining 116 Social Studies teachers, 60 or 51.7%, were found to adhere to a "humanistic" approach.

The data pattern reflected in the 'behavioristic-humanistic' item responses is open to a variety of possible interpretations. From these data one might argue that a far greater percentage of Guidance Counselors were humanistic in their approach than were Social Studies or "Other"

TABLE 4

Frequencies and Percentages for These Three Groups of Teachers Relevant To the Humanistic-Behavioristic-Eclectic Approach They Took to Their Courses

Area of Certification	Humanistic F	Humanistic %	Behavioristic F	Behavioristic %	Eclectic F	Eclectic %	TOTAL
Social Studies	56	39.2	60	42.0	27	18.9	143
Guidance Counselor	18	28.6	38	60.3	7	11.1	63
'Other'	42	37.8	56	50.5	13	11.7	111
TOTALS	116		154		47		317
Percentage of all Respondents	36.6%		48.6%		14.8%		

Chi-Square = 7.47 (df=4), p = .11

certified teachers. At the same time, it must be remembered that what is/was meant by the labels 'humanistic' and 'behavioristic' was completely up to the persons completing the questionnaire item. While it is often assumed that teachers who adhere to these two approaches are quite different teachers who teach very different psychology courses, previous research (Stahl, 1977a, 1978) has revealed that groups of teachers claiming these two labels taught identical courses. These results would suggest that an identification or association with either the humanistic or behavioristic labels does not necessarily represent an accurate description of what the teacher actually does in terms of teaching the psychology course.

COURSE OBJECTIVES, CONTENT, AND METHODS

Besides looking at the characteristics of the schools, the course offering, and the teachers themselves, data were also obtained concerning the objectives set for the course, the topics and content subject matter included in the course, and the method used by these teachers to teach psychology.

Course objectives

These teachers were asked to identify the objectives they set for their respective psychology courses. A list of 12 instructional objectives commonly cited for these courses was provided along with the request that the teachers check any and all of the objectives which reflected those they set for their own courses. If those provided were inappropriate, they could write in those course objectives they did set. As stated in the order of their appearance in the questionnaire, the 12 objectives are:

(a) To help students in their vocational planning.

(b) To help students develop an appreciation for psychology as a field of scientific knowledge and inquiry.

(c) To prepare students for college psychology courses.

(d) To eliminate many of the misconceptions students have about psychology and psychologists.

(e) To assist students in preparing for future family life.

(f) To assist students in developing a basic philosophy of life.

(g) To help students understand and deal with the personal problems.

(h) To assist students in understanding the vocabulary associated with psychology.

(i) To assist students in adjusting to life and solving life's problems.

(j) To help students better understand and accept themselves as individuals.

(k) To help students apply psychological knowledge to understand contemporary social problems and events.

(l) To help cope with problems associated with emerging adolescence.

The percentage of total responses for each group of teachers, the ranking assigned each objective, and the Chi-square value for each objective are given in Table 5.

As shown in Table 5, the teachers in each of these three groups agreed nearly exactly in the objectives they most emphasized in their respective courses. The greatest differences in rankings are for the Cope with adolescence objective (a difference of 4 ranks between the Social Studies

Table 5

A Summary of Frequencies, Percentages, Adjusted Chi-Square Values, and Ranks Assigned to Course Objectives by the Three Certification-Area Groups of Teachers and Their Students

Course Objectives	Social Studies F	%	R	Guidance Counselors F	%	R	Others F	%	R	Chi-Square	p	Students %	R
a) Understand themselves	135	90.6	1	57	87.7	3	94	82.5	1	3.86	.15	45.6	3
b) Understand personal problems	116	77.9	2	58	89.9	1.5	88	77.2	2	4.43	.11	55.8	1
c) Adjusting to life	114	76.5	3	58	89.9	1.5	84	73.7	3	6.21	.04	47.4	2
d) Appreciation for psychology	105	70.5	4	43	66.2	4	79	69.3	4.5	.40	.82	28.8	8
e) Understanding vocabulary	102	68.5	5	41	63.1	6	79	69.3	4.5	.81	.67	15.5	12
f) Cope with adolescence	94	63.1	6	38	58.5	8	63	55.3	11	1.67	.43	24.1	9
g) Prepare for college psychology	92	61.7	7	39	60.0	7	71	62.3	6	.09	.95	34.0	6
h) Future family life	89	59.7	8	37	56.9	9	66	57.9	10	.18	.92	40.5	4
i) Philosophy of life	88	59.1	9	42	64.6	5	70	61.4	7	.60	.74	31.9	7
j) Apply psychological knowledge	86	57.7	10	35	53.8	10	67	58.8	9	.43	.80	37.8	5
k) Eliminate misconceptions	85	57.0	11	29	44.6	11	68	59.6	8	4.06	.13	22.5	10
l) Vocational planning	29	19.5	12	6	9.2	12	16	14.0	12	3.91	.14	21.3	11

and 'Other' teachers). The only significant Chi-square value (6.21, p = .04) was found for the Adjusting to life objective. However, despite the significant differences among the percentage of teachers in these groups who set this particular objective for their course, this objective was still among the top three posited by all three groups. Interestingly, all three groups of teachers ranked the Vocational planning objective in 12th position.

When the ranking for these topics by the teachers were compared, the Spearman rank order correlation coefficients between the Social Studies and Guidance Counselor rankings was found to be .90, .84 between Social Studies and "other," and .88 between Guidance Counselors and "Other". All three coefficients were significant at the .01 level.

Table 5 also presents the rankings of these objectives by the 1,137 students who responded to this item as reasons for enrolling in the course. The comparison of teacher-student rankings revealed that the same three objectives most stressed by teachers were identical to the three most important reasons why their students took the course. The two objectives-reasons with the greatest disagreement in rankings were Understanding vocabulary and Future family life. Spearman rank-order correlation coefficients were computed between the student rankings and each of the three groups of teacher rankings. These coefficients were found to be .55 for the Social Studies, .61 for the Guidance Counselors, and .49 for the "Other" teachers.

Content included within these courses

One way to describe the subject matter content of a course is to obtain information concerning the specific topics and concepts covered

by the teacher. The questionnaire listed 22 topics generally included in pre-college psychology courses, with the request the teachers identify those topics they had included or would include in their courses during the school year. The responses of these three groups of teachers were totaled and ranked. Table 6 presents the percentages, rankings, and Chi-square values for this item.

Unlike the nearly identical rankings for the course objective, the teachers in each of these three groups were somewhat dissimilar in the topics and content they most often included in their courses. For example, even though Personality theory was ranked first by both the Social Studies teachers and Guidance Counselors and second by the "Other" groups of teachers, the difference in the percentage of teachers in each group who taught this particular topic was found to be a significant one ($x^2 = 6.47$, $p = .04$). Yet, few real differences exist among these three groups in the content which they taught. Of the 22 topics, an average of 13.7 were taught by the Social Studies teachers, 13.4 by the Guidance Counselors, and 14.4 by the "Other" teachers.

When the ranks were contrasted via rank order correlation analysis, coefficients of .98 for the Social Studies-Guidance Counselor rankings, .96 for the Social Studies-"Other" rankings, and .94 for the Guidance Counselor-"Other" teacher rankings were computed. All of these were found to be in significant agreement with one another ($P < .001$). Taken collectively, these data would strongly suggest that teachers in these three groups tended to teach with nearly the same degree of emphasis the same topics and content in their respective psychology courses while focusing on nearly identical objectives which these teachers themselves set for this particular course.

Table 6

A Summary of Frequencies, Percentages, Adjusted Chi-Square Values, and Ranks Assigned to the Topics These Teachers Actually Included in Their Pre-College Psychology Courses

Topics	Social Studies F	%	R	Guidance Counselors F	%	R	All Others F	%	R	Chi-Square	p
a) Personality Theory	144	96.6	1	60	92.3	1	101	88.6	2	6.47	.04
b) Mental Illness	125	83.9	2.5	51	78.5	4	105	92.1	1	6.98	.03
c) Learning Theory	125	83.9	2.5	48	73.8	6	86	75.4	6.5	4.06	.13
d) Mental Health	123	82.6	4	50	76.9	5	95	83.3	5	1.27	.53
e) Emotions	121	81.2	5	58	89.2	2	96	84.2	4	2.17	.34
f) Intelligence	119	79.9	6	54	83.1	3	85	74.6	8	2.03	.36
g) Abnormal Behavior	116	77.9	7	47	72.3	7	98	86.0	3	5.25	.07
h) Motivation	113	75.8	8	46	70.8	8	86	75.4	6.5	.67	.72
i) Human Growth-Development	105	70.5	9	41	63.1	10.5	83	72.8	9	1.92	.38
j) The Adolescent	101	67.8	10	37	56.9	13.5	78	68.4	12	2.89	.24
k) Sensation and Perception	96	64.4	11	39	60.0	12	78	68.4	12	1.32	.52
l) Parapsychology, ESP	90	60.4	12	41	63.1	10.5	73	64.0	14	.39	.82
m) Social Behavior	88	59.1	13	45	69.2	9	81	71.1	10	4.66	.10
n) Mental Retardation	85	57.0	14	36	55.4	15	78	68.4	12	4.45	.11
o) History of Psychology	78	52.3	15	37	56.9	13.5	63	55.3	16	.45	.80
p) Drugs, Alcoholism, etc.	65	43.6	16	32	49.2	16	70	61.4	15	8.26	.02
q) Love	61	40.9	17	31	47.7	17	59	51.8	18	3.13	.21
r) Heredity/Genetics	58	38.9	18	30	46.2	18.5	61	53.5	17	5.56	.06
s) Marriage and the Family	52	34.9	19	30	46.2	18.5	50	43.9	19	3.33	.19
t) Human Body/Physiology	51	34.2	20	23	35.4	20	44	38.6	20	.55	.76
u) Child Care	44	29.5	21	20	30.8	21	42	36.8	21	1.67	.43
v) Statistic	28	18.8	22	17	26.2	22	26	22.8	22	1.58	.45

In sharp contrast to the strong agreement with one another, when these teacher rankings were contrasted with the rankings students gave to the same topics indicating what they wanted taught in the psychology courses, the coefficients were not so high. When computed, rank order coefficients between student rankings and the Social Studies, Guidance Counselors, and "Other" teachers were found to be .47, .51, and .53, respectively.

Topics which should be taught

An individual may argue that these teachers may have been prevented for whatever reasons from teaching the content and topics they really believed should be included in psychology courses on this level. Was it possible that these teachers were restricted to the content they indicated they included in the above section? One way to offset the possible influence of outside controlling factors as well as to identify what these teachers would include in such courses if given the freedom to select their own content was to ask teachers to specify the topics they thought ought to be included in psychology courses offered to secondary school students.

The same list of 22 topics in the identical order of display as presented previously was provided the respondents. They were asked to indicate all of those topics they believed should be included in their courses and in similar courses in other schools. A space was provided for those who desired to write in other topics and content not included on the original list. Table 7 gives the percentages, ranks, and Chi-square values for the teacher and student responses to this item.

Table 7

A Summary of Frequencies, Percentages, Adjusted Chi Square Values, and Ranks Assigned the Topics These Teachers and Students Indicated Should be Included in Pre-College Psychology Courses

Topics	Social Studies F	%	R	Guidance Counselors F	%	R	Others F	%	R	Chi-Square	p	Students %	R
a) Personality Theory	137	91.9	1	57	87.7	2	103	90.5	1	.96	.62	60.8	5
b) Emotions	127	85.2	2	58	89.2	1	99	86.8	4.5	.63	.73	76.3	1
c) Mental Illness	125	83.9	3	52	80.0	5	102	89.5	2.5	3.22	.20	64.9	3
d) Mental Health	122	81.9	4	50	76.9	9	102	89.5	2.5	5.29	.07	55.7	10
e) Learning Theory	121	81.2	5	49	75.4	10	92	85.1	7	2.58	.28	50.9	11
f) Motivation	118	79.2	6	51	78.5	7	99	86.8	4.5	3.10	.21	42.7	16
g) The Adolescent	116	77.9	7	53	81.5	4	90	78.9	9	.37	.83	56.7	9
h) Abnormal Behavior	115	77.2	8	48	73.8	11	96	84.2	6	3.20	.20	59.8	7
i) Growth and Development	113	75.8	9	54	83.1	3	88	77.2	11	1.40	.50	45.2	14.5
j) Social Behavior	111	74.5	10	51	78.5	7	80	78.9	9	.84	.66	65.7	2
k) Intelligence	110	73.8	11	51	78.5	7	90	78.9	9	1.11	.57	45.5	13
l) Sensation and Perception	100	67.1	12	40	61.5	13	84	73.7	13	3.00	.22	38.7	18
m) Mental Retardation	85	57.0	13	37	56.9	14	86	75.4	12	10.89	.004	50.0	12
n) Parapsychology, ESP	77	51.7	14	29	44.6	19.5	69	60.5	15	4.52	.10	42.0	17
o) History of Psychology	76	51.0	15	33	50.8	17	62	54.4	18.5	.36	.84	30.6	20
p) Drugs, Alcoholism, etc.	73	49.0	16	36	55.4	15	70	61.4	14	4.03	.13	60.0	6
q) Marriage and the Family	70	47.0	17	42	64.6	12	66	57.9	17	6.60	.04	59.0	8
r) Love	68	45.6	18	35	53.8	16	68	59.6	16	5.18	.08	61.1	4
s) Child care	67	45.0	19	29	44.6	19.5	49	43.0	20	.11	.95	45.2	14.5
t) Heredity and Genetics	58	38.9	20	32	49.2	18	62	54.4	18.5	6.48	.04	35.0	19
u) Human body/physiology	54	36.2	21	27	41.5	21	46	40.4	21	.73	.69	22.3	21
v) Statistics	36	24.2	22	18	27.7	22	32	28.1	22	.60	.74	18.4	22

As in previous studies involving both Florida (Stahl and Casteel, 1973; Stahl, 1976) and Mississippi (Stahl, 1977b) teachers, the topic selected as most important to teach and to be included in high school psychology courses was Personality theory. And, as with the 'topics included' section, these teachers were found to be in relatively close agreement as to what content ought to be taught in their courses. A statistically significant difference was found among the percentage of teachers in each of the three groups who favored the three topics, Mental retardation, Marriage and the family, and Heredity and genetics, yet their rankings for these same topics were very similar. Of the 22 topics listed, the average Social Studies teacher thought 14.0 topics should be included while the Guidance Counselors and "Other" teachers averages were greater than the averages computed for the actual number of concepts and topics then being taught by these same teachers.

When the rankings for these topics were examined using rank correlations, it was found that the Social Studies and "Other" teacher rankings were closer (r_s = .97) than were those for Social Studies-Guidance Counselors (r_s = .88) and the Guidance Counselor-"Other" teachers (r_s = .86). The rankings of each of these three groups were correlated with the rankings of the students as to those topics the students wanted taught in the psychology courses they were taking. The correlation procedure produced coefficients of .57 for the Social Studies-student rankings, .65 for the Guidance Counselor-student rankings, and .63 for the "Other"-student rankings. As can be seen in Table 7, the student rankings were more different from all three sets of teacher rankings than were the teacher rankings with one another.

Finally, the rankings for topics being taught and those that should be taught were compared to determine the degree these teachers were able to emphasize the content in their courses they believed ought to be included in these courses. The rank order coefficient for the Social Studies teacher ranking was .85, for the Guidance Counselors, .89, and for the "Other" teachers, .86.

Methods used in teaching the psychology course

Yet another way of looking at what may actually be going on inside a particular course is to examine the methods the teachers used in teaching their psychology courses. Eight methods were listed as were five scale categories ranging from "Use a great deal" (5) to "Rarely use" (1). This would allow for the examination of frequency of use of one method over another. Table 8 provides the frequencies, Mean frequency of use, and ANOVA values for the responses to this item.

The data displayed in Table 8 illustrates the degree of similarity among these three groups of teachers in the order of overall frequency of their use of methods. It is interesting to note that across all three groups, the teachers used a wide range of methods and differed greatly in the extent of their use of these methods. The ANOVA results reveal that these teachers were quite similar in their frequency of use of these methods.

USE OF AUDIO-VISUAL INSTRUCTIONAL AIDS

Information was collected regarding the orientation of these teachers relative to different types of instructional resources which could be used in teaching the psychology course. When asked whether they felt a need

Table 8

A Summary of the Frequencies, Means, Standard Deviations, and ANOVA F-Values Associated With the Methods These Three Groups Used to Teach Their Respective Psychology Courses

Method of Instruction	Social Studies F	$\bar{x}$	s.d.	Guidance Counselors F	$\bar{x}$	s.d.	All Others F	$\bar{x}$	s.d.	F-Values	p
a) Discussion	143	4.17	.71	59	4.03	.79	107	4.12	.74	.70	.50
b) Text and lecture	136	3.77	1.00	55	3.53	.90	107	3.77	.98	1.38	.25
c) Lecture	135	3.70	.95	57	3.74	.86	96	3.67	1.00	.10	.90
d) Teacher demonstrations	132	3.16	.84	52	3.25	.71	100	3.11	.86	.49	.62
e) Small group discussions	141	2.96	.92	59	3.11	.98	102	2.98	.93	.48	.62
f) Values clarification activities	129	2.81	1.02	51	3.06	.97	97	2.88	1.06	1.10	.33
g) Student lab experiments	132	2.59	.99	52	2.63	.91	97	2.75	1.05	.75	.48
h) Guest speakers	132	2.37	.83	55	2.40	.87	97	2.46	.82	.35	.71

for more audio-visual materials and aids to help them do a more adequate job of teaching psychology, 117 of the Social Studies teachers (79.1%), 52 of the Guidance Counselors (80.0%), and 92 of the "Other" teachers (82.1%) indicated the affirmative option. When these same teachers were asked to indicate whether they would actually use such materials and resources were they to be made available to them, 145 Social Studies teachers (97.3%), 63 Guidance Counselors (98.4%), and 109 "Other" teachers (97.3%) reported they would use these materials. Hence, while 4 of 5 teachers felt a real need for audio-visual aids, nearly 100% of the teachers in all three groups reported they would actually use such materials were they made available.

The availability of resources is tied to funding. Was there money available to purchase psychology-related instructional resources? Eighty-eight Social Studies teachers (61.1%), 32 Guidance Counselors (51.6%), and 55 "Other" certified teachers (50.0%) responded by saying their schools had the funds by which they could purchase teaching aids for their courses.

Types of instructional aids desired

In an attempt to identify the exact types of resource aids these teachers wanted to see made available to them, the questionnaire listed 17 different types of resource aids for teachers to indicate their preferences. Teachers were told to mark any and all of those instructional aids they desired. Table 9 reports their responses to this item.

The overwhelming first choice of the Social Studies teachers (106 responses or 71.1%) and Guidance Counselors (49 responses or 75.4%)

Table 9

A Summary of Frequencies, Percentages, Adjusted Chi-Square Values, and Ranks Assigned the Types of Instructional Aids These Teachers and Their Students Wanted to See Made Available to Them for Their Use

Instructional Aids	Social Studies F	%	R	Guidance Counselors F	%	R	Others F	%	R	Ch-Square	p	Students %	R
a) Films, movies	106	71.1	1	49	75.4	1	74	64.9	2.5	2.38	.30	82.1	1
b) Materials for classroom experiments	94	63.1	2	36	55.5	3	74	64.9	2.5	1.69	.43	52.7	4
c) List of local guest speakers	82	55.0	3	31	47.7	4	73	64.0	4	4.82	.09	73.5	2
d) Sample psychological tests	81	54.4	4	29	44.6	5.5	64	56.1	5	2.40	.30	52.2	5
e) Simulation games	80	53.7	5	44	67.7	2	80	70.2	1	8.51	.01	56.6	3
f) Student workbooks	55	36.9	6	22	33.8	7.5	39	34.2	9	.29	.87	18.9	11
g) Filmstrips	53	35.6	7	21	32.3	9	45	39.5	6.5	.98	.61	49.8	6
h) Newsletters for teachers	50	33.6	8	12	18.5	13.5	45	39.5	6.5	8.42	.01	----	--
i) Overhead transparencies	48	32.2	9	22	33.8	7.5	35	30.7	10	.19	.91	15.7	13
j) Values clarification activities	42	28.2	10	29	44.6	5.5	41	36.0	8	5.69	.06	15.9	12
k) Different kind of a text-book	39	26.2	11	17	26.2	10	32	28.1	13	.14	.93	19.9	10
l) Audio-cassette tapes	36	24.2	12	14	21.5	11.5	34	29.8	11.5	1.79	.41	30.3	8
m) Reference service for students	35	23.5	13	14	21.5	11.5	30	26.3	14	.57	.75	30.4	7
n) Posters of famous psychol-ogists	34	22.8	14	11	16.9	15	28	24.6	15	1.45	.49	5.9	15
o) Career-related pamphlets	32	21.5	15	12	18.5	13.5	34	29.8	11.5	3.75	.15	29.4	9
p) Materials for slow learners	26	17.4	16.5	7	10.8	16.5	25	21.9	16	3.55	.17	11.8	14
q) Curriculum guide for teachers	26	17.4	16.5	7	10.8	16.5	18	15.8	17	1.55	.46	----	--48

was the Films, movies option while most of the "Other" certified teachers desired Simulation games as their highest preferred choice (80 responses or 70.2%). Overall, these three groups of teachers tended to rank these options in similar orders of preferences with a few exceptions. The largest difference in ranks found the Guidance Counselors minimizing the need for a Newsletter for teachers (13.5 ranking) while the "Other" certified teachers saw this as being much more important to them (a 6.5 ranking). An examination of the Chi-square values revealed that the percentage of teachers in these three groups who preferred Simulation games and a Newsletter for teachers differed significantly from one another ($p < .05$). A larger percentage of Guidance Counselors (44.6%) preferred Values clarification activities for use in their psychology courses than did Social Studies (28.2%) or the "Other" teachers (36.0%).

When the rankings were formally compared using the Spearman formula, the resulting coefficients were .85 for the Social Studies-Counselor rankings, .86 for the Social Studies-"Other" teacher rankings, and .88 for the Guidance Counselor-"Other" teacher rankings. All these coefficients were found to be significant at the .01 level. Thus, while the Chi-square analysis revealed major differences among these three groups on a few individual items, the correlation coefficients indicated a significant degree of overall agreement for these instructional aids.

SUMMARY

In reviewing the extensive data reported above, it was found that the 149 Social Studies, 65 Guidance Counselors, and 114 "Other" - certified psychology teachers tended to teach psychology:

a) in similar public/private school settings,

b) almost exclusively as an elective rather than required course offering,

c) in courses with heavy female enrollments,

d) in courses with heavy white student enrollments regardless of the ratio of white-to-blacks in the entire school population,

e) in courses with heavy senior-junior enrollments,

f) with the same level of perceived adequacy about their preparation to teach psychology to high school students,

g) from a similar distribution of behavioristic-humanistic-eclectic perspectives,

h) with the identical objectives posited for their respective courses,

j) with the same emphasis on content and topics,

k) with the same ideas about what these courses should include as far as topic and content are involved,

l) using identical methodologies with about the same frequency of use for each method,

m) with the desire to have the identical instructional aids made available to them for use in their respective classes.

The above represents areas where these teachers were nearly or exactly identical to one another. Where the teachers data were contrasted

to student responses regarding the reasons why they enrolled in these courses, topics they wanted taught, etc., the teachers were consistently closer to one another than they were to the student responses. None of these three groups of teachers came closer to meeting the expectations or needs of the students than the others.

Besides the above similarities among these three groups of teachers, several significant differences were found in respect to themselves and their courses. Included in these differences were:

a) Guidance-Counselors were more likely to teach courses in smaller schools with less than 500 students enrolled while Social Studies and "Other" certified teachers taught in small enrollment and dominated large enrollment schools,

b) Guidance Counselors were more likely to teach courses in exclusively rural school settings while Social Studies and "Other" teachers were distributed across rural, urban, and suburban school settings,

c) Social Studies and "Other" teachers were more likely to teach courses in schools offering more than one section of psychology each day,

d) Social Studies and "Other" teachers averaged teaching a significantly larger number of sections of psychology each day over their Guidance Counselor counterparts,

e) Social Studies and "Other" teachers nearly doubled the Guidance Counselors in terms of the average number of students they taught each year,

f) Psychology courses taught by Social Studies and "Other" teachers were perceived as being significantly more popular among students than were those taught by Guidance Counselors,

g) Guidance Counselors and "Other" teachers possessed significantly more college credit hours in psychology and educational psychology than did the Social Studies teachers.

Importantly, while Social Studies certified teachers made up 45.0% of the Illinois psychology teachers and these teachers taught 49.8% of the sections offered and 50.6% of the students enrolled in these courses, as a group they had received significantly less hours of college level psychology course training than had their counterparts. This difference in training was reflected in the lower percentage of Social Studies teachers who felt adequately prepared to teach the course (85.2%) than did the "Other" teachers (91.2%) and Guidance Counselors (90.8%).

The emergence of psychology as the fastest growing social studies course offering has helped to maintain the student enrollment in the social studies. At the same time, these data and results from other states (APA, 1976; Snellgrove, 1973; Stahl, 1974) clearly indicate that social studies-certified teachers are not the only ones who teach the course. Furthermore, merely because it is included in the social studies departments in most schools does not imply that it is perceived nor taught from the perspective of the social studies/sciences. The placing of psychology as a social studies discipline within the pre-

college curriculum indicates only that it fits there better than it fits in English, Science, or Math Departments.

Meanwhile, there is much to be done relative to improving the teaching of psychology to high school students. In 1973, Stahl and Casteel argued that important decisions needed to be made in respect to teaching psychology on the precollege level. These decisions emphasized three important areas or concerns:

1. Psychology as an instructional discipline for high school students requires definition. This definition should be functional (purposeful), structural (organizational, including scope and sequence), and pedagogical (instructional procedures).
2. Once psychology has been defined, a decision should be made relative to clientele. Who will/should take the course? Preparing course objectives, selection, content and instructional materials, etc., requires different orientation for students on different grade levels. Without decisions for "1" and "2", psychology appears to be a course designed around whatever textbook is used, rather than one which exists on its own merits and disciplinary integrity.

3. With psychology defined, then descriptions as to qualifications and training of teachers to teach the course can be made more specific.

In the years since these suggestions, little has been done to achieve closure on these as well as numerous other areas where decisions regarding precollege psychology ought to be made. While the social studies profession continues to pride itself for increased or maintained enrollments in the elective "non-social studies" psychology course, there is a great deal to be done to convert energies from mere quantitative data to qualitative improvements in the psychology that is taught to one-half million students each year.

Notes

1. Appreciation is extended to Carl Sandberg High School, Orland Park, Illinois and the School of Education, Mississippi University for Women, Columbus, Mississippi for helping provide some of the funding for conducting this study.
2. Blanche Sherman Hunt, Pamela Hronek, and Gary Murphy are to be recognized for their efforts in preparing the tables and figures included herein.
3. The National Council for the Social Studies Special Interest Group: Psychology and the American Psychological Associations Clearinghouse on Pre-College Psychology are two groups which have sought to promote and improve the teaching of psychology on the high school level.
4. Despite its phenomenal growth, a recent informed survey of the literature revealed far fewer articles have been published on pre-college psychology in professional journals since 1975 than during the 1950-1960, 1961-1970, and 1971-75 periods.
5. All percentages throughout the rest of this article are based upon the total number in each group who actually responded to the particular item being considered.

A P P E N D I X A

ADDITIONAL TABLES AND INFORMATION, INCLUDING TEACHER AND STUDENT QUESTIONNAIRES, RELEVANT TO THIS SURVEY.

Code No._____

QUESTIONNAIRE ON THE TEACHING OF PSYCHOLOGY IN THE SECONDARY SCHOOL

(Please type of print)

Name:_____ Position:_____

School:_____

School Address:_____ City:_____State:_____

Zip:_____

1. Circle the grades which included in your school: __ 7 8 9 10 11 12

2. Indicate the appropriate classification of your school:

___ a) Public ___ b) Private (non-religious) ____ c) Private (religious)
___ d) Parochial (Catholic) ___ e) Other (specify)_____

3. Indicate the size of your school's enrollment (grades 9 and above):

___ less than 150 ___ 150 to 350 ___ 351 to 500
___ 501 to 1,000 ___ 1,001 to 1,500 ___ 1,501 to 3,000
___ more than 3,000

4. What is the closest approximate ratio of whites to blacks in your school?

___ a) 95%white/5%black ___ b) 80%/20% ___ c) 65%/35%
___ d) 50%/50% ___ e) 35%/65% ___ f) 20%/80%

5. Indicate the most appropriate description of the area which your school serves:

___ a) Urban ___ b) Rural ___ c) Suburban ___ d) Inner City

6. If psychological content is included as a portion of any course in your school's curriculum, indicate the course(s) which includes it:

___ a) Contemporary Issues ___ e) Child Development
___ b) Senior Social Studies ___ f) Sociology
___ c) Problems of Democracy ___ g) Home Economics
___ d) Family Life/Marriage & the Family ___ h) Other (specify)_____

7. Is Psychology taught as a separate course for credit in your school? ___ a) Yes ___ b) No

8. Do you teach the separate course(s) in Psychology in your school? ___ a) Yes ___ b) No

9. Is there an Advanced Psychology or Psychology II course offered at your school? ___a) Yes ___b) No

10. Is the Psychology course an elective or required course?

___ a) Elective ___ b) Required

11. How many sections of Psychology do you teach each day? _____ sections

12. Does your course tend to be "Behavioristic" or "Humanistic" in its approach?

___ a) Behavioristic ___ b) Humanistic

13. Indicate the length of time the Psychology course is offered as a separate course of study at your school:

___ a) No Psychology course is taught ___ b) six weeks ___ c) nine weeks
___ d) one semester/½ year ___ e) a full year course ___ f) Other (Specify)
_____

14. How many students took Psychology as a course of study last year at your school? _____ students

15. How many students took or are currently enrolled in Psychology courses this year at your school? _____ students.

16. Please indicate the sex of the majority of students in your Psychology classes:

___ a) Female ___ b) Male

17. What is the closest approximate ratio of whites to blacks in your Psychology classes?

___ a) 95%white/5%black ___ b) 80%/20% ___ c) 65%/35%
___ d) 50%/50% ___ e) 35%/65% ___ f) 20%/80%

18. What grade level(s) of students are eligible to take the Psychology course?

___ a) 9th grade ___ b) 10th grade ___ c) 11th grade ___ d) 12th grade
___ e) 10-12th grades ___ f) 11-12th grades ___ g) Other(specify)_____

19. Topics and content generally taught in Psychology courses in the secondary school are listed below. Please indicate those topics <u>you</u> <u>include</u> in your Psychology course:

_____ a) Intelligence
_____ b) Personality Theory
_____ c) History of Psychology
_____ d) Motivation
_____ e) Emotions
_____ f) Mental Illness
_____ g) Mental Health
_____ h) Mental Retardation
_____ i) Statistics
_____ j) Learning Theories
_____ k) The Human Body (Physiology)
_____ l) Heredity and Genetics
_____ m) Human Growth and Development
_____ n) The Adolescent
_____ o) Sensations and Perception
_____ p) Social Behavior
_____ q) Child Care
_____ r) Marriage and the Family
_____ s) Drugs, Alcoholism, etc.
_____ t) Love
_____ u) Parapsychology, ESP
_____ v) Abnormal Behavior

20. Do you use a state-adopted textbook in teaching this course? ___ a) Yes ___ b) No

21. Below are listed several textbooks which are most often used in this course. Please indicate the text(s) you use:

_____ a) <u>Psychology: Its Principles and Applications</u> (Engle and Snellgrove)
_____ b) <u>Psychology: Understanding Ourselves and Others</u> (Tallent and Spungin)
_____ c) <u>Understanding Psychology</u> (CRM/Random House)
_____ d) <u>Living Psychology</u> (Hershey and Lugo)
_____ e) <u>Psychology</u> (McKeachie and Doyle)
_____ f) <u>Introduction to the Behavioral Sciences</u> (Sandberg and Fenton)
_____ g) <u>Psychology Today</u>-(Text, not magazine) (CRM)
_____ h) <u>Psychology For You</u> (Sol Gordon)
_____ i) <u>Psychology For Living</u> (Sorenson and Malm)
_____ j) Other (Specify) _____

22. To what extent do you use the textbook in teaching your course?

_____ a) it is never used _____ b) it is used occasionally
_____ c) it is used often _____ d) it is used a great deal of the time
_____ e) it is used for lack of any other relevant reading material(s)

23. What suggestions, if any, would you make to authors and publishers of psychology textbooks and supplementary reading materials in order for their books to better meet <u>your</u> needs?

_____

_____

24. Below are listed a number of Objectives for teaching psychology on the secondary school level. Check those Objectives which most accurately reflect the objectives <u>you</u> <u>set</u> <u>for your</u> Psychology course(s):

_____ a) to help students in their vocational planning.
_____ b) to help develop an appreciation for Psychology as a field of scientific knowledge and inquiry.
_____ c) to prepare students for college psychology courses.

____ d) to eliminate many of the misconceptions students have about psychology and psychologists.
____ e) to assist students in preparing for family life and family living.
____ f) to assist students in developing a basic philosophy of life.
____ g) to help students understand and deal with their personal problems.
____ h) to assist students in understanding the vocabulary associated with psychology.
____ i) to assist students in adjusting to life and solving life's problems.
____ j) to help students better understand and accept themselves as individuals.
____ k) to apply psychological knowledge to understand contemporary social problems and events.
____ l) to help students cope with problems associated with emerging adolescence.
____ m) other (specify)_____
____ n) other (specify)_____

25. Without looking back to the previous page, please indicate those topics that you believe should be included in high school psychology courses:

____ a) Intelligence
____ b) Personality Theory
____ c) History of Psychology
____ d) Motivation
____ e) Emotions
____ f) Mental Illness
____ g) Mental Health
____ h) Mental Retardation
____ i) Statistics
____ j) Learning Theory
____ k) The Human Body (Physiology)
____ l) Heredity and Genetics
____ m) Human Growth and Development
____ n) The Adolescent
____ o) Sensation and Perception
____ p) Social Behavior
____ q) Child Care
____ r) Marriage and the Family
____ s) Drugs, Alcoholism, etc.
____ t) Love
____ u) Parapsychology, ESP
____ v) Abnormal Behavior
____ w) Other_____
____ x) Other_____

26. Please indicate the highest level of your college course training:

___ a) Bachelors (degree held)
___ b) Post-Bachelors
___ c) Masters (degree held)
___ d) Post-Masters
___ e) Specialist (degree held)
___ f) Doctorate (degree held)

27. Please indicate the one area of certification you are currently using in your present school position:

____ a) Social Studies/Science
____ b) Science
____ c) Psychology
____ d) Administration
____ e) Home Economics
____ f) Guidance and/or Counseling
____ g) Other (Specify) _____

28. How many hours of college course credit have you had in Psycholgy and Educational Psychology course work? (Indicate "0" if no hours): _____ semester _____quarter hours

29. Do you feel adequately prepared to teach psychology on the secondary school level in light of your college course background in this subject area? ___ a) Yes ___ b) No

30. Do you feel a need for more materials and instructional resources to help you do a more adequate job of teaching psychology? ___ a) Yes ___ b) No

31. Would you consider using more materials, audio-visual aids, and instructional resources if they were made available for your use? ___ a) Yes ___ b) No

32. If such instructional materials were available for purchase, would you or your school have funds available to purchase these teaching aids? ___ a) Yes ___ b) No

33. Is Psychology as a course of study considered a popular course for students to take at your school? ___ a) Yes ___ b) No

34. Below are listed a number of different methods available for teaching psychology. In addition, there is a scale to indicate the frequency in which you might use each of these methods. Please indicate which methods you use and the frequency of their use.

Method	Very Freq.	Frequently	Sometimes	Rarely	Never
a) Text-and-lecture	____	____	____	____	____
b) Lecture	____	____	____	____	____
c) Teacher demonstrations	____	____	____	____	____
d) Discussion (other than review)	____	____	____	____	____
e) Student lab experiments	____	____	____	____	____
f) Small group discussions	____	____	____	____	____
g) Guest speakers	____	____	____	____	____
h) Values clarification activities	____	____	____	____	____
i) Other (Specify)_____	____	____	____	____	____

35. What type(s) of additional materials and instructional resources related to the teaching of psychology would you want to see made available for your use? (Indicate as many of these you believe you really would use or would really like to see available for your use):

_____ a) a different kind of textbook
_____ b) overhead transparencies
_____ c) audio-cassette tapes
_____ d) materials for slow learners/readers
_____ e) films/movies
_____ f) a reference service for students
_____ g) career-related pamphlets
_____ h) a newsletter for teachers
_____ i) list of local guest speakers who were knowledgeable in psychology
_____ j) filmstrips
_____ k) simulation games
_____ l) posters of famous psychologists
_____ m) values clarification activities
_____ n) student workbooks
_____ o) materials for classroom experiments
_____ p) a curriculum guide
_____ q) sample psychological tests
_____ r) Other (specify) _____

36. Are you a member of the National Council for the Social Studies?
_____ Yes _____ No _____ No, please sent details

37. Are you a member of the American Psychological Association's High School Affiliate Membership Program?
____a Yes ____b No, and not interested ____c No, please send details

38. Do you receive a copy of the APA newsletter concerning precollege psychology formerly entitled, Periodically, but now entitled, High School Psychology Teacher?
_____ a) Yes _____ b) No _____ c) No, but I would like to receive it!

39. Are you a member of your state's Council for the Social Studies?
_____ a) Yes ____ b) No

40. If you had the opportunity, would you we willing to have your students surveyed relevant to the reasons why they enrolled in your course and what they would like to see offered in the course? (You would receive the results of their survey responses) ____ a) Yes ____ b) No

41. Would you like to see the results of this survey? _____ a) Yes _____ b) No

42. Additional comments: _____

_____

_____

Code No._____

STUDENT QUESTIONNAIRE ON HIGH SCHOOL PSYCHOLOGY

For the items below, please mark the most appropriate answer:

1. Your age: ____a) 14 ____b) 15 ____c) 16 ____d) 17 ____e) 18 ____f) 1

2. Your sex: ____a) Female ____b) Male

3. Your race: ____a) Black ____b) White ____c) Other(specify)_____

4. Your grade level: ____a) 9th ____b) 10th ____c) 11th ____d) 12th

5. Grade you received in Psychology for the last grading term: ____a) A ____b) B ____c) C ____d) D ____e) F ____f) Did not receive a grade

6. Below are a number of reasons or objectives for taking a course in Psychology in high school. Check those reasons which most accurately fit those you had for taking this Psychology course.

___ a) to help me in my vocational planning.
___ b) to help me develop an appreciation for Psychology as a field of scientific knowledge and inquiry.
___ c) to prepare me for college Psychology courses.
___ d) to eliminate many of the misconceptions I have about Psychology and psychologists.
___ e) to assist me in preparing for my future family life.
___ f) to assist me in developing a basic philosophy of life.
___ g) to help me understand and deal with my personal problems.
___ h) to assist me in understanding the vocabulary associated with Psychology.
___ i) to assist me in adjusting to life and in solving life's problems.
___ j) to help me better understand and accept myself as an individual.
___ k) to apply psychological knowledge to understand contemporary social problems and events.
___ l) to help me cope with problems associated with emerging adolescence.
___ m) other (specify)_____

_____

_____

7. Below are a number of topics and subjects that could be included in high school Psychology courses. Please mark those topics that you believe should be included in the high school Psychology course you are taking:

___ a) Intelligence
___ b) Personality Theories
___ c) History of Psychology
___ d) Motivation
___ e) Emotions
___ f) Mental Illness
___ g) Mental Health
___ h) Mental Retardation
___ i) Statistics
___ j) Learning and Thinking
___ k) The Human Body
___ l) Heredity and Genetics
___ m) Growth and Development
___ n) The Adolescent
___ o) Sensations and Perception
___ p) Social Behavior
___ q) Child Care
___ r) Marriage and the Family
___ s) Drugs, Alcoholism, etc.
___ t) Love
___ u) Parapsychology, Esp
___ v) Abnormal Behavior
___ w) Other _____
___ x) Other _____

8. Below are listed a number of different materials and teaching aids which your teacher might use to teach the Psychology course you are now taking. Mark the types of materials and aids you would want to see your teacher using to teach you psychology:

___ a) A different kind of textbook
___ b) Overhead transparencies
___ c) Audio-cassette tapes
___ d) Materials for slow learners or slow readers
___ e) Movies/Films
___ f) A weekly newspaper related to psychology
___ g) Pamphlets related to careers in psychology
___ h) A reference service for students working on psychology assignments and papers
___ i) Filmstrips
___ j) Simulation games
___ k) Posters of famous psychologists
___ l) Values clarification activities
___ m) Student workbooks
___ n) Materials for classroom experiments
___ o) Guest speakers
___ p) Sample psychological tests
___ q) Other (specify)_____

_____

_____

9. Below are listed a number of different methods available for teaching Psychology. There is also a scale to indicate how often these methods could be used. Mark how often you would like to see your teacher use each of the following methods. Leave blank those methods you do not know anything about.

METHOD	Very Freq.	Frequently	Sometimes	Rarely	Never
a) Textbook-and-lecture	____	____	____	____	____
b) Lecture	____	____	____	____	____
c) Teacher demonstrations	____	____	____	____	____
d) Discussion (other than review)	____	____	____	____	____
e) Student lab experiments	____	____	____	____	____
f) Small group discussions	____	____	____	____	____
g) Guest speakers	____	____	____	____	____
h) Values clarification activities	____	____	____	____	____
i) Field trips	____	____	____	____	____
j) Other _____	____	____	____	____	____

10. Do you have anything else you would like to report about you and your Psychology course? Please use the space below to write any additional comments:

TABLE 2

Descriptive Data on Psychology Students in Three States

Student Characteristic	1,215 Florida Students 1974-75	724 Mississippi Students 1975-76	754 Mississippi Students 1977-78	1137 Illinois Students 1977-78
Females	58.6	63.5	57.8	60.3
Males	41.4	36.5	40.2	39.7
Whites	88.1	78.8	90.8	84.5
Blacks	9.1	21.0	4.9	12.6
Other	2.8	.2	4.3	2.9
Freshman	.6	2.8	.1	.1
Sophomores	2.3	3.8	3.1	4.1
Juniors	31.1	21.5	27.6	29.0
Seniors	66.0	71.9	69.2	66.9
14 years old	.3	2.1	.1	.2
15 years old	.9	3.1	.9	1.3
16 years old	16.9	15.8	16.0	17.1
17 years old	45.8	49.3	46.2	44.6
18 years old	36.1	28.2	35.9	33.7
19 years old	.0	1.7	1.9	3.1
"A" Grade	26.3	33.6	25.3	26.7
"B" Grade	37.4	37.4	31.9	31.7
"C" Grade	23.4	17.7	26.5	25.3
"D" Grade	8.7	8.0	11.7	10.8
"E/F" Grade	4.1	3.9	3.8	4.5
N.A.	.0	.0	.7	1.0

A Crosstabulation of Descriptive Data Pertaining to the 754 Mississippi Secondary School Students Who Responded to the 1977-78 Psychology Survey: Percentage Data*

	SEX		RACE			GRADE LEVEL				AGE LEVEL						GRADES EARNED					
	Males	Females	Whites	Blacks	Others	Freshmen	Sophomores	Juniors	Seniors	14 Year-Olds	15 Year-Olds	16 Year-Olds	17 Year-Olds	18 Year-Olds	19 Year-Olds	"A" Grades	"B" Grades	"C" Grades	"D" Grades	"E/F" Grades	Did not receive grade
Males	40.2	-	39.0	2.8	1.6	.0	.4	10.8	28.8	.0	.1	5.3	18.5	15.0	1.2	7.2	10.6	11.3	7.0	3.3	.3
Females		57.0	55.0	2.1	2.7	.1	2.7	16.0	40.3	.1	.8	9.7	27.7	20.9	.7	10.1	21.2	15.3	4.0	.0	.4
Whites			90.8	-	-	.0	3.1	25.9	61.9	.0	.9	14.4	42.2	31.0	1.5	23.1	28.1	24.7	10.8	3.5	.7
Blacks				4.9	-	.1	0	1.1	3.7	.1	.0	.4	2.1	2.1	.1	1.3	1.6	.9	.8	.1	0
Others					4.3	0	0	.7	3.5	.0	0	.3	1.6	2.1	.3	1.1	2.0	.9	.1	.1	0
Freshmen						.1	-	-	-	.1	0	0	0	0	0	0	.1	0	0	0	0
Sophomores							3.1	-	-	0	.9	2.0	.1	0	0	.4	1.2	1.2	0	.1	0
Juniors								27.6	-	0	0	12.7	13.2	1.7	0	6.5	7.3	7.4	4.9	1.6	.3
Seniors									69.2	0	0	.4	32.8	34.0	1.9	10.5	23.3	17.9	6.9	2.0	.4
14 Year-Olds										.1	-	-	-	-	-	0	.1	0	0	0	0
15 Year-Olds											.9	-	-	-	-	.1	.3	.3	0	.1	0
16 Year-Olds												16.0	-	-	-	3.0	4.6	4.2	1.6	.8	.1
17 Year-Olds													46.2	-	-	12.3	13.2	12.1	6.3	1.7	.4
18 Year-Olds														35.9	-	8.9	13.4	9.3	3.5	.9	.1
19 Year-Olds															1.9	.4	.3	.7	.4	.1	0
"A" Grades																25.3	-	-	-	-	-
"B" Grades																	31.9	-	-	-	-
"C" Grades																		26.5	-	-	-
"D" Grades																			11.7	-	-
"E/F" Grades																				3.8	-
Did not receive grade																					.7

Differences in totals due to students who did not respond to one of these 5 categories of items.

A Crosstabulation of Descriptive Data Pertaining to the 754 Mississippi Secondary School Students Who Responded to the (1977-1978) Psychology Survey: Frequency Data*

	SEX		RACE			GRADE LEVEL				AGE LEVEL						CRADES EARNED					
	Males	Females	Whites	Blacks	Others	Freshmen	Sophomores	Juniors	Seniors	14 Year-Olds	15 Year-Olds	16 Year-Olds	17 Year-Olds	18 Year-Olds	19 Year-Olds	"A" Grades	"B" Grades	"C" Grades	"D" Grades	"E/F" Grades	Did not receive grade
Male	302	-	269	21	12	0	3	81	216	0	1	40	139	113	9	64	79	84	50	22	2
Female		450	413	16	20	1	20	206	302	1	6	73	200	157	6	126	160	114	30	6	3
Whites			682	-	-	0	23	194	463	0	7	100	317	239	11	172	209	104	00	26	6
Blacks				37	-	1	0	0	20	1	0	3	16	16	1	10	12	7	6	1	0
Others					32	0	0	5	26	0	0	2	12	16	2	8	15	7	1	1	0
Freshmen						1	-	-	-	1	0	0	0	0	0	0	1	0	0	0	0
Sophomores							23	-	-	0	7	15	1	0	0	3	9	9	0	1	0
Juniors								207	-	0	0	95	99	13	0	48	64	55	36	12	2
Seniors									518	0	0	3	246	255	14	137	173	133	51	15	3
14 Year-Olds										1	-	-	-	-	-	0	1	0	0	0	0
15 Year-Olds											7	-	-	-	-	1	2	2	0	1	0
16 Year-Olds												113	-	-	-	28	34	31	12	6	1
17 Year-Olds													346	-	-	92	98	90	47	13	3
18 Year-Olds														268	-	66	100	69	26	7	1
19 Year-Olds															14	3	2	5	3	1	0
"A" Grades																190	-	-	-	-	-
"B" Grades																	237	-	-	-	-
"C" Grades																		197	-	-	-
"D" Grades																			88	-	-
"E/F" Grades																				28	-
Did not receive grade																					5

*Differences in totals due to students who did not respond to one of these 5 categories of items.

A Crosstabulation of Descriptive Data Pertaining to the 1137 Illinois Secondary School Students Who Responded to the 1977-78 Psychology Survey; Percentage Data*

	SEX		RACE			GRADE LEVEL				AGE LEVEL						GRADES EARNED					
	Males	Females	Whites	Blacks	Others	Freshmen	Sophomores	Juniors	Seniors	14 Year-Olds	15 Year-Olds	16 Year-Olds	17 Year-Olds	18 Year-Olds	19 Year-Olds	"A" Grades	"B" Grades	"C" Grades	"D" Grades	"E/F" Grades	Did not receive grade
Males	39.7	-	33.6	5.1	2.9	0	1.1	11.2	27.4	0	.3	6.2	17.5	14.4	1.4	7.1	11.7	11.3	6.3	2.8	.4
Females		60.3	50.9	7.4	1.9	.1	3.0	17.8	39.5	.2	1.1	10.8	27.1	19.3	1.8	19.5	20.1	14.1	4.5	1.7	.5
Whites			84.5	-	-	0	2.7	25.8	56.2	0	.9	14.7	39.6	28.1	1.3	23.5	26.4	22.0	8.8	3.4	.6
Blacks				12.6	-	.1	1.4	2.7	8.3	.2	.5	2.1	3.6	4.4	1.7	2.4	3.9	2.9	1.9	.9	.4
Others					2.9	0	0	.4	2.4	0	0	.2	1.2	1.4	.2	.8	1.3	.6	.1	.1	0
Freshmen						.1	-	-	-	.1	0	0	0	0	0	0	.1	0	0	0	0
Sophomores							4.1	-	-	.1	1.3	2.5	.1	0	.1	.9	1.3	1.1	.5	.2	.1
Juniors								29.0	-	0	0	13.6	13.5	1.8	.1	7.7	7.7	7.3	3.9	2.2	.4
Seniors									66.9	0	0	1.1	31.0	31.9	2.9	18.0	22.8	17.0	6.3	2.1	.5
14 Year-Olds										.2	-	-	-	-	-	0	.2	0	0	0	0
15 Year-Olds											1.3	-	-	-	-	.4	.4	.3	.2	.2	0
16 Year-Olds												17.1	-	-	-	5.3	4.5	4.1	1.9	1.0	.4
17 Year-Olds													44.6	-	-	12.7	13.2	11.3	5.3	1.8	.3
18 Year-Olds														33.7	-	8.0	12.5	8.6	2.9	1.2	.4
19 Year-Olds															3.1	.4	1.0	1.0	.5	.3	0
"A" Grades																20.7	-	-	-	-	-
"B" Grades																	31.7	-	-	-	-
"C" Grades																		25.3	-	-	-
"D" Grades																			10.8	-	-
"E/F" Grades																				4.5	-
Did not receive grade																					1.0

Differences in totals due to students who did not respond to one of these 5 categories of items.

A Crosstabulation of Descriptive Data Pertaining to the 1137 Illinois Secondary School Students Who Responded to the 1977-78 Psychology Survey; Frequency Data*

	SEX		RACE			GRADE LEVEL				AGE LEVEL						GRADES EARNED					
	Males	Females	Whites	Blacks	Others	Freshmen	Sophomores	Juniors	Seniors	14 Year-Olds	15 Year-Olds	16 Year-Olds	17 Year-Olds	18 Year-Olds	19 Year-Olds	"A" Grades	"B" Grades	"C" Grades	"D" Grades	"E/F" Grades	Did not receive grade
Males	450	-	380	58	12	0	12	126	308	0	3	70	198	163	16	80	131	127	71	31	5
Females		684	575	84	21	1	34	200	445	2	13	123	307	219	20	219	225	158	50	19	6
Whites			955	-	-	0	30	289	631	0	10	166	447	317	15	263	295	246	98	38	7
Blacks				142	-	1	16	30	93	2	6	24	41	50	19	27	44	32	21	10	4
Others					33	0	0	5	27	0	0	2	13	16	2	9	15	7	1	1	0
Freshmen						1	-	-	-	1	0	0	0	0	0	0	1	0	0	0	0
Sophomores							46	-	-	1	15	28	1	0	1	10	14	12	6	2	1
Juniors								326	-	0	0	153	152	20	1	86	86	81	44	24	4
Seniors									753	0	0	12	349	359	33	201	254	189	70	23	6
14 Year-Olds										2	-	-	-	-	-	0	2	0	0	0	0
15 Year-Olds											16	-	-	-	-	4	4	3	2	2	0
16 Year-Olds												193	-	-	-	59	51	46	21	11	4
17 Year-Olds													505	-	-	142	148	127	59	20	3
18 Year-Olds														383	-	90	140	97	33	14	4
19 Year-Olds															36	5	11	11	6	3	0
"A" Grades																300	-	-	-	-	-
"B" Grades																	356	-	-	-	-
"C" Grades																		284	-	-	-
"D" Grades																			121	-	-
"E/F" Grades																				50	-
Did not receive grade																					11

*Differences in totals due to students who did not respond to one of these 5 categories of items.

List of Additional Reasons Why The 1,137 Illinois Students

Enrolled in the Psychology Course

(1977-1978)

	Reasons for Take Course	Number of Students
1.	I thought it would be interesting	29
2.	I needed a credit	22
3.	To understand the actions of others	18
4.	It is required	18
5.	To understand more about psychology	15
6.	I needed the course to graduate	13
7.	The class time fit my schedule	10
8.	To see what psychology was all about	10
9.	To help me deal with others	8
10.	I thought it would be easy	5
11.	This was the best of all the electives to choose from	4
12.	I like psychology	4
13.	I want to be with my friends who were taking this class	3
14.	To understand children and how to deal with them	3
15.	I liked the teacher	3
16.	I was placed in here by my counselor	3
17.	It was recommended to me by my counselor	3
18.	Others told me it was a good class	2
19.	To broaden my education	2
20.	To understand more about the human mind	1
21.	I didn't know what else to take	1
22.	To "use" psychology on others	1
23.	To add some variety to the kinds of classes I've been taking	1

List of Additional Topics the 1,137 Illinois Students

Thought Should be Included in Their Psychology Courses

(1977-1978)

	Topics	Number of Students
1.	Sex	5
2.	Hypnotism	3
3.	The brain	3
4.	Dream analysis	2
5.	Transactional analysis	2
6.	Parents	1
7.	Schizophrenia	1
8.	Relaxation Techniques	1
9.	Mind control	1
10.	Mental Institutions	1
11.	Oral contraceptives	1
12.	Behavior modification	1
13.	The criminal mind	1
14.	Freud's theories	1
15.	Psychology research and experiments	1
16.	Death	1
17.	Religion	1
18.	Juvenile Behavior	1
19.	Practical psychology - day-to-day application of	1
20.	ESP, Telepathy	1

List of Additional Instructional Aids and Methods the 1,137 Illinois Students Wanted to See Used to Teach Them Psychology (1977-1978)

Instructional Aids and Materials	Number of Students
1. A mental patient (for observation)	2
2. Biofeedback Machine	1
3. Sample tests	1
4. Home-made movies and films	1
5 Optical illusions	1
6. Study Sheets (for upcoming tests)	1
7. Case Studies	1
8. Outline of class topics and activities	1
9. Oral reports	1
10. Individual projects	1
11. Reaction paper	1
12. No textbook	1

Instructional Methods/Activities	
1. Observations	3
2. Party	1
3. Experimenting on others (using principles acquired in class)	1
4. Free days	1

List of the Summary of "Additional Comments" the 1,137 Illinois Students Made in the Free Response Segment of the Questionnaire (1977-1978)

	Additional Comments	Number of Students
1.	I thought it was interesting	51
2.	I enjoyed this class very much	29
3.	I had a very good teacher	25
4.	I gained a lot of personal insight from this class	19
5.	We need more diversity in methods	16
6.	I learned a lot	14
7.	This class has helped me understand others better	14
8.	Everyone should take the class	12
9.	This class was very beneficial	12
10.	This course was very educational	11
11.	I like psychology	9
12.	The textbook is too difficult	8
13.	This was the most interesting I've every taken	7
14.	This was a difficult class	6
15.	More discussion is needed	6
16.	When application of learning was demonstrated I gained more insight	6
17.	This should be a year-long class	6
18.	Getting away from lectures was helpful	5
19.	I think psychology is an important class	4
20.	We need a different textbook	4
21.	More out-of-class activities are needed	4
22.	This class has fostered an interest in psychology as a career	4
23.	There should be a follow-up (Psychology II) offered	3
24.	Our textbook is very good	3
25.	Getting away from the textbook was beneficial	3
26.	Learning (memorizing) facts for tests is not going to help me	3
27.	This should be a required class	3

Illinois

Additional comments - page 2	Number of students
28. Materials should be covered slower	3
29. This is a good class for college prep	2
30. This subject was easy to understand	2
31. This was an easy class (in terms of grades)	2
32. This class has cleared up some misconceptions about psychology	2
33. The teacher should take more effort to explain things	2
34. More movies	1
35. More time should be devoted to adolescent psychology	1
36. I haven't learned anything new	1
37. The reading and material were too difficult	1
38. The reading and material should be adapted to slow learners	1
39. Material should be covered faster	1
40. Get away from history of psychology	1
41. More relevance is needed (for the here and now)	1
42. This class helped me in my decision about a future career	1
43. There should be a variety of psychology courses to choose from	1
44. This was not fun	1
45. Grading should be based on more than just tests	1
46. This is the only course that I really got anything out of	1
47. High school psychology should not be placed on the same level as a college psychology course	1
48. Reading should include more than just the textbook	1
49. This course gave me a good basic understanding of psychology	1
50. The teacher shouldn't grade so hard	1
51. The teacher's lectures are helpful for the tests	1
52. Outside activities (field trips, etc.) should all be voluntary	1
53. The best ways to learn are through lectures	
54. More should have been covered on motivation	1

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APPENDIX B

COPIES OF THE IBM COMPUTER PRINTOUTS OF TEACHER DATA OBTAINED FROM THE QUESTIONNAIRES.

THROUGHOUT THIS APPENDIX, THE THREE GROUPS ARE TO BE READ AS FOLLOWS ALONG THE LEFT HAND SIDE OF EVERY TABLE.

1. SOCIAL STUDIES REPRESENTS THE "SOCIAL STUDIES" CERTIFIED TEACHERS
2. SCIENCE SHOULD READ "GUIDANCE COUNSELORS"
3. PSYCHOLOGY SHOULD READ "ALL OTHERS-AREA" CERTIFIED TEACHERS

READERS MAY WANT TO REFER TO THE TEACHER QUESTIONNAIRE PROVIDED IN APPENDIX A TO FOLLOW THESE COMPUTER PRINTOUT FORMS.

X104	X6	1. K-12	2. LT 7-12	3. 7-12	4. 8-12	5. 9-12	6. 10-12	7. 11-12	8. 12	ROW TOTAL
1. SOCIAL STUDIES	COUNT	1	2	3	1	112	7	6	5	137
	ROW PCT	.7	1.5	2.2	.7	81.8	5.1	4.4	3.6	43.9
	COL PCT	25.0	22.2	27.3	33.3	44.1	43.8	66.7	83.3	
	TOT PCT	.3	.6	1.0	.3	35.9	2.2	1.9	1.6	
2. ~~GUIDANCE~~ Guidance	COUNT	1	3	4	0	51	3	2	1	65
	ROW PCT	1.5	4.6	6.2	.0	78.5	4.6	3.1	1.5	20.8
	COL PCT	25.0	33.3	36.4	.0	20.1	18.8	22.2	16.7	
	TOT PCT	.3	1.0	1.3	.0	16.3	1.0	.6	.3	
3. ~~PSYCHOLOGY~~ all others	COUNT	2	4	4	2	91	6	1	0	110
	ROW PCT	1.8	3.6	3.6	1.8	82.7	5.5	.9	.0	35.3
	COL PCT	50.0	44.4	36.4	66.7	35.8	37.5	11.1	.0	
	TOT PCT	.6	1.3	1.3	.6	29.2	1.9	.3	.0	
COLUMN TOTAL		4	9	11	3	254	16	9	6	312
		1.3	2.9	3.5	1.0	81.4	5.1	2.9	1.9	100.0

CHI SQUARE = 12.97010 WITH 14 DEGREES OF FREEDOM SIGNIFICANCE = .5289

NUMBER OF MISSING OBSERVATIONS = 19

CROSSTABULATION OF

X104	COUNT / ROW PCT / COL PCT / TOT PCT	X7 1. PUBLIC	2. PRIVATE NR	3. PRIVATE R	4. CATHOLIC P	ROW TOTAL
1. SOCIAL STUDIES		123	1	1	24	149
		82.6	.7	.7	16.1	45.4
		45.4	20.0	11.1	55.8	
		37.5	.3	.3	7.3	
2. SCIENCE		54	0	4	7	65
		83.1	.0	6.2	10.8	19.8
		19.9	.0	44.4	16.3	
		16.5	.0	1.2	2.1	
3. PSYCHOLOGY		94	4	4	12	114
		82.5	3.5	3.5	10.5	34.8
		34.7	80.0	44.4	27.9	
		28.7	1.2	1.2	3.7	
COLUMN TOTAL		271	5	9	43	328
		82.6	1.5	2.7	13.1	100.0

CHI SQUARE = 11.85320 WITH 6 DEGREES OF FREEDOM SIGNIFICANCE = .0653

NUMBER OF MISSING OBSERVATIONS = 3

XB								
COUNT / ROW PCT / COL PCT / TOT PCT	LT 150	150 TO 350	351 TO 500	501 TO 1000	1001 TO 1500	1501 TO 3000	GT 3000	ROW TOTAL
	1.	2.	3.	4.	5.	6.	7.	
AREA OF CERTIFICATION								
1. SOCIAL STUDIES	7	23	21	29	17	45	6	148
	4.7	15.5	14.2	19.6	11.5	30.4	4.1	45.3
	24.1	33.3	52.5	40.8	54.8	60.0	50.0	
	2.1	7.0	6.4	8.9	5.2	13.8	1.8	
2. SCIENCE	8	24	8	18	2	5	0	65
	12.3	36.9	12.3	27.7	3.1	7.7	.0	19.9
	27.6	34.8	20.0	25.4	6.5	6.7	.0	
	2.4	7.3	2.4	5.5	.6	1.5	.0	
3. PSYCHOLOGY	14	22	11	24	12	25	6	114
	12.3	19.3	9.6	21.1	10.5	21.9	5.3	34.9
	48.3	31.9	27.5	33.8	38.7	33.3	50.0	
	4.3	6.7	3.4	7.3	3.7	7.6	1.8	
COLUMN TOTAL	29	69	40	71	31	75	12	327
	8.9	21.1	12.2	21.7	9.5	22.9	3.7	100.0

CHI SQUARE = 34.80321 WITH 12 DEGREES OF FREEDOM SIGNIFICANCE = .0005

NUMBER OF MISSING OBSERVATIONS = 4

X104 AREA OF CERTIFICATION BY X9 RACIAL RATIO

X104	X9	.95W-1.05 B	.80W-.95 B	.65W-.80 B	.50W-.65 B	.35W-.50 B	.20W-.35 B	ROW TOTAL
SOCIAL STUDIES	1.	113	22	6	1	1	4	147
		76.9	15.0	4.1	.7	.7	2.7	45.2
		42.2	71.0	60.0	33.3	50.0	36.4	
		34.8	6.8	1.8	.3	.3	1.2	
SCIENCE	2.	57	2	1	1	1	3	65
		87.7	3.1	1.5	1.5	1.5	4.6	20.0
		21.3	6.5	10.0	33.3	50.0	27.3	
		17.5	.6	.3	.3	.3	.9	
PSYCHOLOGY	3.	98	7	3	1	0	4	113
		86.7	6.2	2.7	.9	.0	3.5	34.8
		36.6	22.6	30.0	33.3	.0	36.4	
		30.2	2.2	.9	.3	.0	1.2	
COLUMN TOTAL		268	31	10	3	2	11	325
		82.5	9.5	3.1	.9	.6	3.4	100.0

CHI SQUARE = 13.23725 WITH 10 DEGREES OF FREEDOM SIGNIFICANCE = .2107

NUMBER OF MISSING OBSERVATIONS = 6

X104	COUNT / ROW PCT / COL PCT / TOT PCT	X10 1.0 URBAN	2.0 RURAL	3.0 SUBURBAN	4.0 INNER CITY	ROW TOTAL
1. SOCIAL STUDIES		37	61	46	4	148
		25.0	41.2	31.1	2.7	45.5
		56.9	37.0	51.7	66.7	
		11.4	18.8	14.2	1.2	
2. SCIENCE		7	48	8	1	64
		10.9	75.0	12.5	1.6	19.7
		10.8	29.1	9.0	16.7	
		2.2	14.8	2.5	.3	
3. PSYCHOLOGY		21	56	35	1	113
		18.6	49.6	31.0	.9	34.8
		32.3	33.9	39.3	16.7	
		6.5	17.2	10.8	.3	
COLUMN TOTAL		65	165	89	6	325
		20.0	50.8	27.4	1.8	100.0

CHI SQUARE = 22.31518 WITH 6 DEGREES OF FREEDOM SIGNIFICANCE = .0011

NUMBER OF MISSING OBSERVATIONS = 6

X114	COUNT / ROW PCT / COL PCT / TOT PCT	X11 NO (0.)	X11 YES (1.)	ROW TOTAL
1. SOCIAL STUDIES		134	15	149
		89.9	10.1	45.4
		45.9	41.7	
		40.9	4.6	
2. SCIENCE		57	8	65
		87.7	12.3	19.8
		19.5	22.2	
		17.4	2.4	
3. PSYCHOLOGY		101	13	114
		88.6	11.4	34.8
		34.6	36.1	
		30.8	4.0	
COLUMN TOTAL		292	36	328
		89.0	11.0	100.0

CHI SQUARE = .26527 WITH 2 DEGREES OF FREEDOM SIGNIFICANCE = .8758

NUMBER OF MISSING OBSERVATIONS = 3

X12			
COUNT / ROW PCT / COL PCT / TOT PCT	NO 0.	YES 1.	ROW TOTAL
1. SOCIAL STUDIES	125 / 83.9 / 44.2 / 38.1	24 / 16.1 / 53.3 / 7.3	149 / 45.4
2. SCIENCE	55 / 84.6 / 19.4 / 16.8	10 / 15.4 / 22.2 / 3.0	65 / 19.8
3. PSYCHOLOGY	103 / 90.4 / 36.4 / 31.4	11 / 9.6 / 24.4 / 3.4	114 / 34.8
COLUMN TOTAL	283 / 86.3	45 / 13.7	328 / 100.0

CHI SQUARE = 2.46557 WITH 2 DEGREES OF FREEDOM SIGNIFICANCE = .2915

NUMBER OF MISSING OBSERVATIONS = 3

X104	COUNT / ROW PCT / COL PCT / TOT PCT	X13: NO 0.	YES 1.	ROW TOTAL
SOCIAL STUDIES	1.	138	11	149
		92.6	7.4	45.4
		45.4	45.8	
		42.1	3.4	
SCIENCE	2.	59	6	65
		90.8	9.2	19.8
		19.4	25.0	
		18.0	1.8	
PSYCHOLOGY	3.	107	7	114
		93.9	6.1	34.8
		35.2	29.2	
		32.6	2.1	
COLUMN TOTAL		304	24	328
		92.7	7.3	100.0

CHI SQUARE = .58472 WITH 2 DEGREES OF FREEDOM SIGNIFICANCE = .7465

NUMBER OF MISSING OBSERVATIONS = 3

CROSSTABULATION OF

X10 AREA OF CERTIFICATION BY X14 FAMILY LIFE

X10	COUNT / ROW PCT / COL PCT / TOT PCT	X14 NO (0.)	X14 YES (1.)	ROW TOTAL
1. SOCIAL STUDIES		90	59	149
		60.4	39.6	45.4
		50.0	39.9	
		27.4	18.0	
2. SCIENCE		37	28	65
		56.9	43.1	19.8
		20.6	18.9	
		11.3	8.5	
3. PSYCHOLOGY		53	61	114
		46.5	53.5	34.8
		29.4	41.2	
		16.2	18.6	
COLUMN TOTAL		180	148	328
		54.9	45.1	100.0

CHI SQUARE = 5.18462 WITH 2 DEGREES OF FREEDOM SIGNIFICANCE = .0748

NUMBER OF MISSING OBSERVATIONS = 3

X10	COUNT / ROW PCT / COL PCT / TOT PCT	X15 NO	X15 YES	ROW TOTAL
		0.	1.	
	1.	82	67	149
SOCIAL STUDIES		55.0	45.0	45.4
		42.1	50.4	
		25.0	20.4	
	2.	46	19	65
SCIENCE		70.8	29.2	19.8
		23.6	14.3	
		14.0	5.8	
	3.	67	47	114
PSYCHOLOGY		58.8	41.2	34.8
		34.4	35.3	
		20.4	14.3	
	COLUMN TOTAL	195 59.5	133 40.5	328 100.0

CHI SQUARE = 4.68200 WITH 2 DEGREES OF FREEDOM SIGNIFICANCE = .0962

NUMBER OF MISSING OBSERVATIONS = 3

X1004 AREA OF CERTIFICATION	X16 SOCIOLOGY 0. NO	1. YES	ROW TOTAL
1. SOCIAL STUDIES	72	77	149
	48.3	51.7	45.4
	39.3	53.1	
	22.0	23.5	
2. SCIENCE	40	25	65
	61.5	38.5	19.8
	21.9	17.2	
	12.2	7.6	
3. PSYCHOLOGY	71	43	114
	62.3	37.7	34.8
	38.8	29.7	
	21.6	13.1	
COLUMN TOTAL	183	145	328
	55.8	44.2	100.0

CHI SQUARE = 6.18712 WITH 2 DEGREES OF FREEDOM SIGNIFICANCE = .0453

NUMBER OF MISSING OBSERVATIONS = 3

CROSSTABULATION OF

X10M	X17	NO	YES	ROW TOTAL
		0.	1.	
SOCIAL STUDIES	1.	125	24	149
		83.9	16.1	45.4
		45.3	46.2	
		38.1	7.3	
SCIENCE	2.	53	12	65
		81.5	18.5	19.8
		19.2	23.1	
		16.2	3.7	
PSYCHOLOGY	3.	98	16	114
		86.0	14.0	34.8
		35.5	30.8	
		29.9	4.9	
COLUMN TOTAL		276	52	328
		84.1	15.9	100.0

CHI SQUARE = .62119 WITH 2 DEGREES OF FREEDOM SIGNIFICANCE = .7330

NUMBER OF MISSING OBSERVATIONS = 3

X104 AREA OF CERTIFICATION — CROSSTABULATION OF X104 BY X18 OTHER — PAGE 1 OF

X104	COUNT / ROW PCT / COL PCT / TOT PCT	X18 NO	X18 YES	ROW TOTAL
		0.1	1.1	
1. SOCIAL STUDIES		137	12	149
		91.9	8.1	45.4
		45.2	48.0	
		41.8	3.7	
2. SCIENCE		61	4	65
		93.8	6.2	19.8
		20.1	16.0	
		18.6	1.2	
3. PSYCHOLOGY		105	9	114
		92.1	7.9	34.8
		34.7	36.0	
		32.0	2.7	
COLUMN TOTAL		303	25	328
		92.4	7.6	100.0

CHI SQUARE = .25047 WITH 2 DEGREES OF FREEDOM SIGNIFICANCE = .8823

NUMBER OF MISSING OBSERVATIONS = 3

X109	COUNT / ROW PCT / COL PCT / TOT PCT	X19 YES 1.	X19 NO 2.	ROW TOTAL
SOCIAL STUDIES	1.	148	1	149
		99.3	.7	45.4
		45.3	100.0	
		45.1	.3	
SCIENCE	2.	65	0	65
		100.0	.0	19.8
		19.9	.0	
		19.8	.0	
PSYCHOLOGY	4.	114	0	114
		100.0	.0	34.8
		34.9	.0	
		34.8	.0	
COLUMN TOTAL		327	1	328
		99.7	.3	100.0

CHI SQUARE = 1.20502 WITH 2 DEGREES OF FREEDOM SIGNIFICANCE = .5474

NUMBER OF MISSING OBSERVATIONS = 3

CROSSTABULATION OF

X104	X20	
COUNT / ROW PCT / COL PCT / TOT PCT	YES 1.	ROW TOTAL
SOCIAL STUDIES 1.	148 / 100.0 / 45.7 / 45.7	148 / 45.7
SCIENCE 2.	64 / 100.0 / 19.8 / 19.8	64 / 19.8
PSYCHOLOGY 3.	112 / 100.0 / 34.6 / 34.6	112 / 34.6
COLUMN TOTAL	324 / 100.0	324 / 100.0

NUMBER OF MISSING OBSERVATIONS = 7

CROSSTABULATION OF

X104	COUNT / ROW PCT / COL PCT / TOT PCT	X21 YES 1.	X21 NO 2.	ROW TOTAL
1. SOCIAL STUDIES		25	123	148
		16.9	83.1	45.7
		55.6	44.1	
		7.7	38.0	
2. SCIENCE		2	61	63
		3.2	96.8	19.4
		4.4	21.9	
		.6	18.8	
3. PSYCHOLOGY		18	95	113
		15.9	84.1	34.9
		40.0	34.1	
		5.6	29.3	
COLUMN TOTAL		45	279	324
		13.9	86.1	100.0

CHI SQUARE = 7.55628 WITH 2 DEGREES OF FREEDOM SIGNIFICANCE = .0229

NUMBER OF MISSING OBSERVATIONS = 7

X104	X22 ELECTIVE REQUIRED 1.	2.	3.	ROW TOTAL
1. SOCIAL STUDIES	144	4	1	149
	96.6	2.7	.7	45.6
	45.3	66.7	33.3	
	44.0	1.2	.3	
2. SCIENCE	62	1	2	65
	95.4	1.5	3.1	19.9
	19.5	16.7	66.7	
	19.0	.3	.6	
3. PSYCHOLOGY	112	1	0	113
	99.1	.9	.0	34.6
	35.2	16.7	.0	
	34.3	.3	.0	
COLUMN TOTAL	318	6	3	327
	97.2	1.8	.9	100.0

CHI SQUARE = 5.60164 WITH 4 DEGREES OF FREEDOM SIGNIFICANCE = .2242

NUMBER OF MISSING OBSERVATIONS = 4

X104	X23	1.	2.	3.	4.	5.	6.	7.	ROW TOTAL
1. SOCIAL STUDIES	COUNT	52	37	29	20	7	2	0	147
	ROW PCT	35.4	25.2	19.7	13.6	4.8	1.4	.0	45.7
	COL PCT	36.6	51.4	52.7	62.5	38.9	100.0	.0	
	TOT PCT	16.1	11.5	9.0	6.2	2.2	.6	.0	
2. SCIENCE	COUNT	44	13	5	2	0	0	0	64
	ROW PCT	68.8	20.3	7.8	3.1	.0	.0	.0	19.9
	COL PCT	31.0	18.1	9.1	6.3	.0	.0	.0	
	TOT PCT	13.7	4.0	1.6	.6	.0	.0	.0	
3. PSYCHOLOGY	COUNT	46	22	21	10	11	0	1	111
	ROW PCT	41.4	19.8	18.9	9.0	9.9	.0	.9	34.5
	COL PCT	32.4	30.6	38.2	31.3	61.1	.0	100.0	
	TOT PCT	14.3	6.8	6.5	3.1	3.4	.0	.3	
COLUMN TOTAL		142	72	55	32	18	2	1	322
		44.1	22.4	17.1	9.9	5.6	.6	.3	100.0

CHI SQUARE = 31.35536 WITH 12 DEGREES OF FREEDOM SIGNIFICANCE = .0009

NUMBER OF MISSING OBSERVATIONS = 9

CROSSTABULATION OF

X104	X24 BEHAVIORISTIC	X24 HUMANISTIC	X24 ECLECTIC	ROW TOTAL
1. SOCIAL STUDIES	56	60	27	143
	39.2	42.0	18.9	45.1
	48.3	39.0	57.4	
	17.7	18.9	8.5	
2. SCIENCE	18	38	7	63
	28.6	60.3	11.1	19.9
	15.5	24.7	14.9	
	5.7	12.0	2.2	
3. PSYCHOLOGY	42	56	13	111
	37.8	50.5	11.7	35.0
	36.2	36.4	27.7	
	13.2	17.7	4.1	
COLUMN TOTAL	116	154	47	317
	36.6	48.6	14.8	100.0

CHI SQUARE = 7.46830 WITH 4 DEGREES OF FREEDOM SIGNIFICANCE = .1131

NUMBER OF MISSING OBSERVATIONS = 14

CROSSTABULATION OF X104 AREA OF CERTIFICATION BY X25 LENGTH OF TIME

X104	X25	2. SIX WEEKS	3. NINE WEEKS	4. ONE SEMESTER	5. FULL YEAR COURSE	6. OTHER	ROW TOTAL
1. SOCIAL STUDIES	COUNT	1	4	114	28	2	149
	ROW PCT	.7	2.7	76.5	18.8	1.3	45.6
	COL PCT	100.0	44.4	46.5	41.2	50.0	
	TOT PCT	.3	1.2	34.9	8.6	.6	
2. SCIENCE	COUNT	0	3	50	12	0	65
	ROW PCT	.0	4.6	76.9	18.5	.0	19.9
	COL PCT	.0	33.3	20.4	17.6	.0	
	TOT PCT	.0	.9	15.3	3.7	.0	
3. PSYCHOLOGY	COUNT	0	2	81	28	2	113
	ROW PCT	.0	1.8	71.7	24.8	1.8	34.6
	COL PCT	.0	22.2	33.1	41.2	50.0	
	TOT PCT	.0	.6	24.8	8.6	.6	
COLUMN TOTAL		1	9	245	68	4	327
		.3	2.8	74.9	20.8	1.2	100.0

CHI SQUARE = 5.06488 WITH 8 DEGREES OF FREEDOM SIGNIFICANCE = .7506

NUMBER OF MISSING OBSERVATIONS = 4

CROSSTABULATION OF

X104	COUNT / ROW PCT / COL PCT / TOT PCT	X28 FEMALE 1.	MALE 2.	EVEN 3.	ROW TOTAL
SOCIAL STUDIES	1.	103	21	22	146
		70.5	14.4	15.1	45.3
		43.1	58.3	46.8	
		32.0	6.5	6.8	
SCIENCE	2.	42	7	14	63
		66.7	11.1	22.2	19.6
		17.6	19.4	29.8	
		13.0	2.2	4.3	
PSYCHOLOGY	3.	94	8	11	113
		83.2	7.1	9.7	35.1
		39.3	22.2	23.4	
		29.2	2.5	3.4	
	COLUMN TOTAL	239 74.2	36 11.2	47 14.6	322 100.0

HI SQUARE = 9.37537 WITH 4 DEGREES OF FREEDOM SIGNIFICANCE = .0524

UMBER OF MISSING OBSERVATIONS = 7

X104	X29 COUNT / ROW PCT / COL PCT / TOT PCT	1.95 WHIT / F-.95 BL	.80-.20	.65-.35	.50-.50	.35-.65	.20-.80	ROW TOTAL
		1.	2.	3.	4.	5.	6.	
SOCIAL STUDIES	1.	126	15	2	0	1	2	146
		86.3	10.3	1.4	.0	.7	1.4	45.2
		43.9	71.4	50.0	.0	100.0	25.0	
		39.0	4.6	.6	.0	.3	.6	
SCIENCE	2.	57	2	1	2	0	3	65
		87.7	3.1	1.5	3.1	.0	4.6	20.1
		19.9	9.5	25.0	100.0	.0	37.5	
		17.6	.6	.3	.6	.0	.9	
PSYCHOLOGY	3.	104	4	1	0	0	3	112
		92.9	3.6	.9	.0	.0	2.7	34.7
		36.2	19.0	25.0	.0	.0	37.5	
		32.2	1.2	.3	.0	.0	.9	
COLUMN TOTAL		287	21	4	2	1	8	323
		88.9	6.5	1.2	.6	.3	2.5	100.0

CHI SQUARE = 17.43363 WITH 10 DEGREES OF FREEDOM SIGNIFICANCE = .0653

NUMBER OF MISSING OBSERVATIONS = 8

CROSSTABULATION OF X104 AREA OF CERTIFICATION BY X30 GRADE LEVEL

X104	X30	10TH GRADE	11TH GRADE	12TH GRADE	10-12TH GRADES	11-12TH GRADES	OTHER	ROW TOTAL
		2.	3.	4.	5.	6.	7.	
1. SOCIAL STUDIES	COUNT	1	1	39	10	93	3	147
	ROW PCT	.7	.7	26.5	6.8	63.3	2.0	45.2
	COL PCT	100.0	50.0	42.9	35.7	46.7	75.0	
	TOT PCT	.3	.3	12.0	3.1	28.6	.9	
2. SCIENCE	COUNT	0	1	22	9	33	0	65
	ROW PCT	.0	1.5	33.8	13.8	50.8	.0	20.0
	COL PCT	.0	50.0	24.2	32.1	16.6	.0	
	TOT PCT	.0	.3	6.8	2.8	10.2	.0	
3. PSYCHOLOGY	COUNT	0	0	30	9	73	1	113
	ROW PCT	.0	.0	26.5	8.0	64.6	.9	34.8
	COL PCT	.0	.0	33.0	32.1	36.7	25.0	
	TOT PCT	.0	.0	9.2	2.8	22.5	.3	
COLUMN TOTAL		1 .3	2 .6	91 28.0	28 8.6	199 61.2	4 1.2	325 100.0

CHI SQUARE = 9.65297 WITH 10 DEGREES OF FREEDOM SIGNIFICANCE = .4714

NUMBER OF MISSING OBSERVATIONS = 6

X100	X31	NO	YES	ROW TOTAL
	COUNT			
	ROW PCT			
	COL PCT			
	TOT PCT	0.	1.	
SOCIAL STUDIES	1.	30	119	149
		20.1	79.9	45.4
		42.9	46.1	
		9.1	36.3	
SCIENCE	2.	11	54	65
		16.9	83.1	19.8
		15.7	20.9	
		3.4	16.5	
PSYCHOLOGY	3.	29	85	114
		25.4	74.6	34.8
		41.4	32.9	
		8.8	25.9	
	COLUMN TOTAL	70	258	328
		21.3	78.7	100.0

CHI SQUARE = 2.07525 WITH 2 DEGREES OF FREEDOM SIGNIFICANCE = .3633

NUMBER OF MISSING OBSERVATIONS = 3

X104	X32	0. NO	1. YES	ROW TOTAL
1. SOCIAL STUDIES	COUNT	5	144	149
	ROW PCT	3.4	96.6	45.4
	COL PCT	21.7	47.2	
	TOT PCT	1.5	43.9	
2. SCIENCE	COUNT	5	60	65
	ROW PCT	7.7	92.3	19.8
	COL PCT	21.7	19.7	
	TOT PCT	1.5	18.3	
3. PSYCHOLOGY	COUNT	13	101	114
	ROW PCT	11.4	88.6	34.8
	COL PCT	56.5	33.1	
	TOT PCT	4.0	30.8	
COLUMN TOTAL		23	305	328
		7.0	93.0	100.0

CHI SQUARE = 6.47271 WITH 2 DEGREES OF FREEDOM SIGNIFICANCE = .0393

NUMBER OF MISSING OBSERVATIONS = 3

CROSSTABULATION OF

X33

X104	COUNT / ROW PCT / COL PCT / TOT PCT	NO 0.	YES 1.	ROW TOTAL
1. SOCIAL STUDIES		71	78	149
		47.7	52.3	45.4
		47.3	43.8	
		21.6	23.8	
2. SCIENCE		28	37	65
		43.1	56.9	19.8
		18.7	20.8	
		8.5	11.3	
3. PSYCHOLOGY		51	63	114
		44.7	55.3	34.8
		34.0	35.4	
		15.5	19.2	
COLUMN TOTAL		150	178	328
		45.7	54.3	100.0

CHI SQUARE = .45122 WITH 2 DEGREES OF FREEDOM SIGNIFICANCE = .7980

NUMBER OF MISSING OBSERVATIONS = 3

X104	COUNT / ROW PCT / COL PCT / TOT PCT	X34 NO (0.)	X34 YES (1.)	ROW TOTAL
1. SOCIAL STUDIES		36	113	149
		24.2	75.8	45.4
		43.4	46.1	
		11.0	34.5	
2. SCIENCE		19	46	65
		29.2	70.8	19.8
		22.9	18.8	
		5.8	14.0	
3. PSYCHOLOGY		28	86	114
		24.6	75.4	34.8
		33.7	35.1	
		8.5	26.2	
COLUMN TOTAL		83	245	328
		25.3	74.7	100.0

CHI SQUARE = .66649 WITH 2 DEGREES OF FREEDOM SIGNIFICANCE = .7166

NUMBER OF MISSING OBSERVATIONS = 3

CROSSTABULATION OF

X104	X35		
COUNT / ROW PCT / COL PCT / TOT PCT	NO 0.	YES 1.	ROW TOTAL
1. SOCIAL STUDIES	28 / 18.8 / 52.8 / 8.5	121 / 81.2 / 44.0 / 36.9	149 / 45.4
2. SCIENCE	7 / 10.8 / 13.2 / 2.1	58 / 89.2 / 21.1 / 17.7	65 / 19.8
3. PSYCHOLOGY	18 / 15.8 / 34.0 / 5.5	96 / 84.2 / 34.9 / 29.3	114 / 34.8
COLUMN TOTAL	53 / 16.2	275 / 83.8	328 / 100.0

CHI SQUARE = 2.16771 WITH 2 DEGREES OF FREEDOM SIGNIFICANCE = .3383

NUMBER OF MISSING OBSERVATIONS = 3

X104	X36		
COUNT / ROW PCT / COL PCT / TOT PCT	NO 0.1	YES 1.1	ROW TOTAL
1. SOCIAL STUDIES	24 16.1 51.1 7.3	125 83.9 44.5 38.1	149 45.4
2. SCIENCE	14 21.5 29.8 4.3	51 78.5 18.1 15.5	65 19.8
3. PSYCHOLOGY	9 7.9 19.1 2.7	105 92.1 37.4 32.0	114 34.8
COLUMN TOTAL	47 14.3	281 85.7	328 100.0

HI SQUARE = 4.98051 WITH 2 DEGREES OF FREEDOM SIGNIFICANCE = .0305

NUMBER OF MISSING OBSERVATIONS = 3

X19	COUNT / ROW PCT / COL PCT / TOT PCT	X37 NO (0.)	X37 YES (1.)	ROW TOTAL
1. SOCIAL STUDIES		26	123	149
		17.4	82.6	45.4
		43.3	46.9	
		7.9	37.5	
2. SCIENCE		15	50	65
		23.1	76.9	19.8
		25.0	18.7	
		4.6	15.2	
3. PSYCHOLOGY		19	95	114
		16.7	83.3	34.8
		31.7	35.4	
		5.8	29.0	
COLUMN TOTAL		60	268	328
		18.3	81.7	100.0

CHI SQUARE = 1.26791 WITH 2 DEGREES OF FREEDOM SIGNIFICANCE = .5305

NUMBER OF MISSING OBSERVATIONS = 3

X104 AREA OF CERTIFICATION BY X38 MENTAL RETARDATION

X104		X38 NO (0.)	X38 YES (1.)	ROW TOTAL
1. SOCIAL STUDIES	COUNT	64	85	149
	ROW PCT	43.0	57.0	45.4
	COL PCT	49.6	42.7	
	TOT PCT	19.5	25.9	
2. SCIENCE	COUNT	29	36	65
	ROW PCT	44.6	55.4	19.8
	COL PCT	22.5	18.1	
	TOT PCT	8.8	11.0	
3. PSYCHOLOGY	COUNT	36	78	114
	ROW PCT	31.6	68.4	34.8
	COL PCT	27.9	39.2	
	TOT PCT	11.0	23.8	
COLUMN TOTAL		129	199	328
		39.3	60.7	100.0

CHI SQUARE = 4.45096 WITH 2 DEGREES OF FREEDOM SIGNIFICANCE = .1080

NUMBER OF MISSING OBSERVATIONS = 3

X10 AREA OF CERTIFICATION BY X39 STATISTICS PAGE 1 OF

X10	X39	NO (0.)	YES (1.)	ROW TOTAL
1. SOCIAL STUDIES	COUNT	121	28	149
	ROW PCT	81.2	18.8	45.4
	COL PCT	47.1	39.4	
	TOT PCT	36.9	8.5	
2. SCIENCE	COUNT	48	17	65
	ROW PCT	73.8	26.2	19.8
	COL PCT	18.7	23.9	
	TOT PCT	14.6	5.2	
3. PSYCHOLOGY	COUNT	88	26	114
	ROW PCT	77.2	22.8	34.8
	COL PCT	34.2	36.6	
	TOT PCT	26.8	7.9	
COLUMN TOTAL		257	71	328
		78.4	21.6	100.0

CHI SQUARE = 1.58496 WITH 2 DEGREES OF FREEDOM SIGNIFICANCE = .4527

NUMBER OF MISSING OBSERVATIONS = 3

X104	COUNT / ROW PCT / COL PCT / TOT PCT	X40 NO (0.)	X40 YES (1.)	ROW TOTAL
1. SOCIAL STUDIES		24	125	149
		16.1	83.9	45.4
		34.8	48.3	
		7.3	38.1	
2. SCIENCE		17	48	65
		26.2	73.8	19.8
		24.6	18.5	
		5.2	14.6	
3. PSYCHOLOGY		28	86	114
		24.6	75.4	34.8
		40.6	33.2	
		8.5	26.2	
COLUMN TOTAL		69	259	328
		21.0	79.0	100.0

CHI SQUARE = 4.05675 WITH 2 DEGREES OF FREEDOM SIGNIFICANCE = .1315

NUMBER OF MISSING OBSERVATIONS = 3

CROSSTABULATION OF X104 AREA OF CERTIFICATION BY X41 HUMAN BODY

X104 (COUNT / ROW PCT / COL PCT / TOT PCT)	X41 NO 0.	YES 1.	ROW TOTAL
1. SOCIAL STUDIES	98	51	149
	65.8	34.2	45.4
	46.7	43.2	
	29.9	15.5	
2. SCIENCE	42	23	65
	64.6	35.4	19.8
	20.0	19.5	
	12.8	7.0	
3. PSYCHOLOGY	70	44	114
	61.4	38.6	34.8
	33.3	37.3	
	21.3	13.4	
COLUMN TOTAL	210	118	328
	64.0	36.0	100.0

CHI SQUARE = .54736 WITH 2 DEGREES OF FREEDOM SIGNIFICANCE = .7606

NUMBER OF MISSING OBSERVATIONS = 3

CROSSTABULATION OF

X104	X42	NO (0.)	YES (1.)	ROW TOTAL
1. SOCIAL STUDIES	COUNT	91	58	149
	ROW PCT	61.1	38.9	45.4
	COL PCT	50.8	38.9	
	TOT PCT	27.7	17.7	
2. SCIENCE	COUNT	35	30	65
	ROW PCT	53.8	46.2	19.8
	COL PCT	19.6	20.1	
	TOT PCT	10.7	9.1	
3. PSYCHOLOGY	COUNT	53	61	114
	ROW PCT	46.5	53.5	34.8
	COL PCT	29.6	40.9	
	TOT PCT	16.2	18.6	
COLUMN TOTAL		179	149	328
		54.6	45.4	100.0

CHI SQUARE = 5.55733 WITH 2 DEGREES OF FREEDOM SIGNIFICANCE = .0621

NUMBER OF MISSING OBSERVATIONS = 3

X104 AREA OF CERTIFICATION — CROSSTABULATION OF X104 BY X43 HUMAN GROWTH AND DEVELOPMENT — PAGE 1 OF

X104	X43 NO (0.)	X43 YES (1.)	ROW TOTAL
1. SOCIAL STUDIES	44	105	149
	29.5	70.5	45.4
	44.4	45.9	
	13.4	32.0	
2. SCIENCE	24	41	65
	36.9	63.1	19.8
	24.2	17.9	
	7.3	12.5	
3. PSYCHOLOGY	31	83	114
	27.2	72.8	34.8
	31.3	36.2	
	9.5	25.3	
COLUMN TOTAL	99	229	328
	30.2	69.8	100.0

CHI SQUARE = 1.91504 WITH 2 DEGREES OF FREEDOM SIGNIFICANCE = .3838

NUMBER OF MISSING OBSERVATIONS = 3

X1G4	COUNT / ROW PCT / COL PCT / TOT PCT	X44 NO (0.)	X44 YES (1.)	ROW TOTAL
1. SOCIAL STUDIES		48	101	149
		32.2	67.8	45.4
		42.9	46.8	
		14.6	30.8	
2. SCIENCE		28	37	65
		43.1	56.9	19.8
		25.0	17.1	
		8.5	11.3	
3. PSYCHOLOGY		36	78	114
		31.6	68.4	34.8
		32.1	36.1	
		11.0	23.8	
COLUMN TOTAL		112	216	328
		34.1	65.9	100.0

CHI SQUARE = 2.88680 WITH 2 DEGREES OF FREEDOM SIGNIFICANCE = .2361

NUMBER OF MISSING OBSERVATIONS = 3

CROSSTABULATION OF AREA OF CERTIFICATION BY X45 SENSATIONS AND PERCEPTION

AREA OF CERTIFICATION	X45 NO (0.)	X45 YES (1.)	ROW TOTAL
1. SOCIAL STUDIES	53	96	149
	35.6	64.4	45.4
	46.1	45.1	
	16.2	29.3	
2. SCIENCE	26	39	65
	40.0	60.0	19.8
	22.6	18.3	
	7.9	11.9	
3. PSYCHOLOGY	36	78	114
	31.6	68.4	34.8
	31.3	36.6	
	11.0	23.8	
COLUMN TOTAL	115	213	328
	35.1	64.9	100.0

CHI SQUARE = 1.32047 WITH 2 DEGREES OF FREEDOM SIGNIFICANCE = .5167

NUMBER OF MISSING OBSERVATIONS = 3

CROSSTABULATION OF X104 AREA OF CERTIFICATION BY X46 SOCIAL BEHAVIOR

X104 AREA OF CERTIFICATION	X46 SOCIAL BEHAVIOR: 0. NO	1. YES	ROW TOTAL
1. SOCIAL STUDIES	61	88	149
	40.9	59.1	45.4
	53.5	41.1	
	18.6	26.8	
2. SCIENCE	20	45	65
	30.8	69.2	19.8
	17.5	21.0	
	6.1	13.7	
3. PSYCHOLOGY	33	81	114
	28.9	71.1	34.8
	28.9	37.9	
	10.1	24.7	
COLUMN TOTAL	114	214	328
	34.8	65.2	100.0

CHI SQUARE = 4.66427 WITH 2 DEGREES OF FREEDOM SIGNIFICANCE = .0971

NUMBER OF MISSING OBSERVATIONS = 3

X104	COUNT / ROW PCT / COL PCT / TOT PCT	X47 NO (0.)	X47 YES (1.)	ROW TOTAL
1. SOCIAL STUDIES		105	44	149
		70.5	29.5	45.4
		47.3	41.5	
		32.0	13.4	
2. SCIENCE		45	20	65
		69.2	30.8	19.8
		20.3	18.9	
		13.7	6.1	
3. PSYCHOLOGY		72	42	114
		63.2	36.8	34.8
		32.4	39.6	
		22.0	12.8	
COLUMN TOTAL		222	106	328
		67.7	32.3	100.0

CHI SQUARE = 1.66744 WITH 2 DEGREES OF FREEDOM SIGNIFICANCE = .4344

NUMBER OF MISSING OBSERVATIONS = 3

AREA OF CERTIFICATION	COUNT / ROW PCT / COL PCT / TOT PCT	X48 NO (0.)	X48 YES (1.)	ROW TOTAL
1. SOCIAL STUDIES		97	52	149
		65.1	34.9	45.4
		49.5	39.4	
		29.6	15.9	
2. SCIENCE		35	30	65
		53.8	46.2	19.8
		17.9	22.7	
		10.7	9.1	
3. PSYCHOLOGY		64	50	114
		56.1	43.9	34.8
		32.7	37.9	
		19.5	15.2	
COLUMN TOTAL		196	132	328
		59.8	40.2	100.0

CHI SQUARE = 3.33363 WITH 2 DEGREES OF FREEDOM SIGNIFICANCE = .1888

NUMBER OF MISSING OBSERVATIONS = 3

X49	COUNT / ROW PCT / COL PCT / TOT PCT	X49 NO (0.)	X49 YES (1.)	ROW TOTAL
SOCIAL STUDIES	1.	84	65	149
		56.4	43.6	45.4
		52.2	38.9	
		25.6	19.8	
SCIENCE	2.	33	32	65
		50.8	49.2	19.8
		20.5	19.2	
		10.1	9.8	
PSYCHOLOGY	3.	44	70	114
		38.6	61.4	34.8
		27.3	41.9	
		13.4	21.3	
COLUMN TOTAL		161	167	328
		49.1	50.9	100.0

CHI SQUARE = 8.26104 WITH 2 DEGREES OF FREEDOM SIGNIFICANCE = .0161

NUMBER OF MISSING OBSERVATIONS = 3

* * * * * * * * * * * * * * * * * C R O S S T A B U L A T I O N O F * * * * * * * * * * * * * * *
X104 AREA OF CERTIFICATION BY X50 LOVE
* PAGE 1 OF

X104 (COUNT / ROW PCT / COL PCT / TOT PCT)	X50: NO 0.	YES 1.	ROW TOTAL
1. SOCIAL STUDIES	88	61	149
	59.1	40.9	45.4
	49.7	40.4	
	26.8	18.6	
2. SCIENCE	34	31	65
	52.3	47.7	19.8
	19.2	20.5	
	10.4	9.5	
3. PSYCHOLOGY	55	59	114
	48.2	51.8	34.8
	31.1	39.1	
	16.8	18.0	
COLUMN TOTAL	177	151	328
	54.0	46.0	100.0

CHI SQUARE = 3.13012 WITH 2 DEGREES OF FREEDOM SIGNIFICANCE = .2091

NUMBER OF MISSING OBSERVATIONS = 3

CROSSTABULATION OF

X100 AREA OF CERTIFICATION BY X51 PARAPSYCHOLOGY

X100	X51	NO	YES	ROW TOTAL
		0.1	1.1	
SOCIAL STUDIES	1.	59	90	149
		39.6	60.4	45.4
		47.6	44.1	
		18.0	27.4	
SCIENCE	2.	24	41	65
		36.9	63.1	19.8
		19.4	20.1	
		7.3	12.5	
PSYCHOLOGY	3.	41	73	114
		36.0	64.0	34.8
		33.1	35.8	
		12.5	22.3	
COLUMN TOTAL		124	204	328
		37.8	62.2	100.0

CHI SQUARE = .34923 WITH 2 DEGREES OF FREEDOM SIGNIFICANCE = .8231

NUMBER OF MISSING OBSERVATIONS = 3

X104 AREA OF CERTIFICATION	COUNT / ROW PCT / COL PCT / TOT PCT	X52 NO (0.)	X52 YES (1.)	ROW TOTAL
1. SOCIAL STUDIES		33	116	149
		22.1	77.9	45.4
		49.3	44.4	
		10.1	35.4	
2. SCIENCE		18	47	65
		27.7	72.3	19.8
		26.9	18.0	
		5.5	14.3	
3. PSYCHOLOGY		16	98	114
		14.0	86.0	34.8
		23.9	37.5	
		4.9	29.9	
COLUMN TOTAL		67	261	328
		20.4	79.6	100.0

CHI SQUARE = 5.24772 WITH 2 DEGREES OF FREEDOM SIGNIFICANCE = .0725

NUMBER OF MISSING OBSERVATIONS = 3

X104	X53	YES	NO	ROW TOTAL
	COUNT	1.	2.	
SOCIAL STUDIES	1.	19	104	125
	ROW PCT	15.2	84.8	46.5
	COL PCT	44.2	46.9	
	TOT PCT	7.1	39.4	
SCIENCE	2.	6	44	50
	ROW PCT	12.0	88.0	18.6
	COL PCT	14.0	19.5	
	TOT PCT	2.2	16.4	
PSYCHOLOGY	3.	18	76	94
	ROW PCT	19.1	80.9	34.9
	COL PCT	41.9	33.6	
	TOT PCT	6.7	28.3	
	COLUMN TOTAL	43	226	269
		16.0	84.0	100.0

CHI SQUARE = 1.34925 WITH 2 DEGREES OF FREEDOM SIGNIFICANCE = .5093

NUMBER OF MISSING OBSERVATIONS = 42

CROSSTABULATION OF

X104	X54	0.	1.	ROW TOTAL
1. SOCIAL STUDIES	COUNT	97	52	149
	ROW PCT	65.1	34.9	45.4
	COL PCT	46.0	44.4	
	TOT PCT	29.6	15.9	
2. SCIENCE	COUNT	40	25	65
	ROW PCT	61.5	38.5	19.8
	COL PCT	19.0	21.4	
	TOT PCT	12.2	7.6	
3. PSYCHOLOGY	COUNT	74	40	114
	ROW PCT	64.9	35.1	34.8
	COL PCT	35.1	34.2	
	TOT PCT	22.6	12.2	
COLUMN TOTAL		211	117	328
		64.3	35.7	100.0

CHI SQUARE = .27615 WITH 2 DEGREES OF FREEDOM SIGNIFICANCE = .8710

NUMBER OF MISSING OBSERVATIONS = 3

X104 AREA OF CERTIFICATION BY X55 CROSSTABULATION OF UNDERSTANDING OURSELVES AND OTHERS

X104	COUNT / ROW PCT / COL PCT / TOT PCT	X55 NO (0.)	X55 YES (1.)	ROW TOTAL
1. SOCIAL STUDIES		129	20	149
		86.6	13.4	45.4
		44.8	50.0	
		39.3	6.1	
2. SCIENCE		55	10	65
		84.6	15.4	19.8
		19.1	25.0	
		16.8	3.0	
3. PSYCHOLOGY		104	10	114
		91.2	8.8	34.8
		36.1	25.0	
		31.7	3.0	
COLUMN TOTAL		288	40	328
		87.8	12.2	100.0

CHI SQUARE = 7.07482 WITH 2 DEGREES OF FREEDOM SIGNIFICANCE = .0544

NUMBER OF MISSING OBSERVATIONS = 3

CROSSTABULATION OF

X10	X56	0. NO	1. YES	ROW TOTAL
1. SOCIAL STUDIES	COUNT	117	32	149
	ROW PCT	78.5	21.5	45.4
	COL PCT	44.5	49.2	
	TOT PCT	35.7	9.8	
2. SCIENCE	COUNT	56	9	65
	ROW PCT	86.2	13.8	19.8
	COL PCT	21.3	13.8	
	TOT PCT	17.1	2.7	
3. PSYCHOLOGY	COUNT	90	24	114
	ROW PCT	78.9	21.1	34.8
	COL PCT	34.2	36.9	
	TOT PCT	27.4	7.3	
COLUMN TOTAL		263	65	328
		80.2	19.8	100.0

CHI SQUARE = 1.82613 WITH 2 DEGREES OF FREEDOM SIGNIFICANCE = .4013

NUMBER OF MISSING OBSERVATIONS = 3

X104	X57 NO (0.)	X57 YES (1.)	ROW TOTAL
1. SOCIAL STUDIES	139	10	149
	93.3	6.7	45.4
	44.8	55.6	
	42.4	3.0	
2. SCIENCE	62	3	65
	95.4	4.6	19.8
	20.0	16.7	
	18.9	.9	
3. PSYCHOLOGY	109	5	114
	95.6	4.4	34.8
	35.2	27.8	
	33.2	1.5	
COLUMN TOTAL	310	18	328
	94.5	5.5	100.0

CHI SQUARE = .77234 WITH 2 DEGREES OF FREEDOM SIGNIFICANCE = .6729

NUMBER OF MISSING OBSERVATIONS = 3

CROSSTABULATION OF

X104 AREA OF CERTIFICATION BY X58 PSYCHOLOGY MCKEACHIE AND DOYLE

X104	X58 COUNT / ROW PCT / COL PCT / TOT PCT	NO 0.	YES 1.	ROW TOTAL
SOCIAL STUDIES	1.	148	1	149
		99.3	.7	45.4
		45.4	50.0	
		45.1	.3	
SCIENCE	2.	65	0	65
		100.0	.0	19.8
		19.9	.0	
		19.8	.0	
PSYCHOLOGY	3.	113	1	114
		99.1	.9	34.8
		34.7	50.0	
		34.5	.3	
	COLUMN TOTAL	326	2	328
		99.4	.6	100.0

CHI SQUARE = .54258 WITH 2 DEGREES OF FREEDOM SIGNIFICANCE = .7624

NUMBER OF MISSING OBSERVATIONS = 3

* C R O S S T A B U L A T I O N O F * * * * * * * * * * * * * * * * * *

X105 AREA OF CERTIFICATION BY X59 INTR. TO THE BEHAVIORAL SCIENCES

* PAGE 1 OF

X105	COUNT / ROW PCT / COL PCT / TOT PCT	X59 NO 0.	YES 1.	ROW TOTAL
SOCIAL STUDIES	1.	145	4	149
		97.3	2.7	45.4
		45.2	57.1	
		44.2	1.2	
SCIENCE	2.	64	1	65
		98.5	1.5	19.8
		19.9	14.3	
		19.5	.3	
PSYCHOLOGY	3.	112	2	114
		98.2	1.8	34.8
		34.9	28.6	
		34.1	.6	
	COLUMN TOTAL	321	7	328
		97.9	2.1	100.0

CHI SQUARE = .40528 WITH 2 DEGREES OF FREEDOM SIGNIFICANCE = .8166

NUMBER OF MISSING OBSERVATIONS = 3

CROSSTABULATION OF

X1C1	X60		
COUNT / ROW PCT / COL PCT / TOT PCT	NO 0.	YES 1.	ROW TOTAL
1. SOCIAL STUDIES	141 / 94.6 / 45.0 / 43.0	8 / 5.4 / 53.3 / 2.4	149 / 45.4
2. SCIENCE	63 / 96.9 / 20.1 / 19.2	2 / 3.1 / 13.3 / .6	65 / 19.8
3. PSYCHOLOGY	109 / 95.6 / 34.8 / 33.2	5 / 4.4 / 33.3 / 1.5	114 / 34.8
COLUMN TOTAL	313 / 95.4	15 / 4.6	328 / 100.0

CHI SQUARE = .55892 WITH 2 DEGREES OF FREEDOM SIGNIFICANCE = .7562

NUMBER OF MISSING OBSERVATIONS = 3

AREA OF CERTIFICATION BY X61 PSYCHOLOGY FOR YOU PAGE 1 OF

X61			
COUNT / ROW PCT / COL PCT / TOT PCT	NO 0.	YES 1.	ROW TOTAL
1. SOCIAL STUDIES	133 / 89.3 / 43.8 / 40.5	16 / 10.7 / 66.7 / 4.9	149 / 45.4
2. SCIENCE	61 / 93.8 / 20.1 / 18.6	4 / 6.2 / 16.7 / 1.2	65 / 19.8
3. PSYCHOLOGY	110 / 96.5 / 36.2 / 33.5	4 / 3.5 / 16.7 / 1.2	114 / 34.8
COLUMN TOTAL	304 / 92.7	24 / 7.3	328 / 100.0

CHI SQUARE = 5.13726 WITH 2 DEGREES OF FREEDOM SIGNIFICANCE = .0766

NUMBER OF MISSING OBSERVATIONS = 3

VIEW	X62	NO	YES	ROW TOTAL
	COUNT / ROW PCT / COL PCT / TOT PCT	0.1	1.1	
AREA OF CERTIFICATION	1. SOCIAL STUDIES	144 / 96.6 / 46.2 / 43.9	5 / 3.4 / 31.3 / 1.5	149 / 45.4
	2. SCIENCE	60 / 92.3 / 19.2 / 18.3	5 / 7.7 / 31.3 / 1.5	65 / 19.8
	3. PSYCHOLOGY	108 / 94.7 / 34.6 / 32.9	6 / 5.3 / 37.5 / 1.8	114 / 34.8
	COLUMN TOTAL	312 / 95.1	16 / 4.9	328 / 100.0

CHI SQUARE = 1.89010 WITH 2 DEGREES OF FREEDOM SIGNIFICANCE = .3887

NUMBER OF MISSING OBSERVATIONS = 3

X104	X64 COUNT / ROW PCT / COL PCT / TOT PCT	1. NEVER USED	2. OCCASION	3. OFTEN	4. GREAT DEAL	ROW TOTAL
1. SOCIAL STUDIES		1 .7 16.7 .3	18 12.7 30.0 5.8	62 43.7 53.4 20.1	61 43.0 48.0 19.7	142 46.0
2. SCIENCE		3 4.9 50.0 1.0	17 27.9 28.3 5.5	21 34.4 18.1 6.8	20 32.8 15.7 6.5	61 19.7
3. PSYCHOLOGY		2 1.9 33.3 .6	25 23.6 41.7 8.1	33 31.1 28.4 10.7	46 43.4 36.2 14.9	106 34.3
COLUMN TOTAL		6 1.9	60 19.4	116 37.5	127 41.1	309 100.0

CHI SQUARE = 14.43541 WITH 6 DEGREES OF FREEDOM SIGNIFICANCE = .0251

NUMBER MISSING OBSERVATIONS = 22

CROSSTABULATION OF

X104 AREA OF CERTIFICATION BY X65 USED FOR RELEVANT READING MATERIAL

X104	X65 COUNT / ROW PCT / COL PCT / TOT PCT	0. NO	1. YES	ROW TOTAL
SOCIAL STUDIES	1.	139	10	149
		93.3	6.7	45.4
		45.3	47.6	
		42.4	3.0	
SCIENCE	2.	62	3	65
		95.4	4.6	19.8
		20.2	14.3	
		18.9	.9	
PSYCHOLOGY	3.	106	8	114
		93.0	7.0	34.8
		34.5	38.1	
		32.3	2.4	
COLUMN TOTAL		307	21	328
		93.6	6.4	100.0

CHI SQUARE = .44211 WITH 2 DEGREES OF FREEDOM SIGNIFICANCE = .8017

NUMBER OF MISSING OBSERVATIONS = 3

I09	COUNT / ROW PCT / COL PCT / TOT PCT	X67 NO (0.)	X67 YES (1.)	ROW TOTAL
1. SOCIAL STUDIES		120	29	149
		80.5	19.5	45.4
		43.3	56.9	
		36.6	8.8	
2. SCIENCE		59	6	65
		90.8	9.2	19.8
		21.3	11.8	
		18.0	1.8	
3. PSYCHOLOGY		98	16	114
		86.0	14.0	34.8
		35.4	31.4	
		29.9	4.9	
COLUMN TOTAL		277	51	328
		84.5	15.5	100.0

CHI SQUARE = 3.91343 WITH 2 DEGREES OF FREEDOM SIGNIFICANCE = .1413

NUMBER OF MISSING OBSERVATIONS = 3

CROSSTABULATION OF

X16A	X6A	NO	YES	ROW TOTAL
		0.	1.	
SOCIAL STUDIES	1.	44	105	149
		29.5	70.5	45.4
		43.6	46.3	
		13.4	32.0	
SCIENCE	2.	22	43	65
		33.8	66.2	19.8
		21.8	18.9	
		6.7	13.1	
PSYCHOLOGY	4.	35	79	114
		30.7	69.3	34.8
		34.7	34.8	
		10.7	24.1	
COLUMN TOTAL		101	227	328
		30.8	69.2	100.0

CHI SQUARE = .39626 WITH 2 DEGREES OF FREEDOM SIGNIFICANCE = .8203

NUMBER OF MISSING OBSERVATIONS = 3

X104	COUNT / ROW PCT / COL PCT / TOT PCT	X69 NO (0.)	X69 YES (1.)	ROW TOTAL
1. SOCIAL STUDIES		57	92	149
		38.3	61.7	45.4
		45.2	45.5	
		17.4	28.0	
2. SCIENCE		26	39	65
		40.0	60.0	19.8
		20.6	19.3	
		7.9	11.9	
3. PSYCHOLOGY		43	71	114
		37.7	62.3	34.8
		34.1	35.1	
		13.1	21.6	
COLUMN TOTAL		126	202	328
		38.4	61.6	100.0

CHI SQUARE = .09396 WITH 2 DEGREES OF FREEDOM SIGNIFICANCE = .9541

NUMBER OF MISSING OBSERVATIONS = 3

X104	COUNT / ROW PCT / COL PCT / TOT PCT	X70 NO (0.)	X70 YES (1.)	ROW TOTAL
1. SOCIAL STUDIES		64	85	149
		43.0	57.0	45.4
		43.8	46.7	
		19.5	25.9	
2. SCIENCE		36	29	65
		55.4	44.6	19.8
		24.7	15.9	
		11.0	8.8	
3. PSYCHOLOGY		46	68	114
		40.4	59.6	34.8
		31.5	37.4	
		14.0	20.7	
COLUMN TOTAL		146	182	328
		44.5	55.5	100.0

CHI SQUARE = 4.05684 WITH 2 DEGREES OF FREEDOM SIGNIFICANCE = .1315

NUMBER OF MISSING OBSERVATIONS = 3

X104 AREA OF CERTIFICATION BY X71 ASSIST STUDENTS IN PREPARING PAGE 10

X104	X71 COUNT / ROW PCT / COL PCT / TOT PCT	0. NO	1. YES	ROW TOTAL
1. SOCIAL STUDIES		60	89	149
		40.3	59.7	45.4
		44.1	46.4	
		18.3	27.1	
2. SCIENCE		28	37	65
		43.1	56.9	19.8
		20.6	19.3	
		8.5	11.3	
3. PSYCHOLOGY		48	66	114
		42.1	57.9	34.8
		35.3	34.4	
		14.6	20.1	
COLUMN TOTAL		136	192	328
		41.5	58.5	100.0

CHI SQUARE = .17673 WITH 2 DEGREES OF FREEDOM SIGNIFICANCE = .9154

NUMBER OF MISSING OBSERVATIONS = 3

X104 AREA OF CERTIFICATION CROSSTABULATION OF BY X72 ASSIST STUDENTS IN DEVELOPING

X104	COUNT / ROW PCT / COL PCT / TOT PCT	X72 NO (0.)	X72 YES (1.)	ROW TOTAL
1. SOCIAL STUDIES		61	88	149
		40.9	59.1	45.4
		47.7	44.0	
		18.6	26.8	
2. SCIENCE		23	42	65
		35.4	64.6	19.8
		18.0	21.0	
		7.0	12.8	
3. PSYCHOLOGY		44	70	114
		38.6	61.4	34.8
		34.4	35.0	
		13.4	21.3	
COLUMN TOTAL		128	200	328
		39.0	61.0	100.0

CHI SQUARE = .60034 WITH 2 DEGREES OF FREEDOM SIGNIFICANCE = .7407

NUMBER OF MISSING OBSERVATIONS = 3

CROSSTABULATION OF

X104	X73	NO	YES	ROW TOTAL
	COUNT			
	ROW PCT			
	COL PCT			
	TOT PCT	0.	1.	
1. SOCIAL STUDIES		33	116	149
		22.1	77.9	45.4
		50.0	44.3	
		10.1	35.4	
2. SCIENCE		7	58	65
		10.8	89.2	19.8
		10.6	22.1	
		2.1	17.7	
3. PSYCHOLOGY		26	88	114
		22.8	77.2	34.8
		39.4	33.6	
		7.9	26.8	
COLUMN TOTAL		66	262	328
		20.1	79.9	100.0

CHI SQUARE = 4.42921 WITH 2 DEGREES OF FREEDOM SIGNIFICANCE = .1092

NUMBER OF MISSING OBSERVATIONS = 3

1

CROSSTABULATION OF X104 AREA OF CERTIFICATION BY X74 ASSIST STUDENTS IN UNDERSTANDING THE VOC PAGE 1 OF

X104	COUNT / ROW PCT / COL PCT / TOT PCT	X74 NO (0.)	X74 YES (1.)	ROW TOTAL
1. SOCIAL STUDIES		47	102	149
		31.5	68.5	45.4
		44.3	45.9	
		14.3	31.1	
2. SCIENCE		24	41	65
		36.9	63.1	19.8
		22.6	18.5	
		7.3	12.5	
3. PSYCHOLOGY		35	79	114
		30.7	69.3	34.8
		33.0	35.6	
		10.7	24.1	
COLUMN TOTAL		106	222	328
		32.3	67.7	100.0

CHI SQUARE = .80719 WITH 2 DEGREES OF FREEDOM SIGNIFICANCE = .6679

NUMBER OF MISSING OBSERVATIONS = 3

AREA OF CERTIFICATION

X104	X75 NO (0.)	X75 YES (1.)	ROW TOTAL
1. SOCIAL STUDIES	35	114	149
	23.5	76.5	45.4
	48.6	44.5	
	10.7	34.8	
2. SCIENCE	7	58	65
	10.8	89.2	19.8
	9.7	22.7	
	2.1	17.7	
3. PSYCHOLOGY	30	84	114
	26.3	73.7	34.8
	41.7	32.8	
	9.1	25.6	
COLUMN TOTAL	72	256	328
	22.0	78.0	100.0

CHI SQUARE = 4.21726 WITH 2 DEGREES OF FREEDOM SIGNIFICANCE = .0447

NUMBER OF MISSING OBSERVATIONS = 3

CROSSTABULATION OF

X76

X104	COUNT / ROW PCT / COL PCT / TOT PCT	NO (0.)	YES (1.)	ROW TOTAL
1. SOCIAL STUDIES		14	135	149
		9.4	90.6	45.4
		33.3	47.2	
		4.3	41.2	
2. SCIENCE		8	57	65
		12.3	87.7	19.8
		19.0	19.9	
		2.4	17.4	
3. PSYCHOLOGY		20	94	114
		17.5	82.5	34.8
		47.6	32.9	
		6.1	28.7	
COLUMN TOTAL		42	286	328
		12.8	87.2	100.0

CHI SQUARE = 3.85818 WITH 2 DEGREES OF FREEDOM SIGNIFICANCE = .1453

NUMBER OF MISSING OBSERVATIONS = 3

CROSSTABULATION OF

X104	COUNT / ROW PCT / COL PCT / TOT PCT	X77 NO (0.)	X77 YES (1.)	ROW TOTAL
1. SOCIAL STUDIES		63	86	149
		42.3	57.7	45.4
		45.0	45.7	
		19.2	26.2	
2. SCIENCE		30	35	65
		46.2	53.8	19.8
		21.4	18.6	
		9.1	10.7	
3. PSYCHOLOGY		47	67	114
		41.2	58.8	34.8
		33.6	35.6	
		14.3	20.4	
COLUMN TOTAL		140	188	328
		42.7	57.3	100.0

CHI SQUARE = .42851 WITH 2 DEGREES OF FREEDOM SIGNIFICANCE = .8071

NUMBER OF MISSING OBSERVATIONS = 3

CROSSTABULATION OF

X78

X104	COUNT / ROW PCT / COL PCT / TOT PCT	NO (0.)	YES (1.)	ROW TOTAL
1. SOCIAL STUDIES		55	94	149
		36.9	63.1	45.4
		41.4	48.2	
		16.8	28.7	
2. SCIENCE		27	38	65
		41.5	58.5	19.8
		20.3	19.5	
		8.2	11.6	
3. PSYCHOLOGY		51	63	114
		44.7	55.3	34.8
		38.3	32.3	
		15.5	19.2	
COLUMN TOTAL		133	195	328
		40.5	59.5	100.0

CHI SQUARE = 1.67302 WITH 2 DEGREES OF FREEDOM SIGNIFICANCE = .4332

NUMBER OF MISSING OBSERVATIONS = 3

CROSSTABULATION OF

X10A AREA OF CERTIFICATION BY X80 INTELLIGENCE

X10A	COUNT / ROW PCT / COL PCT / TOT PCT	X80 NO 0.	X80 YES 1.	ROW TOTAL
1. SOCIAL STUDIES	COUNT	39	110	149
	ROW PCT	26.2	73.8	45.4
	COL PCT	50.6	43.8	
	TOT PCT	11.9	33.5	
2. SCIENCE	COUNT	14	51	65
	ROW PCT	21.5	78.5	19.8
	COL PCT	18.2	20.3	
	TOT PCT	4.3	15.5	
3. PSYCHOLOGY	COUNT	24	90	114
	ROW PCT	21.1	78.9	34.8
	COL PCT	31.2	35.9	
	TOT PCT	7.3	27.4	
COLUMN TOTAL		77	251	328
		23.5	76.5	100.0

CHI SQUARE = 1.11247 WITH 2 DEGREES OF FREEDOM SIGNIFICANCE = .5734

NUMBER OF MISSING OBSERVATIONS = 3

CROSSTABULATION OF

X10A	COUNT / ROW PCT / COL PCT / TOT PCT	X81 NO (0.)	X81 YES (1.)	ROW TOTAL
1. SOCIAL STUDIES		12	137	149
		8.1	91.9	45.4
		38.7	46.1	
		3.7	41.8	
2. SCIENCE		8	57	65
		12.3	87.7	19.8
		25.8	19.2	
		2.4	17.4	
3. PSYCHOLOGY		11	103	114
		9.6	90.4	34.8
		35.5	34.7	
		3.4	31.4	
COLUMN TOTAL		31	297	328
		9.5	90.5	100.0

CHI SQUARE = .96499 WITH 2 DEGREES OF FREEDOM SIGNIFICANCE = .6172

NUMBER OF MISSING OBSERVATIONS = 3

CROSSTABULATION OF

XB2

X104	COUNT / ROW PCT / COL PCT / TOT PCT	NO 0.1	YES 1.1	ROW TOTAL
1. SOCIAL STUDIES		73	76	149
		49.0	51.0	45.4
		46.5	44.4	
		22.3	23.2	
2. SCIENCE		32	33	65
		49.2	50.8	19.8
		20.4	19.3	
		9.8	10.1	
3. PSYCHOLOGY		52	62	114
		45.6	54.4	34.8
		33.1	36.3	
		15.9	18.9	
COLUMN TOTAL		157	171	328
		47.9	52.1	100.0

CHI SQUARE = .35607 WITH 2 DEGREES OF FREEDOM SIGNIFICANCE = .8369

NUMBER OF MISSING OBSERVATIONS = 3

X104 AREA OF CERTIFICATION	X83 MOTIVATION		ROW TOTAL
	0. NO	1. YES	
1. SOCIAL STUDIES	31 20.8 51.7 9.5	118 79.2 44.0 36.0	149 45.4
2. SCIENCE	14 21.5 23.3 4.3	51 78.5 19.0 15.5	65 19.8
3. PSYCHOLOGY	15 13.2 25.0 4.6	99 86.8 36.9 30.2	114 34.8
COLUMN TOTAL	60 18.3	268 81.7	328 100.0

CHI SQUARE = 3.09855 WITH 2 DEGREES OF FREEDOM SIGNIFICANCE = .2124

NUMBER OF MISSING OBSERVATIONS = 3

X104	X84 COUNT / ROW PCT / COL PCT / TOT PCT	NO 0.	YES 1.	ROW TOTAL
1. SOCIAL STUDIES		22	127	149
		14.8	85.2	45.4
		50.0	44.7	
		6.7	38.7	
2. SCIENCE		7	58	65
		10.8	89.2	19.8
		15.9	20.4	
		2.1	17.7	
3. PSYCHOLOGY		15	99	114
		13.2	86.8	34.8
		34.1	34.9	
		4.6	30.2	
COLUMN TOTAL		44	284	328
		13.4	86.6	100.0

CHI SQUARE = .63205 WITH 2 DEGREES OF FREEDOM SIGNIFICANCE = .7290

NUMBER OF MISSING OBSERVATIONS = 3

X104 AREA OF CERTIFICATION CROSSTABULATION OF BY X85 MENTAL ILLNESS PAGE 1 OF

X104	COUNT / ROW PCT / COL PCT / TOT PCT	X85 NO 0.	X85 YES 1.	ROW TOTAL
1. SOCIAL STUDIES		24	125	149
		16.1	83.9	45.4
		49.0	44.8	
		7.3	38.1	
2. SCIENCE		13	52	65
		20.0	80.0	19.8
		26.5	18.6	
		4.0	15.9	
3. PSYCHOLOGY		12	102	114
		10.5	89.5	34.8
		24.5	36.4	
		3.7	31.1	
COLUMN TOTAL		49	279	328
		14.9	85.1	100.0

CHI SQUARE = 3.21711 WITH 2 DEGREES OF FREEDOM SIGNIFICANCE = .2002

NUMBER OF MISSING OBSERVATIONS = 3

X104	COUNT / ROW PCT / COL PCT / TOT PCT	X86 NO (0.)	X86 YES (1.)	ROW TOTAL
1. SOCIAL STUDIES		27	122	149
		18.1	81.9	45.4
		50.0	44.5	
		8.2	37.2	
2. SCIENCE		15	50	65
		23.1	76.9	19.8
		27.8	18.2	
		4.6	15.2	
3. PSYCHOLOGY		12	102	114
		10.5	89.5	34.8
		22.2	37.2	
		3.7	31.1	
COLUMN TOTAL		54	274	328
		16.5	83.5	100.0

CHI SQUARE = 5.28664 WITH 2 DEGREES OF FREEDOM SIGNIFICANCE = .0711

NUMBER OF MISSING OBSERVATIONS = 3

X104	XB7	NO (0.)	YES (1.)	ROW TOTAL
SOCIAL STUDIES	1.	64	85	149
		43.0	57.0	45.4
		53.3	40.9	
		19.5	25.9	
SCIENCE	2.	28	37	65
		43.1	56.9	19.8
		23.3	17.8	
		8.5	11.3	
PSYCHOLOGY	3.	28	86	114
		24.6	75.4	34.8
		23.3	41.3	
		8.5	26.2	
COLUMN TOTAL		120	208	328
		36.6	63.4	100.0

CHI SQUARE = 10.88868 WITH 2 DEGREES OF FREEDOM SIGNIFICANCE = .0043

NUMBER OF MISSING OBSERVATIONS = 3

CROSSTABULATION OF

X104	COUNT / ROW PCT / COL PCT / TOT PCT	X88 NO (0.)	X88 YES (1.)	ROW TOTAL
1. SOCIAL STUDIES		113	36	149
		75.8	24.2	45.4
		46.7	41.9	
		34.5	11.0	
2. SCIENCE		47	18	65
		72.3	27.7	19.8
		19.4	20.9	
		14.3	5.5	
3. PSYCHOLOGY		82	32	114
		71.9	28.1	34.8
		33.9	37.2	
		25.0	9.8	
COLUMN TOTAL		242	86	328
		73.8	26.2	100.0

CHI SQUARE = .60108 WITH 2 DEGREES OF FREEDOM SIGNIFICANCE = .7404

NUMBER OF MISSING OBSERVATIONS = 3

X104	COUNT / ROW PCT / COL PCT / TOT PCT	X89 NO (0.)	X89 YES (1.)	ROW TOTAL
1. SOCIAL STUDIES		28	121	149
		18.8	81.2	45.4
		45.9	45.3	
		8.5	36.9	
2. SCIENCE		16	49	65
		24.6	75.4	19.8
		26.2	18.4	
		4.9	14.9	
3. PSYCHOLOGY		17	97	114
		14.9	85.1	34.8
		27.9	36.3	
		5.2	29.6	
COLUMN TOTAL		61	267	328
		18.6	81.4	100.0

CHI SQUARE = 2.58132 WITH 2 DEGREES OF FREEDOM SIGNIFICANCE = .2751

NUMBER OF MISSING OBSERVATIONS = 3

X104 AREA OF CERTIFICATION BY X90 THE HUMAN BODY PAGE 1 C

CROSSTABULATION OF

X104	X90 NO (0.)	X90 YES (1.)	ROW TOTAL
1. SOCIAL STUDIES	95	54	149
	63.8	36.2	45.4
	47.3	42.5	
	29.0	16.5	
2. SCIENCE	38	27	65
	58.5	41.5	19.8
	18.9	21.3	
	11.6	8.2	
3. PSYCHOLOGY	68	46	114
	59.6	40.4	34.8
	33.8	36.2	
	20.7	14.0	
COLUMN TOTAL	201	127	328
	61.3	38.7	100.0

CHI SQUARE = .73112 WITH 2 DEGREES OF FREEDOM SIGNIFICANCE = .6938

NUMBER OF MISSING OBSERVATIONS = 3

CROSSTABULATION OF

X104	X91	NO (0.)	YES (1.)	ROW TOTAL
1. SOCIAL STUDIES	COUNT	91	58	149
	ROW PCT	61.1	38.9	45.4
	COL PCT	51.7	38.2	
	TOT PCT	27.7	17.7	
2. SCIENCE	COUNT	33	32	65
	ROW PCT	50.8	49.2	19.8
	COL PCT	18.8	21.1	
	TOT PCT	10.1	9.8	
3. PSYCHOLOGY	COUNT	52	62	114
	ROW PCT	45.6	54.4	34.8
	COL PCT	29.5	40.8	
	TOT PCT	15.9	18.9	
COLUMN TOTAL		176	152	328
		53.7	46.3	100.0

CHI SQUARE = 6.47990 WITH 2 DEGREES OF FREEDOM SIGNIFICANCE = .0392

NUMBER OF MISSING OBSERVATIONS = 3

X104 AREA OF CERTIFICATION CROSSTABULATION OF BY X92 HUMAN GROWTH

X104	COUNT / ROW PCT / COL PCT / TOT PCT	X92 NO (0.)	X92 YES (1.)	ROW TOTAL
1. SOCIAL STUDIES		36	113	149
		24.2	75.8	45.4
		49.3	44.3	
		11.0	34.5	
2. SCIENCE		11	54	65
		16.9	83.1	19.8
		15.1	21.2	
		3.4	16.5	
3. PSYCHOLOGY		26	[illegible]	114
		22.8	[illegible]	34.8
		35.6	34.5	
		7.9	26.8	
COLUMN TOTAL		73	255	328
		22.3	77.7	100.0

CHI SQUARE = 1.40092 WITH 2 DEGREES OF FREEDOM SIGNIFICANCE = .4964

NUMBER OF MISSING OBSERVATIONS = 3

X104	COUNT / ROW PCT / COL PCT / TOT PCT	X93 NO (0.)	X93 YES (1.)	ROW TOTAL
1. SOCIAL STUDIES		33	116	149
		22.1	77.9	45.4
		47.8	44.8	
		10.1	35.4	
2. SCIENCE		12	53	65
		18.5	81.5	19.8
		17.4	20.5	
		3.7	16.2	
3. PSYCHOLOGY		24	90	114
		21.1	78.9	34.8
		34.8	34.7	
		7.3	27.4	
COLUMN TOTAL		69	259	328
		21.0	79.0	100.0

CHI SQUARE = .37021 WITH 2 DEGREES OF FREEDOM SIGNIFICANCE = .8310

NUMBER OF MISSING OBSERVATIONS = 3

X104	COUNT / ROW PCT / COL PCT / TOT PCT	X94 NO (0.)	X94 YES (1.)	ROW TOTAL
1. SOCIAL STUDIES		49	100	149
		32.9	67.1	45.4
		47.1	44.6	
		14.9	30.5	
2. SCIENCE		25	40	65
		38.5	61.5	19.8
		24.0	17.9	
		7.6	12.2	
3. PSYCHOLOGY		30	84	114
		26.3	73.7	34.8
		28.8	37.5	
		9.1	25.6	
COLUMN TOTAL		104	224	328
		31.7	68.3	100.0

CHI SQUARE = 2.99535 WITH 2 DEGREES OF FREEDOM SIGNIFICANCE = .2236

NUMBER OF MISSING OBSERVATIONS = 3

X104 AREA OF CERTIFICATION BY X95 SOCIAL BEHAVIOR

CROSSTABULATION OF

X104	COUNT / ROW PCT / COL PCT / TOT PCT	X95 NO (0.)	X95 YES (1.)	ROW TOTAL
1. SOCIAL STUDIES		38	111	149
		25.5	74.5	45.4
		50.0	44.0	
		11.6	33.8	
2. SCIENCE		14	51	65
		21.5	78.5	19.8
		18.4	20.2	
		4.3	15.5	
3. PSYCHOLOGY		24	90	114
		21.1	78.9	34.8
		31.6	35.7	
		7.3	27.4	
COLUMN TOTAL		76	252	328
		23.2	76.8	100.0

CHI SQUARE = .84000 WITH 2 DEGREES OF FREEDOM SIGNIFICANCE = .6570

NUMBER OF MISSING OBSERVATIONS = 3

X104	COUNT / ROW PCT / COL PCT / TOT PCT	X96 NO (0.)	X96 YES (1.)	ROW TOTAL
1. SOCIAL STUDIES		82	67	149
		55.0	45.0	45.4
		44.8	46.2	
		25.0	20.4	
2. SCIENCE		36	29	65
		55.4	44.6	19.8
		19.7	20.0	
		11.0	8.8	
3. PSYCHOLOGY		65	49	114
		57.0	43.0	34.8
		35.5	33.8	
		19.8	14.9	
COLUMN TOTAL		183	145	328
		55.8	44.2	100.0

CHI SQUARE = .10855 WITH 2 DEGREES OF FREEDOM SIGNIFICANCE = .9472

NUMBER OF MISSING OBSERVATIONS = 3

X104 AREA OF CERTIFICATION CROSSTABULATION OF BY X97 MARRIAGE ANDTHE FAMILY PAGE 1

X104	COUNT / ROW PCT / COL PCT / TOT PCT	X97 NO (0.)	X97 YES (1.)	ROW TOTAL
1. SOCIAL STUDIES		79	70	149
		53.0	47.0	45.4
		52.7	39.3	
		24.1	21.3	
2. SCIENCE		23	42	65
		35.4	64.6	19.8
		15.3	23.6	
		7.0	12.8	
3. PSYCHOLOGY		48	66	114
		42.1	57.9	34.8
		32.0	37.1	
		14.6	20.1	
COLUMN TOTAL		150	178	328
		45.7	54.3	100.0

CHI SQUARE = 6.59741 WITH 2 DEGREES OF FREEDOM SIGNIFICANCE = .0369

NUMBER OF MISSING OBSERVATIONS = 3

X104	COUNT / ROW PCT / COL PCT / TOT PCT	X98 NO 0.	YES 1.	ROW TOTAL
SOCIAL STUDIES	1.	76 51.0 51.0 23.2	73 49.0 40.8 22.3	149 45.4
SCIENCE	2.	29 44.6 19.5 8.8	36 55.4 20.1 11.0	65 19.8
PSYCHOLOGY	3.	44 38.6 29.5 13.4	70 61.4 39.1 21.3	114 34.8
COLUMN TOTAL		149 45.4	179 54.6	328 100.0

CHI SQUARE = 4.03392 WITH 2 DEGREES OF FREEDOM SIGNIFICANCE = .1331

NUMBER OF MISSING OBSERVATIONS = 3

CROSSTABULATION OF X104 AREA OF CERTIFICATION BY X99 LOVL

X104	X99	NO	YES	ROW TOTAL
	COUNT			
	ROW PCT			
	COL PCT			
	TOT PCT	.0	1.	
1. SOCIAL STUDIES		81	68	149
		54.4	45.6	45.4
		51.6	39.8	
		24.7	20.7	
2. SCIENCE		30	35	65
		46.2	53.8	19.8
		19.1	20.5	
		9.1	10.7	
3. PSYCHOLOGY		46	68	114
		40.4	59.6	34.8
		29.3	39.8	
		14.0	20.7	
COLUMN TOTAL		157	171	328
		47.9	52.1	100.0

CHI SQUARE = 5.17633 WITH 2 DEGREES OF FREEDOM SIGNIFICANCE = .0752

NUMBER OF MISSING OBSERVATIONS = 3

CROSSTABULATION OF

X104	X100	0. NO	1. YES	ROW TOTAL
1. SOCIAL STUDIES	COUNT	72	77	149
	ROW PCT	48.3	51.7	45.4
	COL PCT	47.1	44.0	
	TOT PCT	22.0	23.5	
2. SCIENCE	COUNT	36	29	65
	ROW PCT	55.4	44.6	19.8
	COL PCT	23.5	16.6	
	TOT PCT	11.0	8.8	
3. PSYCHOLOGY	COUNT	45	69	114
	ROW PCT	39.5	60.5	34.8
	COL PCT	29.4	39.4	
	TOT PCT	13.7	21.0	
COLUMN TOTAL		153	175	328
		46.6	53.4	100.0

CHI SQUARE = 4.51898 WITH 2 DEGREES OF FREEDOM SIGNIFICANCE = .1044

NUMBER OF MISSING OBSERVATIONS = 3

CROSSTABULATION OF

X104	X101 NO (0.)	X101 YES (1.)	ROW TOTAL
1. SOCIAL STUDIES	34	115	149
	22.8	77.2	45.4
	49.3	44.4	
	10.4	35.1	
2. SCIENCE	17	48	65
	26.2	73.8	19.8
	24.6	18.5	
	5.2	14.6	
3. PSYCHOLOGY	18	96	114
	15.8	84.2	34.8
	26.1	37.1	
	5.5	29.3	
COLUMN TOTAL	69	259	328
	21.0	79.0	100.0

CHI SQUARE = 3.19907 WITH 2 DEGREES OF FREEDOM SIGNIFICANCE = .2020

NUMBER OF MISSING OBSERVATIONS = 3

X104 TABLE OF CERTIFICATION BY X103 HIGHEST LEVEL OF COURSE TRAINING

X103

X104	COUNT / ROW PCT / COL PCT / TOT PCT	1. BACHELORS	2. POST-BAC HELORS	3. MASTER	4. POST-MAS TER	5. SPECIALIST	6. DOCTORATE	ROW TOTAL
1. SOCIAL STUDIES		24	26	42	49	2	5	148
		16.2	17.6	28.4	33.1	1.4	3.4	45.3
		43.6	57.8	39.3	45.8	50.0	55.6	
		7.3	8.0	12.8	15.0	.6	1.5	
2. SCIENCE		1	2	34	27	0	1	65
		1.5	3.1	52.3	41.5	.0	1.5	19.9
		1.8	4.4	31.8	25.2	.0	11.1	
		.3	.6	10.4	8.3	.0	.3	
3. PSYCHOLOGY		30	17	31	31	2	3	114
		26.3	14.9	27.2	27.2	1.8	2.6	34.9
		54.5	37.8	29.0	29.0	50.0	33.3	
		9.2	5.2	9.5	9.5	.6	.9	
COLUMN TOTAL		55	45	107	107	4	9	327
		16.8	13.8	32.7	32.7	1.2	2.8	100.0

CHI SQUARE = 34.02504 WITH 10 DEGREES OF FREEDOM SIGNIFICANCE = .0001

NUMBER OF MISSING OBSERVATIONS = 4

X104	COUNT / ROW PCT / COL PCT / TOT PCT	X106 YES (1.)	X106 NO (2.)	ROW TOTAL
1. SOCIAL STUDIES		127	22	149
		85.2	14.8	45.4
		43.8	57.9	
		38.7	6.7	
2. SCIENCE		59	6	65
		90.8	9.2	19.8
		20.3	15.8	
		18.0	1.8	
3. PSYCHOLOGY		104	10	114
		91.2	8.8	34.8
		35.9	26.3	
		31.7	3.0	
COLUMN TOTAL		290	38	328
		88.4	11.6	100.0

CHI SQUARE = 2.70348 WITH 2 DEGREES OF FREEDOM SIGNIFICANCE = .2588

NUMBER OF MISSING OBSERVATIONS = 3

X104	COUNT / ROW PCT / COL PCT / TOT PCT	X107 YES (1.)	X107 NO (2.)	ROW TOTAL
1. SOCIAL STUDIES	COUNT	117	31	148
	ROW PCT	79.1	20.9	45.5
	COL PCT	44.8	48.4	
	TOT PCT	36.0	9.5	
2. SCIENCE	COUNT	52	13	65
	ROW PCT	80.0	20.0	20.0
	COL PCT	19.9	20.3	
	TOT PCT	16.0	4.0	
3. PSYCHOLOGY	COUNT	92	20	112
	ROW PCT	82.1	17.9	34.5
	COL PCT	35.2	31.3	
	TOT PCT	28.3	6.2	
COLUMN TOTAL	COUNT	261	64	325
	PCT	80.3	19.7	100.0

CHI SQUARE = .38949 WITH 2 DEGREES OF FREEDOM SIGNIFICANCE = .8230

NUMBER OF MISSING OBSERVATIONS = 6

X104	COUNT / ROW PCT / COL PCT / TOT PCT	X106 YES (1.)	X106 NO (2.)	ROW TOTAL
1. SOCIAL STUDIES		145	4	149
		97.3	2.7	45.8
		45.7	50.0	
		44.6	1.2	
2. SCIENCE		63	1	64
		98.4	1.6	19.7
		19.9	12.5	
		19.4	.3	
3. PSYCHOLOGY		109	3	112
		97.3	2.7	34.5
		34.4	37.5	
		33.5	.9	
COLUMN TOTAL		317	8	325
		97.5	2.5	100.0

CHI SQUARE = .26829 WITH 2 DEGREES OF FREEDOM SIGNIFICANCE = .8745

NUMBER OF MISSING OBSERVATIONS = 6

X109	COUNT / ROW PCT / COL PCT / TOT PCT	X109 1.0 YES	X109 2.0 NO	X109 3.0 POSSIBLY	ROW TOTAL
1. SOCIAL STUDIES		88	47	9	144
		61.1	32.6	6.3	45.6
		50.3	39.2	42.9	
		27.8	14.9	2.8	
2. SCIENCE		32	26	4	62
		51.6	41.9	6.5	19.6
		18.3	21.7	19.0	
		10.1	8.2	1.3	
3. PSYCHOLOGY		55	47	8	110
		50.0	42.7	7.3	34.8
		31.4	39.2	38.1	
		17.4	14.9	2.5	
COLUMN TOTAL		175	120	21	316
		55.4	38.0	6.6	100.0

CHI SQUARE = 3.68039 WITH 4 DEGREES OF FREEDOM SIGNIFICANCE = .4510

NUMBER OF MISSING OBSERVATIONS = 15

CROSSTABULATION OF

X104	X110 COUNT / ROW PCT / COL PCT / TOT PCT	YES 1.	NO 2.	NOT SURE 3.	ROW TOTAL
SOCIAL STUDIES	1.	138	7	2	147
		93.9	4.8	1.4	46.5
		48.8	24.1	50.0	
		43.7	2.2	.6	
SCIENCE	2.	47	11	1	59
		79.7	18.6	1.7	18.7
		16.6	37.9	25.0	
		14.9	3.5	.3	
PSYCHOLOGY	3.	98	11	1	110
		89.1	10.0	.9	34.8
		34.6	37.9	25.0	
		31.0	3.5	.3	
COLUMN TOTAL		283	29	4	316
		89.6	9.2	1.3	100.0

CHI SQUARE = 10.12662 WITH 4 DEGREES OF FREEDOM SIGNIFICANCE = .0383

NUMBER OF MISSING OBSERVATIONS = 15

X104	COUNT / ROW PCT / COL PCT / TOT PCT	X120 NO (0.)	X120 YES (1.)	ROW TOTAL
1. SOCIAL STUDIES		110	39	149
		73.8	26.2	45.4
		45.8	44.3	
		33.5	11.9	
2. SCIENCE		48	17	65
		73.8	26.2	19.8
		20.0	19.3	
		14.6	5.2	
3. PSYCHOLOGY		82	32	114
		71.9	28.1	34.8
		34.2	36.4	
		25.0	9.8	
COLUMN TOTAL		240	88	328
		73.2	26.8	100.0

CHI SQUARE = .13707 WITH 2 DEGREES OF FREEDOM SIGNIFICANCE = .9338

NUMBER OF MISSING OBSERVATIONS = 3

X104 AREA OF CERTIFICATION — CROSSTABULATION OF — BY X121 OVERHEAD TRANSPARENCIES — PAGE 10

X104	X121 NO (0.)	X121 YES (1.)	ROW TOTAL
1. SOCIAL STUDIES	101	48	149
	67.8	32.2	45.4
	45.3	45.7	
	30.8	14.6	
2. SCIENCE	43	22	65
	66.2	33.8	19.8
	19.3	21.0	
	13.1	6.7	
3. PSYCHOLOGY	79	35	114
	69.3	30.7	34.8
	35.4	33.3	
	24.1	10.7	
COLUMN TOTAL	223	105	328
	68.0	32.0	100.0

CHI SQUARE = .19321 WITH 2 DEGREES OF FREEDOM SIGNIFICANCE = .9079

NUMBER OF MISSING OBSERVATIONS = 3

X104	COUNT / ROW PCT / COL PCT / TOT PCT	X122 NO (0.)	X122 YES (1.)	ROW TOTAL
1. SOCIAL STUDIES		113	36	149
		75.8	24.2	45.4
		46.3	42.9	
		34.5	11.0	
2. SCIENCE		51	14	65
		78.5	21.5	19.8
		20.9	16.7	
		15.5	4.3	
3. PSYCHOLOGY		80	34	114
		70.2	29.8	34.8
		32.8	40.5	
		24.4	10.4	
COLUMN TOTAL		244	84	328
		74.4	25.6	100.0

CHI SQUARE = 1.77268 WITH 2 DEGREES OF FREEDOM SIGNIFICANCE = .4081

NUMBER OF MISSING OBSERVATIONS = 3

CROSSTABULATION OF

X123

X104	COUNT / ROW PCT / COL PCT / TOT PCT	NO 0.	YES 1.	ROW TOTAL
1. SOCIAL STUDIES		123	26	149
		82.6	17.4	45.4
		45.6	44.8	
		37.5	7.9	
2. SCIENCE		58	7	65
		89.2	10.8	19.8
		21.5	12.1	
		17.7	2.1	
3. PSYCHOLOGY		89	25	114
		78.1	21.9	34.8
		33.0	43.1	
		27.1	7.6	
COLUMN TOTAL		270	58	328
		82.3	17.7	100.0

CHI SQUARE = 3.65259 WITH 2 DEGREES OF FREEDOM SIGNIFICANCE = .1693

NUMBER OF MISSING OBSERVATIONS = 3

X104	X124 NO	X124 YES	ROW TOTAL
	0.	1.	
1. SOCIAL STUDIES	43	106	149
	28.9	71.1	45.4
	43.4	46.3	
	13.1	32.3	
2. SCIENCE	16	49	65
	24.6	75.4	19.8
	16.2	21.4	
	4.9	14.9	
3. PSYCHOLOGY	40	74	114
	35.1	64.9	34.8
	40.4	32.3	
	12.2	22.6	
COLUMN TOTAL	99	229	328
	30.2	69.8	100.0

CHI SQUARE = 2.38149 WITH 2 DEGREES OF FREEDOM SIGNIFICANCE = .3040

NUMBER OF MISSING OBSERVATIONS = 3

CROSSTABULATION OF

X125

X124	COUNT / ROW PCT / COL PCT / TOT PCT	NO (0.)	YES (1.)	ROW TOTAL
1. SOCIAL STUDIES		114	35	149
		76.5	23.5	46.4
		45.8	44.3	
		34.8	10.7	
2. SCIENCE		51	14	65
		78.5	21.5	19.8
		20.5	17.7	
		15.5	4.3	
3. PSYCHOLOGY		84	30	114
		73.7	26.3	34.8
		33.7	38.0	
		25.6	9.1	
COLUMN TOTAL		249	79	328
		75.9	24.1	100.0

CHI SQUARE = .56966 WITH 2 DEGREES OF FREEDOM SIGNIFICANCE = .7521

NUMBER OF MISSING OBSERVATIONS = 3

X126

X104	COUNT / ROW PCT / COL PCT / TOT PCT	NO (0.)	YES (1.)	ROW TOTAL
1. SOCIAL STUDIES		117	32	149
		78.5	21.5	45.4
		46.8	41.0	
		35.7	9.8	
2. SCIENCE		53	12	65
		81.5	18.5	19.8
		21.2	15.4	
		16.2	3.7	
3. PSYCHOLOGY		80	34	114
		70.2	29.8	34.8
		32.0	43.6	
		24.4	10.4	
COLUMN TOTAL		250	78	328
		76.2	23.8	100.0

CHI SQUARE = 3.74855 WITH 2 DEGREES OF FREEDOM SIGNIFICANCE = .1535

NUMBER OF MISSING OBSERVATIONS = 3

X104	COUNT / ROW PCT / COL PCT / TOT PCT	X127 NO 0.	X127 YES 1.	ROW TOTAL
1. SOCIAL STUDIES		99	50	149
		66.4	33.6	45.4
		44.8	46.7	
		30.2	15.2	
2. SCIENCE		53	12	65
		81.5	18.5	19.8
		24.0	11.2	
		16.2	3.7	
3. PSYCHOLOGY		69	45	114
		60.5	39.5	34.8
		31.2	42.1	
		21.0	13.7	
COLUMN TOTAL		221	107	328
		67.4	32.6	100.0

CHI SQUARE = 8.42391 WITH 2 DEGREES OF FREEDOM SIGNIFICANCE = .0148

NUMBER OF MISSING OBSERVATIONS = 3

CROSSTABULATION OF

	X128		
COUNT / ROW PCT / COL PCT / TOT PCT	NO 0.	YES 1.	ROW TOTAL
1. SOCIAL STUDIES	67 / 45.0 / 47.2 / 20.4	82 / 55.0 / 44.1 / 25.0	149 / 45.4
2. SCIENCE	34 / 52.3 / 23.9 / 10.4	31 / 47.7 / 16.7 / 9.5	65 / 19.8
3. PSYCHOLOGY	41 / 36.0 / 28.9 / 12.5	73 / 64.0 / 39.2 / 22.3	114 / 34.8
COLUMN TOTAL	142 / 43.3	186 / 56.7	328 / 100.0

SQUARE = 4.81579 WITH 2 DEGREES OF FREEDOM SIGNIFICANCE = .0900

BER OF MISSING OBSERVATIONS = 3

X104 AREA OF CERTIFICATION — CROSSTABULATION OF — BY X129 FILMSTRIPS — PAGE 1 O

X104	COUNT / ROW PCT / COL PCT / TOT PCT	X129 NO (0.)	X129 YES (1.)	ROW TOTAL
1. SOCIAL STUDIES		96	53	149
		64.4	35.6	45.4
		45.9	44.5	
		29.3	16.2	
2. SCIENCE		44	21	65
		67.7	32.3	19.8
		21.1	17.6	
		13.4	6.4	
3. PSYCHOLOGY		69	45	114
		60.5	39.5	34.8
		33.0	37.8	
		21.0	13.7	
COLUMN TOTAL		209	119	328
		63.7	36.3	100.0

CHI SQUARE = .97908 WITH 2 DEGREES OF FREEDOM SIGNIFICANCE = .6129

NUMBER OF MISSING OBSERVATIONS = 3

X104 STATE OF CERTIFICATION BY X130 CROSSTABULATION OF SIMULATION GAMES

X104	COUNT / ROW PCT / COL PCT / TOT PCT	X130 NO 0.	X130 YES 1.	ROW TOTAL
1. SOCIAL STUDIES		69	80	149
		46.3	53.7	45.4
		55.6	39.2	
		21.0	24.4	
2. SCIENCE		21	44	65
		32.3	67.7	19.8
		16.9	21.6	
		6.4	13.4	
3. PSYCHOLOGY		34	80	114
		29.8	70.2	34.8
		27.4	39.2	
		10.4	24.4	
COLUMN TOTAL		124	204	328
		37.8	62.2	100.0

CHI SQUARE = 8.50574 WITH 2 DEGREES OF FREEDOM SIGNIFICANCE = .0142

NUMBER OF MISSING OBSERVATIONS = 3

CROSSTABULATION OF

X104	X131	NO (0.)	YES (1.)	ROW TOTAL
SOCIAL STUDIES	1.	115	34	149
		77.2	22.8	45.4
		45.1	46.6	
		35.1	10.4	
SCIENCE	2.	54	11	65
		83.1	16.9	19.8
		21.2	15.1	
		16.5	3.4	
PSYCHOLOGY	3.	86	28	114
		75.4	24.6	34.8
		33.7	38.4	
		26.2	8.5	
COLUMN TOTAL		255	73	328
		77.7	22.3	100.0

CHI SQUARE = 1.44584 WITH 2 DEGREES OF FREEDOM SIGNIFICANCE = .4853

NUMBER OF MISSING OBSERVATIONS = 3

X132

X1C1	COUNT / ROW PCT / COL PCT / TOT PCT	NO 0.	YES 1.	ROW TOTAL
SOCIAL STUDIES	1.	107	42	149
		71.8	28.2	45.4
		49.5	37.5	
		32.6	12.8	
SCIENCE	2.	36	29	65
		55.4	44.6	19.8
		16.7	25.9	
		11.0	8.8	
PSYCHOLOGY	3.	73	41	114
		64.0	36.0	34.8
		33.8	36.6	
		22.3	12.5	
	COLUMN TOTAL	216	112	328
		65.9	34.1	100.0

CHI SQUARE = 5.48827 WITH 2 DEGREES OF FREEDOM SIGNIFICANCE = .0582

NUMBER OF MISSING OBSERVATIONS = 3

X104	X133 NO (0.)	X133 YES (1.)	ROW TOTAL
1. SOCIAL STUDIES	94	55	149
	63.1	36.9	45.4
	44.3	47.4	
	28.7	16.8	
2. SCIENCE	43	22	65
	66.2	33.8	19.8
	20.3	19.0	
	13.1	6.7	
3. PSYCHOLOGY	75	39	114
	65.8	34.2	34.8
	35.4	33.6	
	22.9	11.9	
COLUMN TOTAL	212	116	328
	64.6	35.4	100.0

CHI SQUARE = .20822 WITH 2 DEGREES OF FREEDOM SIGNIFICANCE = .8658

NUMBER OF MISSING OBSERVATIONS = 3

X104	COUNT / ROW PCT / COL PCT / TOT PCT	X134 NO 0.	YES 1.	ROW TOTAL
SOCIAL STUDIES	1.	55 36.9 44.4 16.8	94 63.1 46.1 28.7	149 45.4
SCIENCE	2.	29 44.6 23.4 8.8	36 55.4 17.6 11.0	65 19.8
PSYCHOLOGY	3.	40 35.1 32.3 12.2	74 64.9 36.3 22.6	114 34.8
	COLUMN TOTAL	124 37.8	204 62.2	328 100.0

CHI SQUARE = 1.69063 WITH 2 DEGREES OF FREEDOM SIGNIFICANCE = .4294

NUMBER OF MISSING OBSERVATIONS = 3

X104 AREA OF CERTIFICATION CROSSTABULATION OF BY X135 ACURRICULUM GUIDE PAGE 1

X104	COUNT / ROW PCT / COL PCT / TOT PCT	X135 NO 0.	X135 YES 1.	ROW TOTAL
1. SOCIAL STUDIES		123	26	149
		82.6	17.4	45.4
		44.4	51.0	
		37.5	7.9	
2. SCIENCE		58	7	65
		89.2	10.8	19.8
		20.9	13.7	
		17.7	2.1	
3. PSYCHOLOGY		96	18	114
		84.2	15.8	34.8
		34.7	35.3	
		29.3	5.5	
COLUMN TOTAL		277	51	328
		84.5	15.5	100.0

CHI SQUARE = 1.54584 WITH 2 DEGREES OF FREEDOM SIGNIFICANCE = .4617

NUMBER OF MISSING OBSERVATIONS = 3

X104	COUNT / ROW PCT / COL PCT / TOT PCT	X136 NO (0.)	X136 YES (1.)	ROW TOTAL
1. SOCIAL STUDIES		68	81	149
		45.6	54.4	45.4
		44.2	46.6	
		20.7	24.7	
2. SCIENCE		36	29	65
		55.4	44.6	19.8
		23.4	16.7	
		11.0	8.8	
3. PSYCHOLOGY		50	64	114
		43.9	56.1	34.8
		32.5	36.8	
		15.2	19.5	
COLUMN TOTAL		154	174	328
		47.0	53.0	100.0

CHI SQUARE = 2.39677 WITH 2 DEGREES OF FREEDOM SIGNIFICANCE = .3017

NUMBER OF MISSING OBSERVATIONS = 3

CROSSTABULATION OF

X104	X139 COUNT / ROW PCT / COL PCT / TOT PCT	1. YES	2. NO	ROW TOTAL
1. SOCIAL STUDIES		48	94	142
		33.8	66.2	45.5
		48.5	44.1	
		15.4	30.1	
2. SCIENCE		16	45	61
		26.2	73.8	19.6
		16.2	21.1	
		5.1	14.4	
3. PSYCHOLOGY		35	74	109
		32.1	67.9	34.9
		35.4	34.7	
		11.2	23.7	
COLUMN TOTAL		99	213	312
		31.7	68.3	100.0

CHI SQUARE = 1.14089 WITH 2 DEGREES OF FREEDOM SIGNIFICANCE = .5653

NUMBER OF MISSING OBSERVATIONS = 19

X140

X104	COUNT / ROW PCT / COL PCT / TOT PCT	1. YES	2. NO	3. NO BUT L IKE TO R	ROW TOTAL
1. SOCIAL STUDIES		37	15	91	143
		25.9	10.5	63.6	45.3
		38.9	33.3	51.7	
		11.7	4.7	28.8	
2. SCIENCE		20	13	29	62
		32.3	21.0	46.8	19.6
		21.1	28.9	16.5	
		6.3	4.1	9.2	
3. PSYCHOLOGY		38	17	56	111
		34.2	15.3	50.5	35.1
		40.0	37.8	31.8	
		12.0	5.4	17.7	
COLUMN TOTAL		95	45	176	316
		30.1	14.2	55.7	100.0

CHI SQUARE = 8.10291 WITH 4 DEGREES OF FREEDOM SIGNIFICANCE = .0879

NUMBER OF MISSING OBSERVATIONS = 15

CROSSTABULATION OF

X104	COUNT / ROW PCT / COL PCT / TOT PCT	X141 YES (1.)	X141 NO (2.)	ROW TOTAL
1. SOCIAL STUDIES		35	106	141
		24.8	75.2	45.6
		77.8	40.2	
		11.3	34.3	
2. SCIENCE		0	61	61
		.0	100.0	19.7
		.0	23.1	
		.0	19.7	
3. PSYCHOLOGY		10	97	107
		9.3	90.7	34.6
		22.2	36.7	
		3.2	31.4	
COLUMN TOTAL		45	264	309
		14.6	85.4	100.0

CHI SQUARE = 24.66693 WITH 2 DEGREES OF FREEDOM SIGNIFICANCE = .0000

NUMBER OF MISSING OBSERVATIONS = 92

- O N E W A Y -

VARIABLE X23 No. OF SECTIONS

ANALYSIS OF VARIANCE

SOURCE	D.F.	SUM OF SQUARES	MEAN SQUARES	F RATIO	F PROB.
BETWEEN GROUPS	2	37.3336	18.6668	11.894	.000
WITHIN GROUPS	319	500.6540	1.5694		
TOTAL	321	537.9876			

GROUP	COUNT	MEAN	STANDARD DEVIATION	STANDARD ERROR	MINIMUM	MAXIMUM
GRP01	147	2.3129	1.2864	.1061	1.0000	6.0000
GRP02	64	1.4531	.7757	.0969	1.0000	4.0000
GRP03	111	2.2973	1.4180	.1346	1.0000	7.0000
TOTAL	322	2.1366	1.2946	.0721	1.0000	7.0000
FIXED EFFECTS MODEL			1.2528	.0698		
RANDOM EFFECTS MODEL			.5119	.2955		

TESTS FOR HOMOGENEITY OF VARIANCES

COCHRANS C = MAX. VARIANCE/SUM(VARIANCES) = .4713, P = .000 (APPROX.)
BARTLETT-BOX F = 12.683, P = .000
MAXIMUM VARIANCE / MINIMUM VARIANCE = 3.346

- O N E W A Y -

VARIABLE X26 NO. OF STUDENTS TOOK PSYCHOLOGY

ANALYSIS OF VARIANCE

SOURCE	D.F.	SUM OF SQUARES	MEAN SQUARES	F RATIO	F PROB.
BETWEEN GROUPS	2	157181.0000	78590.5000	8.100	.000
WITHIN GROUPS	299	2901117.7500	9702.7349		
TOTAL	301	3058298.7500			

GROUP	COUNT	MEAN	STANDARD DEVIATION	STANDARD ERROR	MINIMUM	MAXIMUM
GRP01	135	117.9481	102.3453	8.8085	10.0000	500.0000
GRP02	60	57.5833	64.4500	8.3205	8.0000	360.0000
GRP03	107	108.5514	108.6995	10.5084	6.0000	581.0000
TOTAL	302	102.6258	100.7991	5.8003	6.0000	581.0000
	FIXED EFFECTS MODEL		98.5025	5.6682		
	RANDOM EFFECTS MODEL		33.9022	19.5734		

TESTS FOR HOMOGENEITY OF VARIANCES

COCHRANS C = MAX. VARIANCE/SUM(VARIANCES) = .4468, P = .004 (APPROX.)
BARTLETT-BOX F = 9.411, P = .000
MAXIMUM VARIANCE / MINIMUM VARIANCE = 2.845

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ONEWAY

VARIABLE X27 NO. OF STUDENTS CURRENTLY ENROLLED

ANALYSIS OF VARIANCE

SOURCE	D.F.	SUM OF SQUARES	MEAN SQUARES	F RATIO	F PROB.
BETWEEN GROUPS	2	166326.1250	83163.0625	7.936	.001
WITHIN GROUPS	322	3374507.1875	10479.8359		
TOTAL	324	3540833.3125			

GROUP	COUNT	MEAN	STANDARD DEVIATION	STANDARD ERROR	MINIMUM	MAXIMUM
GRP01	147	111.3673	103.0341	8.4981	6.0000	600.0000
GRP02	65	54.2769	54.8633	6.8050	4.0000	240.0000
GRP03	113	110.0973	120.7095	11.3554	3.0000	622.0000
TOTAL	325	99.5077	104.5395	5.7988	3.0000	622.0000
	FIXED EFFECTS MODEL		102.3711	5.6785		
	RANDOM EFFECTS MODEL		33.9014	19.5730		

TESTS FOR HOMOGENEITY OF VARIANCES

COCHRAN'S C = MAX. VARIANCE/SUM(VARIANCES) = .5168, P = .000 (APPROX.)
BARTLETT-BOX F = 20.430, P = .000
MAXIMUM VARIANCE / MINIMUM VARIANCE = 4.841

ONEWAY

VARIABLE X105 HOURS OF COLLEGE COURSE CREDIT

ANALYSIS OF VARIANCE

SOURCE	D.F.	SUM OF SQUARES	MEAN SQUARES	F RATIO	F PROB.
BETWEEN GROUPS	2	5048.7383	2524.3691	9.871	.000
WITHIN GROUPS	316	80809.0195	255.7247		
TOTAL	318	85857.7578			

GROUP	COUNT	MEAN	STANDARD DEVIATION	STANDARD ERROR	MINIMUM	MAXIMUM
GRP01	144	24.8194	14.8483	1.2374	.0000	95.0000
GRP02	63	32.6349	15.8718	1.9997	8.0000	98.0000
GRP03	112	32.9107	17.4147	1.6455	.0000	99.0000
TOTAL	319	29.2038	16.4315	.9200	.0000	99.0000
	FIXED EFFECTS MODEL		15.9914	.8953		
	RANDOM EFFECTS MODEL		4.7295	2.7306		

TESTS FOR HOMOGENEITY OF VARIANCES

COCHRANS C = MAX. VARIANCE/SUM(VARIANCES) = .3910, P = .130 (APPROX.)
BARTLETT-BOX F = 1.600, P = .200
MAXIMUM VARIANCE / MINIMUM VARIANCE = 1.376

VARIABLE XIII TEXT AND LECTURE

ANALYSIS OF VARIANCE

SOURCE	D.F.	SUM OF SQUARES	MEAN SQUARES	F RATIO	F PROB.
BETWEEN GROUPS	2	2.6344	1.3172	1.384	.251
WITHIN GROUPS	295	280.8019	.9519		
TOTAL	297	283.4363			

GROUP	COUNT	MEAN	STANDARD DEVIATION	STANDARD ERROR	MINIMUM	MAXIMUM
GRP01	136	3.7721	1.0035	.0860	1.0000	5.0000
GRP02	55	3.5273	.8997	.1213	2.0000	5.0000
GRP03	107	3.7664	.9769	.0944	1.0000	5.0000
TOTAL	298	3.7248	.9769	.0566	1.0000	5.0000
FIXED EFFECTS MODEL			.9756	.0565		
RANDOM EFFECTS MODEL			.1466	.0846		

TESTS FOR HOMOGENEITY OF VARIANCES

COCHRANS C = MAX. VARIANCE/SUM(VARIANCES) = .3634, P = .435 (APPROX.)
BARTLETT-BOX F = .443, P = .648
MAXIMUM VARIANCE / MINIMUM VARIANCE = 1.244

- O N E W A Y -

VARIABLE X112 LECTURE

ANALYSIS OF VARIANCE

SOURCE	D.F.	SUM OF SQUARES	MEAN SQUARES	F RATIO	F PROB.
BETWEEN GROUPS	2	.1846	.0923	.103	.897
WITHIN GROUPS	285	256.5342	.9001		
TOTAL	287	256.7188			

GROUP	COUNT	MEAN	STANDARD DEVIATION	STANDARD ERROR	MINIMUM	MAXIMUM
GRP01	135	3.7037	.9469	.0815	2.0000	5.0000
GRP02	57	3.7368	.8562	.1134	1.0000	5.0000
GRP03	96	3.6667	1.0018	.1022	1.0000	5.0000
TOTAL	288	3.6979	.9458	.0557	1.0000	5.0000
	FIXED EFFECTS MODEL		.9487	.0559		
	RANDOM EFFECTS MODEL		.0355	.0205		

TESTS FOR HOMOGENEITY OF VARIANCES

COCHRANS C = MAX. VARIANCE/SUM(VARIANCES) = .3811, P = .229 (APPROX.)
BARTLETT-BOX F = .839, P = .435
MAXIMUM VARIANCE / MINIMUM VARIANCE = 1.369

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VARIABLE A113 TEACHER DEMONSTRATIONS

ANALYSIS OF VARIANCE

SOURCE	D.F.	SUM OF SQUARES	MEAN SQUARES	F RATIO	F PROB.
BETWEEN GROUPS	2	.6706	.3353	.493	.611
WITHIN GROUPS	201	191.1991	.6804		
TOTAL	203	191.8698			

GROUP	COUNT	MEAN	STANDARD DEVIATION	STANDARD ERROR	MINIMUM	MAXIMUM
GRP01	132	3.1591	.8365	.0728	1.0000	5.0000
GRP02	52	3.2500	.7106	.0985	2.0000	5.0000
GRP03	100	3.1100	.8633	.0863	1.0000	5.0000
TOTAL	284	3.1585	.8234	.0489	1.0000	5.0000
	FIXED EFFECTS MODEL		.8249	.0489		
	RANDOM EFFECTS MODEL		.0732	.0423		

TESTS FOR HOMOGENEITY OF VARIANCES

COCHRANS C = MAX. VARIANCE/SUM(VARIANCES) = .3822, P = .221 (APPROX.)
BARTLETT-BOX F = 1.261, P = .283
MAXIMUM VARIANCE / MINIMUM VARIANCE = 1.476

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VARIABLE X114 DISCUSSION

ANALYSIS OF VARIANCE

SOURCE	D.F.	SUM OF SQUARES	MEAN SQUARES	F RATIO	F PROB.
BETWEEN GROUPS	2	.7555	.3777	.695	.504
WITHIN GROUPS	308	167.3539	.5434		
TOTAL	310	168.1094			

GROUP	COUNT	MEAN	STANDARD DEVIATION	STANDARD ERROR	MINIMUM	MAXIMUM
GRP01	143	4.1678	.7119	.0595	2.0000	5.0000
GRP02	59	4.0339	.7871	.1025	2.0000	5.0000
GRP03	107	4.1193	.7419	.0711	2.0000	5.0000
TOTAL	311	4.1254	.7364	.0418	2.0000	5.0000
	FIXED EFFECTS MODEL		.7371	.0418		
	RANDOM EFFECTS MODEL		.0715	.0413		

TESTS FOR HOMOGENEITY OF VARIANCES

COCHRANS C = MAX. VARIANCE/SUM(VARIANCES) = .3695, P = .340 (APPROX.)
BARTLETT-BOX F = .431, P = .656
MAXIMUM VARIANCE / MINIMUM VARIANCE = 1.222

- O N E W A Y -

VARIABLE X115 STUDENT LAB EXPERIMENTS

ANALYSIS OF VARIANCE

SOURCE	D.F.	SUM OF SQUARES	MEAN SQUARES	F RATIO	F PROB.
BETWEEN GROUPS	2	1.4874	.7437	.749	.478
WITHIN GROUPS	278	276.0287	.9929		
TOTAL	280	277.5161			

GROUP	COUNT	MEAN	STANDARD DEVIATION	STANDARD ERROR	MINIMUM	MAXIMUM
GRP01	132	2.5909	.9881	.0860	1.0000	5.0000
GRP02	52	2.6346	.9081	.1259	1.0000	4.0000
GRP03	97	2.7526	1.0511	.1067	1.0000	5.0000
TOTAL	281	2.6548	.9956	.0594	1.0000	5.0000
	FIXED EFFECTS MODEL		.9964	.0594		
	RANDOM EFFECTS MODEL		.0838	.0484		

TESTS FOR HOMOGENEITY OF VARIANCES

COCHRANS C = MAX. VARIANCE/SUM(VARIANCES) = .3802, P = .243 (APPROX.)
BARTLETT-BOX F = .702, P = .500
MAXIMUM VARIANCE / MINIMUM VARIANCE = 1.340

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VARIABLE A116 SMALL GROUP DISCUSSIONS

ANALYSIS OF VARIANCE

SOURCE	D.F.	SUM OF SQUARES	MEAN SQUARES	F RATIO	F PROB.
BETWEEN GROUPS	2	.8448	.4224	.482	.624
WITHIN GROUPS	297	260.1519	.8759		
TOTAL	299	260.9967			

GROUP	COUNT	MEAN	STANDARD DEVIATION	STANDARD ERROR	MINIMUM	MAXIMUM
GRP01	141	2.9645	.9213	.0776	1.0000	5.0000
GRP02	57	3.1053	.9762	.1293	1.0000	5.0000
GRP03	102	2.9804	.9332	.0924	1.0000	5.0000
TOTAL	300	2.9967	.9343	.0539	1.0000	5.0000
	FIXED EFFECTS MODEL		.9359	.0540		
	RANDOM EFFECTS MODEL		.9809	.0467		

TESTS FOR HOMOGENEITY OF VARIANCES

COCHRANS C = MAX. VARIANCE/SUM(VARIANCES) = .3566, P = .540 (APPROX.)
BARTLETT-BOX F = .137, P = .869
MAXIMUM VARIANCE / MINIMUM VARIANCE = 1.123

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VARIABLE X117 GUEST SPEAKERS

ANALYSIS OF VARIANCE

SOURCE	D.F.	SUM OF SQUARES	MEAN SQUARES	F RATIO	F PROB.
BETWEEN GROUPS	2	.4854	.2427	.348	.712
WITHIN GROUPS	281	196.1343	.6980		
TOTAL	283	196.6197			

GROUP	COUNT	MEAN	STANDARD DEVIATION	STANDARD ERROR	MINIMUM	MAXIMUM
GRP01	132	2.3712	.8326	.0725	1.0000	5.0000
GRP02	55	2.4000	.8735	.1178	1.0000	5.0000
GRP03	97	2.4639	.8173	.0830	1.0000	4.0000
TOTAL	284	2.4085	.8335	.0495	1.0000	5.0000
FIXED EFFECTS MODEL			.8355	.0496		
RANDOM EFFECTS MODEL			.0476	.0275		

TESTS FOR HOMOGENEITY OF VARIANCES

COCHRANS C = MAX. VARIANCE/SUM(VARIANCES) = .3592, P = .508 (APPROX.)
BARTLETT-BOX F = .157, P = .853
MAXIMUM VARIANCE / MINIMUM VARIANCE = 1.142

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VARIABLE X110 VALUES CLARIFICATION ACTIVITIES

ANALYSIS OF VARIANCE

SOURCE	D.F.	SUM OF SQUARES	MEAN SQUARES	F RATIO	F PROB.
BETWEEN GROUPS	2	2.3327	1.1664	1.104	.334
WITHIN GROUPS	274	289.4940	1.0565		
TOTAL	276	291.8268			

GROUP	COUNT	MEAN	STANDARD DEVIATION	STANDARD ERROR	MINIMUM	MAXIMUM
GRP01	129	2.8062	1.0238	.0901	1.0000	5.0000
GRP02	51	3.0588	.9677	.1355	1.0000	5.0000
GRP03	97	2.8763	1.0632	.1080	1.0000	5.0000
TOTAL	277	2.8773	1.0283	.0618	1.0000	5.0000
	FIXED EFFECTS MODEL		1.0279	.0618		
	RANDOM EFFECTS MODEL		.1379	.0796		

TESTS FOR HOMOGENEITY OF VARIANCES

COCHRANS C = MAX. VARIANCE/SUM(VARIANCES) = .3629, P = .458 (APPROX.)
BARTLETT-BOX F = .287, P = .754
MAXIMUM VARIANCE / MINIMUM VARIANCE = 1.207