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# The Relationship of NYA Employment to Students' Grades at the University of New Mexico

Van Deusen Clark

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# THE RELATIONSHIP OF NYA EMPLOYMENT TO STUDENTS' GRADES AT THE UNIVERSITY OF NEW MEXICO

By

Van Deusen Clark

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# CHAPTER I

## INTRODUCTION

This study is divided into eight parts. The first chapter deals with the importance of the study, review of related studies, statement of the problem, definition and delimitations, sources of the data, and procedure. Chapters II, III, and IV are concerned with the semesters 1935-36 (1), 1935-36 (2), and 1936-37 (1) respectively, and in which NYA workers and non-workers are compared. Chapter V is a summation of the results found from the study of these three semesters. Chapter VI is a comparison of NYA workers with a group of like students, in which the work factor was uncontrolled. Chapter VII attempts to establish the relationship, of grades and intelligence and the influence of work upon this relationship. Chapter VIII contains conclusions.

Importance of the study. Colleges and universities generally have a number of students who must have employment in order to attend school. The results of a questionnaire[1] given to the students of the University of New Mexico in April, 1937 show that the 72.5 per cent who answered, 52.3 per cent were engaged in outside employment. Even without full returns from the questionnaire it is easy to see that the percentage of students who are employed and attend school approximates

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[1] Appendix p, 52.

fifty per cent of the total student body. Results from the questionnaire also show that employment takes about two and one-third hours per day of a working student's time.[2] The question arises: do these students sacrifice a good scholastic record because of gainful employment?

Our study should be of interest to educational administrators who formulate policies regarding the size of students' class load in relation to outside employment. Class loads are arbitrary unless based on facts. It is hoped that some facts pertinent to the problem of student employment will be made available by this study.

Review of Related studies. Many studies have been made regarding the scholarship of different categories of students--that is, men and women, fraternity and non-fraternity, etc.--and the relation of grades to extra-curricular activities, class schedules, special aptitudes, and intelligence. Few studies were found that touch directly upon the problem of employment in relation to grades. F. C. Touton[3] studied the scholastic aptitude and achievement of FERA[4] working students by comparing these two factors with a random sampling of the remainder of the student body. With 268 in the SERA[5] group

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[2] Appendix pp. 53-55.

[3] Frank C. Touton, "Scholastic Aptitudes and Achievements of FERA Students," School and Society 42:269-71, August 24, 1935.

[4] Federal Emergency Relief Administration.

[5] State Emergency Relief Administration.

and 499 in the non-SERA group, he found that the SERA group averaged slightly higher on the aptitude test and tended to make slightly better grades. The work factor was not controlled. M. E. Wagner[6] and others equated two groups of students, an FERA working group and a non-working group. Only freshmen and sophomore students were used and it was found that the FERA workers made slightly better grades than did non-workers. In both studies it was concluded that the nature of the employment probably accounted for the superior grades of the working groups.

Statement of the problem. The problem is essentially the question: What, if any, is the relationship of NYA employment on students' grades? Is intelligence a factor in this relationship?

Definitions and Delimitations. The term NYA as used in this study refers to the National Youth Administration.

For the purpose of this study students who averaged thirty hours or more per month of NYA employment were considered as the working group. The non-working group was composed of regularly enrolled students who did not engage in gainful employment. The percentile ratings attained by students on the Psychological examination taken upon entrance

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[6] M. E. Wagner and others, "The Effect of FERA Employment Upon College Grades," School and Society, 45:24-6, January 2, 1937.

to the University were used in equating the two groups. Other categories used in equating the work groups and the control groups were age, sex, school year, and college. The first semester of the year 1935-36 is written 1935-36 (1), the second semester of 1935-36 is written 1935-36 (2), and the first semester of 1936-37 is written 1936-37 (1).

NYA working students were compared with non-working students for the three semesters 1935-36 (1), 1935-36 (2), and 1936-37 (1). For the semester 1936-37 (1) NYA working students were also compared with students equated in the same manner as outlined above except that the factor of work was not controlled for the non-NYA group.

Sources of data. Percentile ratings on the psychological examination were obtained from the files of the Psychology Department and the Personnel Office. Hours worked for NYA were secured from the Bursar's Office. Grades, colleges, ages, and sex were obtained from the Registrar's Office.

The control groups were selected from students who did not participate in NYA employment.

Procedure. From the NYA pay rolls for the semesters 1935-36 (1), 1935-36(2), and 1936-37 (1) lists were made of students who worked at least thirty hours per month for any period. While the first semester periods end about February first, the tenth was chosen as the limit of working time as the NYA fiscal month runs from the tenth to the ninth. The

first semesters studied include five months work and the second semester includes four months work.

For the students in these three NYA groups, intelligence (percentile rank on the psychological examination), age, sex, school year, and college were found. From the remainder of the student body who had answered a questionnaire as to the amount of gainful employment for the past three semesters were selected non-working groups comparable in the five respects mentioned above. Means were computed to determine the accuracy of equating. Tables were drawn up to show the number of working and non-working students of each sex, college, and school year. To judge the validity of the matching by age and intelligence, tables were formulated to show the means, medians, and standard deviations.

The class load of the groups was not matched as it was felt that this would make another point for comparison between working and non-working students. Hotz and Trice made a study of the relation of an abnormal weekly schedule to grade point average and concluded that:

> The chief implications of this study are that the dangers involved in permitting certain students to carry an abnormally heavy schedule have been unduly exaggerated and that many students can profitably, and with no consequent lowering of grade point averages, carry a heavier load than most college regulations permit.[7]

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[7] H. G. Hotz, and J. A. Trice, "The Relation of an Abnormal Weekly Schedule to Grade Point Averages." School and Society 39:422-4, March 31, 1934.

Only in Chapter VI, which is concerned with a comparison of NYA working students with a selected group in which the work factor was uncontrolled, were students used who did not fill out the questionnaire. This comparison was made in order to note any differences NYA and non-NYA employment might make. Since some of the NYA students for the semester 1936-37 (1) left school at the end of that semester it was impossible to determine exactly the amount of other employment carried by that group.

The letter grades used at the University of New Mexico were given the following numerical values: A-6, B-5, C-4, D-3, I-2, X-2, F-1, and WF-1. This was done to facilitate averaging grades and to make final figures simpler. The term "grade points" as used throughout this study refers to the above evaluation of letter grades and is not equivalent to the term "grade points" as used by the Registrar's Office.

With the four equated groups comparisons were made regarding class loads, grade averages, and the significance of the differences of these averages, and the percentage of grades earned in relation to the total hours carried. These comparisons were made for the groups as a whole and then the groups were broken down and comparisons made for men and women separately.

Grades for the three groups for the semesters 1935-36 (1), 1935-36 (2), and 1936-37 (1) were distributed according to quarter divisions of the intelligence examination scores.

This distribution was made by semesters, by sex, and groups for NYA workers and non-workers. No such distribution was made when NYA workers were compared with a group of students in which the work factor was not controlled (1936-37(1)), for the NYA group was, naturally, identical and the selected groups overlapped.

## CHAPTER II

## NYA WORKERS AND NON-WORKING STUDENTS

## 1935-36 (1)

General. All students who worked at least thirty hours per month for the NYA for the semester 1935-36 (1) were selected for the working group. This group does not contain any senior students as all seniors had graduated before this study was made and it was impossible to equate them with non-working students. The working group was composed of forty-five men and forty-seven women, with forty-five students from the College of Arts and Sciences, thirty-nine from the College of Education, and eight from the College of Engineering. Breaking the group down into school years shows twenty-five freshmen, forty sophomores, and twenty-seven junior students. The control group does not vary from these figures (Table I).

The working group worked an average of 43.56 hours per month for the NYA (Table II). In addition to their regular NYA employment, three women and sixteen men spent an average of 76.47 hours per month at other employment.

Age. The NYA group averages 0.28 years older than the control group. This difference occurs largely within the NYA women group (Table III) and is due to the fact that a few NYA cases were older than any women left in the non-working group.

TABLE I

COMPARATIVE DATA ON CONTROL AND
NYA GROUPS 1935-36 (1)

| | | College | | | Sex | | Class in University | | |
|---|---|---|---|---|---|---|---|---|---|
| | No. | A & S | Educ. | Eng. | M | F | Fresh | Soph | Junior |
| Con Group | 92 | 45+ | 39 | 8 | 45 | 47 | 25 | 40 | 27 |
| NYA Group I | 92 | 45 | 39 | 8 | 45 | 47 | 25 | 40 | 27 |

TABLE II

HOURS WORKED BY THE NYA GROUP
1935-36 (1)

| | No. | Mean | Median | S. D. |
|---|---|---|---|---|
| NYA work | | | | |
| Group | 92 | 217.80 | 215 | 42.00 |
| Men | 45 | 211.67 | 212 | 42.16 |
| Women | 47 | 223.72 | 219 | 42.70 |
| Other Employment | | | | |
| Group | 19 | 378.50 | | |
| Men | 16 | 392.50 | | |
| Women | 3 | 300.00 | | |

There is almost one year difference in the sigma or standard deviation of the two women groups with the greater variability being found in the NYA group. The NYA women were older than the NYA men and the control group women. NYA men were older than the non-working men by a negligible amount.

Intelligence. In intelligence the control group, both men and women, exceeded the NYA group by about three-fourths of one percentile rank (Table III). Again this is due to the limited choice for the control group, but the difference should not affect the results. The standard deviation for the two groups shows that the control group varies more from the mean than does the NYA group.

The average percentile rank for the NYA men was 65.80 and for the women 61.40. As a good many of the NYA group were picked on a basis of scholarship this group should rank somewhat higher than the University as a whole.

Academic load. The NYA group, as a whole, carried 0.37 hours less class work than did the non-working group (Table III), with the greatest difference occurring between the groups of women. NYA men and non-working men differed only 0.02 hours while NYA women carried 0.80 hours less than did non-working women.

The NYA hours carried show a greater variability than do the comparable group, with greater variability for the men than for the women.

TABLE III

COMPARISON OF EQUATED GROUPS 1935-36 (1)

| | | AGE | | | PERCENTILE RANK | | | CLASS HOURS CARRIED | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | No. | Mean | Median | S.D. | Mean | Median | S.D. | Mean | Median | S.D. |
| Con Group | 92 | 20.48 | 20 | 3.66 | 63.59 | 68.00 | 29.40 | 16.04 | 16 | 2.02 |
| NYA Group | 92 | 20.20 | 20 | 3.12 | 64.35 | 69.00 | 29.77 | 16.41 | 17 | 1.63 |
| Difference | | -.28 | | -.54 | +.76 | | +.37 | +.37 | | |
| NYA Men | 45 | 20.44 | 20 | 2.42 | 65.80 | 71.25 | 28.36 | 16.53 | 16 | 2.34 |
| Con Men | 45 | 20.42 | 20 | 2.38 | 66.67 | 76.25 | 28.69 | 16.55 | 17 | 1.79 |
| Difference | | -.02 | | +.04 | +.87 | | +.33 | +.02 | | |
| NYA Women | 47 | 20.53 | 19 | 4.52 | 61.40 | 65.83 | 30.20 | 15.47 | 16 | 1.51 |
| Con Women | 47 | 19.98 | 19 | 3.64 | 62.03 | 65.00 | 30.59 | 16.27 | 17 | 1.44 |
| Difference | | -.55 | | -.88 | +.63 | | +.39 | +.80 | | |

Grades. When the two groups were compared for grade averages, there was no difference (Table IV); both averaging 4.56 grade points which is about C plus according to the system of grading at the University of New Mexico.

The NYA grades show more tendency to scatter from the mean than do those of the equated group. NYA women are the exception here with a smaller sigma or standard deviation than the comparable women group. This would indicate that all NYA women tended to carry a slightly lower class load and to make slightly lower grades for the semester 1935-36 (1).

The NYA women were lower by 0.13 grade points than the non-working women and the NYA men were 0.14 grade points higher than non-working men. This shows that the men tend to carry employment slightly more successfully than do women. In fact, in comparison with the equated groups, the men seem to make better grades when they work (Table V).

Non-working women made 1.02 per cent more hours of A than did NYA women, but NYA women made 8.42 per cent more hours of B than non-working women. Non-working men made 2.59 per cent and 5.56 per cent less hours of A and B respectively than did NYA men. The P.E. of the difference between the grade averages of the two groups is ± 0.079. This difference is not statistically reliable.

TABLE IV

GRADE AVERAGES OF THE NYA AND CONTROL GROUP 1935-36 (1)

| | No. | M | PE of M | Mdn | S.D. | PE of Diff | D/PEDIFF |
|---|---|---|---|---|---|---|---|
| NYA Group | 92 | 4.56 | ±.058 | 4.60 | .800 | | |
| Con Group | 92 | 4.56 | ±.054 | 4.58 | .774 | | |
| Difference | | .00 | | | +.026 | ±.079 | |
| NYA Men | 45 | 4.61 | ±.081 | 4.70 | .808 | | |
| Con Men | 45 | 4.47 | ±.084 | 4.67 | .844 | | |
| Difference | | -.14 | | | -.036 | ±.116 | 1.20 |
| NYA women | 47 | 4.52 | ±.085 | 4.50 | .863 | | |
| Con women | 47 | 4.65 | ±.067 | 4.57 | .684 | | |
| Difference | | +.13 | | | +.182 | ±.108 | 1.20 |

TABLE V

PERCENTAGE OF GRADES RECEIVED BY NYA AND CONTROL GROUPS
1935-36 (1)

| | N | A | B | C | D | I | X | F | WF | TOTAL HOURS |
|---|---|---|---|---|---|---|---|---|---|---|
| NYA Group | 92 | 22.96% | 35.34% | 26.40% | 8.94% | 3.25% | .74% | 2.37% | 0.00% | 1477 |
| Con Group | 92 | 20.99% | 36.49% | 28.75% | 17.34% | .86% | .99% | 2.05% | .53% | 1510 |
| Difference | | +1.97% | -1.15% | -2.55% | -10.40% | +2.39% | -.25% | +.32% | -.53% | -33 |
| NYA Men | 45 | 24.87% | 38.19% | 20.98% | 8.92% | 2.39% | 1.13% | 5.52% | 0.00% | 796 |
| Con Men | 45 | 22.28% | 32.63% | 28.18% | 10.35% | .92% | 1.84% | 3.28% | .52% | 763 |
| Difference | | +2.59% | +5.56% | -7.20% | +1.43% | +1.47% | -.71% | +.24% | -.52% | +33 |
| NYA Women | 47 | 20.70% | 32.01% | 32.75% | 8.96% | 4.26% | .29% | 1.03% | 0.00% | 681 |
| Con Women | 47 | 19.68% | 40.43% | 29.32% | 8.30% | .80% | .13% | .80% | .54% | 747 |
| Difference | | +1.02% | +8.42% | +3.43% | -0.66% | +3.46% | +.16% | +.23% | -.54% | -66 |

Summary and conclusions. From the records for 1935-36 (1) a list of all NYA freshmen, sophomores, and juniors who had worked a minimum of 150 hours for the semester were equated with a comparable group of students who had not been gainfully employed while attending school for that period. These two groups were composed of forty-five men and forty-seven women with twenty-five freshmen, forty sophomores, and twenty-seven juniors. Seniors were not used in this study. A comparable non-working group could not be found because all seniors had graduated before the questionnaire regarding past employment was submitted to the student body.

The equated group approximated the NYA group fairly closely, the greatest difference being apparent in the standard deviations of the distributions. Means for groups were more nearly equal than were the means of distribution when broken down into men and women groups.

Grade averages were 4.56 points for both groups and this is approximately equivalent to C plus at the University of New Mexico. The NYA women were 0.13 grade points lower and the NYA men 0.14 grade points higher than the comparable groups of non-working men and women. The NYA women carried 15.47 hours of class work. This is 0.80 hours less than non-working women, 1.08 hours less than non-working men, and 1.06 hours less than NYA men.

From the above results it seems that:

1. The NYA group carried fewer class hours than did the control group. NYA men practically equaled

non-working men; NYA women largely accounted for the group difference.

2. The NYA group and the control group made the same grade average. NYA men made a higher grade average than non-working men; NYA women made a lower grade average than non-working women.

3. Men were more capable than women of carrying employment with an average class load and maintaining a higher scholastic average than non-working men.

## CHAPTER III

## NYA WORKERS AND NON-WORKING STUDENTS

## 1935-36 (2)

General. According to the NYA records of 1935-36 (2), 116 students worked thirty hours per month for the NYA. A comparable group of non-working students was chosen from the remainder of the student body with the questionnaire answers with regard to employment used as a basis of selection or rejection.

A comparison of NYA students and non-working students by colleges (Table VI) shows that the control group contains two more College of Arts and Sciences and two less College of Education students than does the NYA working group. This was probably due tot he fact that so many male students in the College of Education are partially earning their expenses while in school, that it was therefore impossible to find an equal number of non-working men in the College of Education.

The 116 students working for the NYA performed an average of 187 hours of work for the four months time (Table VII) with very little variation between the time worked by men and that by women. Of these 116 NYA students, twelve men and two women averaged 199 hours of other remunerative employment for the period.

TABLE VI

COMPARATIVE DATA ON CONTROL AND NYA
GROUPS 1935-36 (2)

| | | College | | | | Sex | | Class in University | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | N | A&S | Educ | Eng | Gen | M | F | Fr | Soph | Junior |
| NYA | 116 | 58 | 43 | 12 | 3 | 64 | 52 | 35 | 45 | 36 |
| Control | 116 | 60 | 41 | 12 | 3 | 64 | 52 | 35 | 45 | 36 |
| Diff. | | 2 | 2 | | | | | | | |

TABLE VII

HOURS WORKED BY NYA GROUP
1935-36 (2)

| | N | Mean | Median | S.D. |
|---|---|---|---|---|
| NYA work | | | | |
| Group | 116 | 187.06 | 177.93 | 38.60 |
| Men | 64 | 187.96 | 178.28 | 36.68 |
| Women | 52 | 185.96 | 178.33 | 40.33 |
| Other employment | | | | |
| Group | 14 | 199 | | |
| Men | 12 | 197 | | |
| Women | 2 | 211 | | |

Age. A comparison of the ages of the two groups (Table VIII) shows that the control group is 0.39 years younger than the NYA group. The difference for the men group amounts to 0.46 years and for the women 0.32 years. Students who are older are usually those who have to depend largely upon themselves for school expenses and consequently do not fit into the non-working group. The average age for both groups is a little over twenty years, the NYA men being slightly the oldest of the four divisions.

Intelligence. In intelligence the two groups show a difference of 0.59 of one percentile, with the NYA group averaging 63.97 and the control group 64.56 (Table VIII). The greatest difference occurs between the two groups of men. The men of the control group average 2.02 percentiles higher than the men of the NYA group and while this difference is regretable it should not influence results unduly. The percentile rankings of the working group showed far more scatter than was possible to duplicate in the non-working group.

Class load. The two groups showed practically no difference in the number of hours carried (Table VIII). The NYA men carried a fraction of an hour less than did the non-working men while the condition was reversed in the case of the women groups. The men carried a little over sixteen hours, the women a little less than sixteen hours.

The NYA group, both men and women, are more consistent

in the number of hours carried. Apparently the non-working group is composed of extremely industrious as well as lazy students. Probably the fact that the NYA group was responsible for a certain amount of work tended to keep class loads at a more constant level.

Grade averages. The working students, both men and women, made higher grades than did the non-working students by approximately 0.17 grade points (Table IX). It should be remembered that 1.00 represents the difference between a letter grade.

Working women made the best grades with an average of 4.70 or about B minus. The non-working men averaged 4.48 grade points or slightly less than C plus. The P.E. of the difference between the grade averages of the two groups is 0.071. This difference is not statistically reliable, the critical ratio being 2.40.

The NYA men did not make as large a percentage of hours of A as did the non-working men (Table X), but they did make a larger percentage of hours of B than did the control group men. They also made less hours of D, X, and F. Working women made a larger percentage of A's than did non-working women and also slightly more hours of I, X, and F. The high percentage of hours of A is wholly responsible for this group having the highest scholastic average of all groups.

TABLE VIII

COMPARISONS OF EQUATED GROUPS 1935-36 (2)

| | | AGE | | | PERCENTILE | | | CLASS HOURS CARRIED | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | No. | Mean | Median | S.D. | Mean | Median | S.D. | Mean | Median | S.D. |
| NYA Group | 116 | 20.76 | 20 | 3.63 | 63.97 | 70.00 | 29.64 | 16.03 | 16 | 1.83 |
| Con Group | 116 | 20.37 | 20 | 3.31 | 64.56 | 68.95 | 27.08 | 16.04 | 17 | 2.37 |
| Difference | | -.39 | | -.32 | +.59 | | -2.56 | -.01 | | |
| NYA Men | 64 | 20.72 | 20 | 2.84 | 64.22 | 70.00 | 29.06 | 16.34 | 16 | 1.95 |
| Con Men | 64 | 20.26 | 20 | 2.34 | 66.25 | 69.99 | 25.91 | 16.25 | 17 | 2.06 |
| Difference | | -.46 | | -.50 | -2.03 | | -3.15 | -.09 | | |
| NYA Women | 52 | 20.82 | 20 | 4.42 | 63.66 | 70.00 | 30.70 | 15.66 | 16 | 1.60 |
| Con Women | 52 | 20.50 | 19 | 4.21 | 62.89 | 68.75 | 28.24 | 15.79 | 16 | 2.67 |
| Difference | | -.32 | | -.21 | -.77 | | -2.46 | -.13 | | |

TABLE IX

GRADE AVERAGES OF THE NYA AND CONTROL GROUPS 1935-36 (2)

| | N | Mean | PE M | Mdn | S.D. | PE diff | D/PE diff |
|---|---|---|---|---|---|---|---|
| NYA Group | 116 | 4.67 | ±.055 | 4.78 | .87 | | |
| Con Group | 116 | 4.50 | ±.045 | 4.40 | .74 | | |
| Difference | | -.17 | | | -.13 | ±.071 | 2.40 |
| NYA Men | 64 | 4.65 | ±.080 | 4.77 | .95 | | |
| Con Men | 64 | 4.48 | ±.071 | 4.56 | .85 | | |
| Difference | | -.17 | | | -.10 | ±.107 | 1.59 |
| NYA Women | 52 | 4.70 | ±.073 | 4.80 | .78 | | |
| Con Women | 52 | 4.51 | ±.055 | 4.40 | .59 | | |
| Difference | | -.19 | | | -.19 | ±.091 | 2.09 |

TABLE X

PERCENTAGE OF GRADES RECEIVED BY THE NYA AND CONTROL GROUPS 1935-36 (2)

| | N | A | B | C | D | I | X | F | WF | Total hours |
|---|---|---|---|---|---|---|---|---|---|---|
| NYA Men | 64 | 25.43% | 38.40% | 23.28% | 5.75% | 2.04% | 1.58% | 2.41% | 1.11% | 1078 |
| Con Men | 64 | 22.79% | 34.33% | 27.98% | 9.52% | 0.67% | 0.00% | 3.46% | 1.25% | 1040 |
| Difference | | -2.64% | -4.07% | +4.70% | +3.77% | -1.47% | -1.58% | +1.05% | +.14% | -38 |
| NYA Women | 52 | 24.88% | 37.88% | 26.26% | 6.06% | 1.26% | 1.39% | 1.89% | 0.38% | 792 |
| Con Women | 52 | 13.78% | 39.51% | 37.20% | 7.68% | 0.24% | 0.61% | 0.61% | 0.37% | 820 |
| Difference | | -11.10% | +1.63% | +10.94% | +1.62% | -1.02% | -.78% | -1.28% | +.01% | +28 |
| NYA Group | 116 | 25.19% | 38.18% | 24.55% | 5.88% | 1.71% | 1.50% | 2.19% | 0.80% | 1870 |
| Con Group | 116 | 18.82% | 36.62% | 32.04% | 8.71% | 0.48% | 0.27% | 2.20% | 0.86% | 1860 |
| Difference | | -6.37% | -1.54% | +7.49% | +2.83% | -1.23% | +1.33% | -.01% | +.06% | -10 |

Summary and Conclusions. For the semester 1935-36(2), fifty-two women and sixty-four men students were found who worked a minimum of thirty hours per month for the NYA. Of these 116 students, twelve men and two women as a group averaged 199 hours at other work for the four month period.

Equating differences show the non-working group contains two more students in the College of Arts and Sciences and two less in the College of Education than the NYA working group.

Intelligence and age differences are not very apparent for the two groups as a whole, the average of each is approximately the sixty-fourth percentile and the average age of each group is twenty and one-half years. The largest difference in percentile rankings occurs between the NYA men (64,22) and non-working men (66.25). In ages the non-working men were 0.46 years younger than the working men.

The two groups carried approximately sixteen hours of class work, with the NYA men carrying 0.09 hours more and NYA women 0.13 hours less than their comparable groups. The working group, both men and women, averaged about 0.17 grade points more than did non-working men and women. Men in both groups tend to make a higher percentage of hours of A and B than do women.

From the study above it seems that:

1. The NYA group carried as heavy a class schedule as the non-working group. NYA men carried a heavier schedule than non-working men; NYA women carried a lighter load than did non-working women.

2. The NYA group, both men and women, made a higher grade average than the non-working group.
3. Men seem more capable of carrying employment with an average class load and maintaining a satisfactory scholastic average.
4. The critical ratio between the grade averages of the two groups was 2.40 or that there are 947 chances in 1000 that the true grade average difference is greater than zero.

# CHAPTER IV

## NYA WORKERS AND NON-WORKING STUDENTS

## 1936-37 (1)

General. According to the NYA records, 140 students averaged thirty hours of work per month over the period September 15 to February 9. While the semester ended about February 1, this longer work period had to be chosen as the NYA fiscal month is from the tenth to the ninth. This group of 140 NYA students was composed of eighty-one men and fifty-nine women. It was possible to use senior students for this semester's study as they were still in school and filled out the questionnaire regarding employment.

When finding a comparable group of students, it was necessary to use one more student from the College of Engineering and one less from the College of Education in the experimental group (Table XI). This was done in order to keep the average age and intelligence for the two groups as near alike as possible.

The men averaged six hours less time in NYA employment than did the women, with the group averaging 206 hours for the period. Thirty members of the NYA group, twenty-six men and four women, carried other employment besides NYA. The women again led the men in average hours carried (Table XII).

TABLE XI

COMPARATIVE DATA ON CONTROL AND NYA
GROUPS 1936-37 (1)

| | | College | | | | Sex | | Class in University | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | N | A&S | Educ | Eng | Gen | M | F | Fr | Soph | Jr | Sr |
| NYA | 140 | 64* | 56 | 11 | 9 | 81 | 59 | 53 | 44 | 28 | 15 |
| Con | 140 | 64* | 55 | 12 | 9 | 81 | 59 | 53 | 44 | 28 | 15 |
| Difference | | | 1 | 1 | | | | | | | |

*Contains two in Fine Arts College

TABLE XII

HOURS WORKED BY NYA GROUP 1936-37 (2)

| | N | M | Mdn | S.D. |
|---|---|---|---|---|
| NYA Employment | | | | |
| NYA Group | 140 | 206.28 | 198.57 | 42.64 |
| NYA Men | 81 | 204.23 | | |
| NYA Women | 59 | 210.14 | | |
| Other Employment | | | | |
| NYA Group | 30 | 264.30 | | |
| NYA Men | 26 | 247.46 | | |
| NYA Women | 4 | 296.25 | | |

Age. A comparison of the ages of the NYA and control group (Table XIII) shows that the NYA group as a whole averages 0.33 years older than the control group. The working men are 0.50 years older and the women 0.10 years older. The NYA men averaged 20.64 years for the oldest group while the control group women averaged 20.30 years for the oldest group while the control group women averaged 20.30 years for the youngest.

Intelligence. The two groups were equated fairly closely on intelligence with the control group 0.35 of one percentile rank over the NYA average. In the men group, non-workers averaged 0.86 of one percentile rank more than the NYA mean and NYA women exceeded non-working women by 0.09 (Table XIII). Mean percentile averages stood between sixty-three and sixty-four percentile rankings, both men groups exceeding like women groups by about four points.

Academic Load. During the semester 1936-37(1) the work groups all carried fewer class hours than did the comparable groups (Table XIII). With the NYA group average of 15.42 hours and the non-working group average of 15.77, loads were slightly lighter than for previous semesters. Again the NYA group, both men and women, show more consistency in the class loads carried.

Grade Averages. The working group, as a whole, made an average of 0.17 grade points more than the non-working group.

TABLE XIII

COMPARISON OF EQUATED GROUPS 1936-37 (1)

| | | AGE | | | PERCENTILE RANK | | | CLASS HOURS CARRIED | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | No. | Mean | Median | S.D. | Mean | Median | S.D. | Mean | Median | S.D. |
| NYA Group | 140 | 20.54 | 20 | 2.96 | 63.57 | 70.00 | 30.02 | 15.42 | 16 | 1.65 |
| Con Group | 140 | 20.21 | 20 | 3.22 | 63.92 | 70.90 | 29.29 | 15.77 | 16 | 1.86 |
| Difference | | -.33 | | +.26 | +.35 | | -.73 | +.33 | | +.21 |
| NYA Men | 81 | 20.64 | 20 | 2.42 | 65.00 | 70.08 | 30.79 | 15.64 | 16 | 1.70 |
| Con Men | 81 | 20.14 | 20 | 2.40 | 65.86 | 75.55 | 29.57 | 15.66 | 16 | 2.07 |
| Difference | | -.50 | | -.02 | +.86 | | -1.22 | +.02 | | +.37 |
| NYA Women | 59 | 20.40 | 20 | 3.57 | 61.36 | 61.44 | 29.09 | 15.24 | 15 | 1.55 |
| Con Women | 59 | 20.30 | 19 | 4.09 | 61.27 | 61.94 | 28.69 | 15.92 | 16 | 1.89 |
| Difference | | -.10 | | +.52 | -.09 | | -.40 | +.58 | | +.34 |

The NYA women averaged 0.02 grade points less than the comparable group of women; consequently, the working men must be credited with giving the working group a higher grade average than the non-working group (Table XIV).

The averages of all groups, working and non-working, were slightly lower than for the previous two semesters. NYA men, the group with the highest grades, only averaged C plus. The lowest group, non-working men, averaged slightly over C.

The working group exceeded in the percentage of hours of A, B, D, and WF received. They also received a larger percentage of P and F in Physical Education (Table XV). The NYA women received a smaller percentage of hours of A and B than did NYA men.

TABLE XIV

GRADE AVERAGES OF NYA AND CONTROL GROUPS
1936-37 (2)

| | M | PEof m | Mdn | S.D. | PE diff | D/PE diff |
|---|---|---|---|---|---|---|
| NYA Group | 4.47 | ±.023 | 4.61 | .81 | | |
| Con Group | 4.30 | ±.052 | 4.35 | .88 | | |
| Difference | -.17 | | +.26 | | ±.056 | 3.03 |
| NYA Men | 4.50 | ±.080 | 4.63 | .95 | | |
| Con Men | 4.22 | ±.072 | 4.23 | .97 | | |
| Difference | -.28 | | +.40 | | ±.132 | 2.12 |
| NYA Women | 4.43 | ±.070 | 4.56 | .79 | | |
| Con Women | 4.45 | ±.063 | 4.45 | .72 | ±.094 | 0.21 |
| Difference | -.02 | | +.11 | | | |

TABLE XV

PERCENTAGE OF GRADES RECEIVED BY THE NYA AND CONTROL GROUPS 1936-37 (1)

| | A | B | C | D | I | X | F | WF | Phys.Educ P | Phys.Educ F | Total hours |
|---|---|---|---|---|---|---|---|---|---|---|---|
| NYA Group | 18.83% | 33.19% | 27.72% | 10.94% | 1.78% | 0.22% | 3.55% | 0.13% | 3.33% | 0.31% | 2251 |
| Con Group | 15.75% | 29.97% | 34.30% | 10.06% | 2.58% | 0.39% | 3.89% | 0.00% | 2.89% | 0.17% | 2286 |
| Difference | +3.08% | +3.22% | -7.58% | +.88% | -.80% | -.17% | -.34% | +.13% | +.44% | +.14% | -35 |
| NYA Men | 20.99% | 31.84% | 26.79% | 10.76% | 2.14% | 0.23% | 3.89% | 0.00% | 2.90% | 0.46% | 1310 |
| Con Men | 17.59% | 27.57% | 29.70% | 12.95% | 4.05% | 0.30% | 5.10% | 0.00% | 2.51% | 0.23% | 1313 |
| Diff. | +3.40% | +4.27% | -2.91% | -2.19% | -1.91% | -.07% | -1.21% | | +.39% | +.23% | -3 |
| NYA Women | 13.83% | 35.07% | 29.01% | 11.16% | 1.28% | 0.21% | 3.08% | 0.32% | 3.93% | 0.11% | 941 |
| Con Women | 13.26% | 33.19% | 40.49% | 6.17% | 0.62% | 0.51% | 2.27% | 0.00% | 3.39% | 0.10% | 973 |
| Diff. | +.57% | +1.88% | -11.48% | +4.99% | +.64% | +.30% | +.81% | +.32% | +.54% | +.01% | -32 |

Summary and conclusions. For the semester 1936-37 (1), eighty-one men and fifty-nine women averaged thirty hours of NYA employment from the period September 15, 1936, to February 9, 1937. Seniors were not excluded from this study. Men and women averaged 206 hours of NYA employment; twenty-six men and four women of this group averaged 264 hours at other work.

The NYA group averaged 20.55 years of age and the non-workers 20.21 years of age. The difference between men groups was 0.50 years and 0.10 years for the women. Percentile rank average for both groups was between sixty-three and sixty-four, with the control group averaging 0.35 of one percentile rank more than the NYA group. Non-working men were 0.86 of one percentile rank over the working men, non-working women 0.09 of one percentile rank below the working women.

The working group carried 0.33 hours less of class work. The NYA men were only 0.02 hours less than non-working men, but working women were 0.68 hours lower than non-working women.

The NYA group averaged 0.17 grade points more than the control group, but NYA men were responsible for this. NYA women averaged 0.02 grade points less than comparable women; NYA men 0.17 grade points more than the comparable men group. The P.E. of the difference is ±.056 and Diff./P.E. of the difference is 3.03. This difference is not wholly statistically reliable.

From the above it is concluded:

1. The NYA group carried a less number of class hours than did the control group. NYA men practically equaled non-working men; NYA women showed the greatest discrepancy.

2. The NYA group made a higher grade average than the control group. NYA men exceeded non-working men; NYA women averaged slightly less than non-working women.

3. Men seem more capable than women of carrying employment with an average class load and maintaining a satisfactory scholastic average. This is assuming that the control group carries an average class load and makes an average grade.

4. The critical ratio between the grade averages of the two groups was 3.03 which means that there are 978 chances in 1,000 of a true difference greater than zero.

## CHAPTER V

### SUMMATION OF GRADE AVERAGES AND CLASS LOADS

### 1935-36 (1) - 1935-36 (2) - 1936-37 (1)

Grade averages. When grade averages over the three semester period are combined and compared, the difference in NYA working women's grades and non-working women is very small and is statistically unreliable (Table XVI).

With a grade average difference of 0.14 points, the critical ratio between group grade averages is 3.35 which is not large enough to be statistically reliable and is in favor of the NYA group. NYA men made a higher grade average than did non-NYA men by 0.20 grade points. This Diff./P.E. of the difference of 3.12 is almost as reliable as the group difference.

According to records in the Registrar's Office, the grade average for all women in the University has been higher than men since 1928-29 (1). Men and women averages were not computed separately before that time. From the above it would seem that NYA work must be a stronger motivating factor in maintaining a good scholastic average for men than women.

Class loads. For the three semesters studied, NYA men carried an average of 16.09 class hours; non-working men averaged 16.07 hours. NYA women averaged 15.45 hours and non-working women averaged 15.98. The NYA group, as a whole

averaged 15.80 hours and the non-workers averaged 16.06 hours.

From this it would seem that NYA working women, as an average, carry a one-half hour smaller class hour schedule than do non-working women. NYA men, as an average, equal or exceed a comparable group of non-working men. The NYA group averages approximately one-quarter hour less class schedule than the non-working group.

# CHAPTER VI

## NYA WORKERS AND GROUP EQUATED WITH WORK FACTOR UNCONTROLLED 1936-37 (1)

Introduction. To round out the comparisons already made, the NYA workers for the semester 1935-36 (1) were equated with a group of students chosen regardless of their employment status. Only this one semester was handled in this manner as it was the largest group and the only group composed of all four grades of students.

To remain on NYA work at the University it is necessary to maintain a "satisfactory" grade average. Other employment is not kept on this basis and since, theoretically at least, NYA students must keep their jobs in order to attend school, this motivating interest should have an effect on the final results.

General. The same NYA group was selected as was used in Part IV. This consisted of 140 students, eighty-one men and fifty-nine women with sixty-four in the College of Arts and Sciences, fifty-six in the College of Education, eleven in the College of Engineering, and nine in the General College (Table XVII). There were two students in the College of Fine Arts in the NYA group. Accordingly two students from the College of Fine Arts were found for the uncontrolled-work group. However, this number is too small for any valid comparison, so the Fine Arts students in both groups are

TABLE XVI

SUMMATION OF GRADE AVERAGES
1935-36 (1) - 1935-36 (2) - 1936-37 (1)

| | N | M | P.E. | Mdn | S.D. | PEof diff | D/PE diff |
|---|---|---|---|---|---|---|---|
| NYA Group | 348 | 4.56 | ±.0314 | 4.66 | .87 | | |
| Con Group | 348 | 4.42 | ±.0292 | 4.43 | .81 | | |
| Difference | | +.14 | | +.23 | +.06 | .0417 | 3.35 |
| NYA Men | 190 | 4.57 | ±.0460 | 4.69 | .94 | | |
| Con Men | 190 | 4.37 | ±.0445 | 4.35 | .91 | | |
| Difference | | +.20 | | +.34 | +.03 | .0640 | 3.12 |
| NYA Women | 158 | 4.54 | ±.0450 | 4.62 | .84 | | |
| Con Women | 158 | 4.51 | ±.0364 | 4.51 | .68 | .0647 | 0.46 |
| Difference | | +.03 | | +.09 | +.16 | | |

TABLE XVII

COMPARATIVE DATA ON RANDOM-SAMPLE AND NYA GROUPS 1936-37 (1)

| | | COLLEGE | | | | SEX | | YEAR AT UNIVERSITY | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | N | A&S | Educ | Eng | Gen | M | F | Fr | Soph | Jr | Sr |
| R-S Group | 140 | 64* | 56 | 11 | 9 | 81 | 59 | 53 | 44 | 28 | 15 |
| NYA Group | 140 | 64* | 56 | 11 | 9 | 81 | 59 | 53 | 44 | 28 | 15 |

*Contains two from Fine Arts College

carried in the College of Arts and Sciences averages.

The uncontrolled-work group was matched with the NYA group for college, school year, sex, age, and percentile rankings. They were not matched for class load or hours of employment.

Employment. The NYA working group averaged 206 hours of NYA work for the period. Men alone averaged 204 hours, the NYA women 210 hours. Thirty NYA workers, twenty-six men and four women, also carried other employment for an average of 264 hours for the period. The women averaged 296 hours and the men 247 hours of other employment. Fourteen NYA students did not answer the questionnaire, consequently their outside employment, if any, is unknown (Table XVIII).

Forty-six members of the uncontrolled-work group were engaged in employment during 1935-36 (1). The group averaged 398 hours, with thirty-four men averaging 442 hours and twelve women averaging 268 hours of work. The standard deviation of the distribution of work hours for the uncontrolled-work group shows a very wide range. Twenty-three members of this group did not answer the questionnaire regarding their employment.

Age. The NYA group is 0.18 years younger than the uncontrolled-work, with a mean age of 20.54 and 20.72 years respectively. NYA men averaged 0.01 years less than comparable men, NYA women with 20.40 years averaged 0.42 years less than the comparable group of women (Table XIX).

TABLE XVIII

HOURS WORKED BY NYA AND RANDOM-SAMPLE GROUPS 1936-37 (1)

| | N | M | Mdn | S.D. |
|---|---|---|---|---|
| NYA Work | | | | |
| NYA Group | 140 | 206.28 | 198.57 | 42.64 |
| NYA Men | 81 | 204.23 | | |
| NYA Women | 59 | 210.14 | | |
| Other Employment | | | | |
| NYA Group | 30 | 264.30 | | |
| NYA Men | 26 | 247.46 | | |
| NYA Women | 4 | 296.25 | | |
| NYA Unknown | 14 | | | |
| R-S Group | 46 | 398.41 | 355.15 | 272.10 |
| R-S Men | 34 | 442.23 | | |
| R-S Women | 12 | 268.78 | | |
| R-S Unknown | 23 | | | |

Intelligence. In both groups the median percentile rank, as taken from freshmen intelligence tests, was seventy. For the NYA group the mean percentile rank was $63.37 \pm 0.332$ with a standard deviation of 5.82 and for the uncontrolled work group the percentile rank was $63.35 \pm 1.41$ with a standard deviation of 2.47. The greatest difference in matching intelligence occurs between the NYA women and the comparable women group (Table XIX). This difference is only 0.26 of one percentile and is too small to have any effect on results.

Academic Load. The NYA group averaged 15.42 hours of class work, and the uncontrolled-work group averaged 15.58 hours. The NYA women, with an average of 15.24 hours of class work carried 0.49 hours less than comparable women. The NYA men carried 0.18 hours more of class work than comparable men (Table XIX).

Grade Averages. The NYA men made the highest grade average with 4.50 points or avout C plus. The NYA women average was 0.07 grade points lower and exceeded the uncontrolled work group of women by 0.16 grade points. The uncontrolled-work men made 0.02 grade points less than women of this class. The grade averages for all groups only varied one-fourth grade point (Table XX).

The P.E. of the difference was 0.034 and the Diff./P.E. of grade averages was 5.85. This critical ratio is large enough to show a true difference between the two groups.

TABLE XIX

COMPARISON OF NYA AND RANDOM-SAMPLE GROUP
1936-37 (1)

| | | AGE | | | PERCENTILE RANK | | | CLASS HOURS CARRIED | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | N | Mean | Median | S.D. | Mean | Median | S.D. | Mean | Median | S.D. |
| NYA Group | 140 | 20.54 | 20 | 2.96 | 63.57 | 70.00 | 30.02 | 15.42 | 16 | 1.65 |
| R-S Group | 140 | 20.72 | 20 | 3.29 | 63.35 | 70.00 | 30.14 | 15.58 | 16 | 3.92 |
| Difference | | +.18 | | +.33 | -.22 | | +.12 | +.16 | | +2.27 |
| NYA Men | 81 | 20.64 | 20 | 2.42 | 65.00 | 70.08 | 30.79 | 15.64 | 16 | 2.07 |
| R-S Men | 81 | 20.65 | 20 | 2.51 | 64.88 | 70.79 | 30.89 | 15.46 | 15 | 5.36 |
| Difference | | +.01 | | +.09 | -.12 | | +.10 | -.18 | | +3.29 |
| NYA Women | 59 | 20.40 | 20 | 3.57 | 61.36 | 61.44 | 29.09 | 15.24 | 15 | 1.55 |
| R-S Women | 59 | 20.82 | 19 | 2.66 | 61.10 | 61.36 | 28.80 | 15.73 | 16 | 1.25 |
| Difference | | +.42 | | +.91 | -.26 | | -.29 | +.49 | | -.30 |

TABLE XX

GRADE AVERAGES OF RANDOM-SAMPLE AND NYA GROUPS 1936-37 (2)

| | N | M | PEof m | Mdn | S.D. | PE diff | D/PE diff |
|---|---|---|---|---|---|---|---|
| NYA Group | 140 | 4.47 | ±.046 | 4.61 | 0.81 | | |
| R-S Group | 140 | 4.27 | ±.052 | 4.35 | 0.92 | | |
| Difference | | -.20 | | | +.09 | ±.070 | 2.85 |
| NYA Men | 81 | 4.50 | ±.080 | 4.62 | 0.95 | | |
| R-S Men | 81 | 4.25 | ±.080 | 4.19 | 1.03 | | |
| Difference | | -.25 | | | +.08 | ±.113 | 2.21 |
| NYA Women | 59 | 4.43 | ±.070 | 4.42 | 0.79 | | |
| R-S Women | 59 | 4.27 | ±.070 | 4.38 | 0.80 | | |
| Difference | | -.16 | | | +.01 | ±.099 | 1.61 |

The NYA group exceeded the uncontrolled-work group in earning a larger percentage of hours of A, B, I, and P in Physical Education (Table XXI). NYA women made a larger percentage of hours of B, D, I, WF, and P in Physical Education and NYA men exceeded in hours of A, B, and P in Physical Education than the comparable groups of women and men.

Summary and Conclusions. The 140 students who worked an average of thirty hours per month for the NYA were matched with an equal number of students by college, school year, sex, age, and percentile rank. No effort was made to equate class loads or hours of employment. The two groups, eighty-one men and fifty-nine women, were equal in all variables except age, with the NYA group 0.18 years younger than the uncontrolled-work group, and 0.22 of one percentile over the uncontrolled-work group average.

The NYA group averaged 206 hours of NYA employment with thirty members averaging 264 hours of other work for 1935-36 (1). Forty-six members of the comparable group averaged 398 hours of employment for the same period.

The NYA group with an average of 4.47 exceeded the equated group grade average by 0.20 grade points. NYA men exceeded equated men 0.25 grade points and NYA women equated women 0.16 grade points. The NYA men made a larger percentage of their grades in hours of A and B. NYA women did not make as large a percentage of the higher grades as did

uncontrolled-work women. The difference in grade averages of the two groups shows a critical ratio of 2.85, thereby showing a valid difference.

From the above it is concluded:

1. Employment, other than NYA, demanded about eighty hours per month of the students' time.
2. The NYA group carried a less number of class hours than did the equated group. NYA men exceeded comparable men; NYA women were exceeded by comparable women.
3. The NYA group, both men and women, made a higher grade average than did the non-NYA work group.
4. Men are slightly more capable than women of carrying employment with an average class load and maintaining a satisfactory scholastic average.
5. The critical ratio between the grade averages of the two groups was 2.85, making the difference statistically unreliable.

TABLE XXI

PERCENTAGE OF GRADES RECEIVED BY R-S AND NYA GROUPS 1936-37 (1)

| | N | A | B | C | D | I | X | F | WF | Phys.Educ P | Phys.Educ F | Total hours |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| NYA Group | 140 | 18.83% | 33.19% | 27.72% | 10.94% | 1.78% | 0.22% | 3.55% | 0.13% | 3.33% | .31% | 2251 |
| R-S Group | 140 | 16.27% | 26.72% | 34.71% | 11.15% | 1.46% | 1.10% | 4.46% | 1.06% | 2.92% | .35% | 2256 |
| Difference | | -2.36% | -7.27% | +6.99% | +.21% | -.32% | +.88% | +.91% | +.93% | -.41% | +.04% | +5 |
| NYA Men | 81 | 20.99% | 31.84% | 26.79% | 10.76% | 2.14% | .23% | 3.89% | 0.00% | 2.90% | 0.46% | 1310 |
| R-S Men | 81 | 16.65% | 23.93% | 32.15% | 13.63% | 2.40% | 1.08% | 5.43% | 1.63% | 2.56% | 0.54% | 1291 |
| Difference | | -4.34% | -7.91% | +6.36% | +2.87% | +.26% | +.85% | +1.54% | +1.63% | -.34% | +.08% | -19 |
| NYA Women | 59 | 13.83% | 35.07% | 29.01% | 11.16% | 1.28% | .21% | 3.08% | .32% | 3.93% | .11% | 941 |
| R-S Women | 59 | 15.75% | 30.47% | 38.13% | 7.25% | -.21% | 1.14% | 3.21% | .31% | 3.42% | .01% | 965 |
| Difference | | +1.92% | -4.60% | +9.12% | -3.91% | -1.07% | +.93% | +.13% | -.01% | -.51% | +.10% | -24 |

# CHAPTER VII

## RELATION OF GRADES TO INTELLIGENCE WITH WORKERS AND NON-WORKERS

## 1935-1936 (1) - 1935- 1936 (2) - 1936-1937 (1)

In order to determine if there was a significant difference between the grade averages between workers and non-workers, the grades for those students used in Chapters II, III, and IV were listed according to quarter divisions of intelligence. Table XXII shows the averages in detail. It will be observed that the averages seem to fluctuate from semester to semester and within the quarter divisions. The first quarter division of NYA men and women students averaged lower than C one less time than non-working students. In general there was an increase in the grade averages as the quarter level was advanced.

A summary of these figures (Table XXIII) shows a slight positive average for all NYA quarter divisions except the second. This minus difference of 0.01 grade points is smaller than any of the other plus differences. The total NYA group in the first quarter division averaged 0.03 more than first quarter division non-workers; the third quarter division NYA group averaged 0.04 more than comparable non-workers, and the fourth quarter division NYA group averaged 0.01 more than comparable non-workers. The total NYA group exceeded the total non-working by 0.02 grade points for the three semesters examined for this study.

While these differences are very small, it seems reasonable to conclude that students who work do not make any lower grades than do non-working students of like intelligence. Perhaps they make slightly higher marks.

TABLE XXII

GRADE AVERAGES IN RELATION TO INTELLIGENCE

1935-36 (1)

| Percentile rank | CONTROL GROUP N | Men | N | Women | NYA GROUP N | Men | N | Women |
|---|---|---|---|---|---|---|---|---|
| 0-25 | 5 | 3.9360 | 6 | 3.9833 | 3 | 3.8566 | 7 | 3.9600 |
| 26-50 | 11 | 4.0300 | 11 | 4.4127 | 13 | 4.5992 | 9 | 4.2511 |
| 51-75 | 6 | 4.3666 | 11 | 4.7127 | 8 | 4.6525 | 12 | 4.3158 |
| 76-100 | 23 | 4.8439 | 19 | 4.926 | 21 | 4.6809 | 19 | 4.9468 |

1935-36 (2)

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 0-25 | 9 | 4.3466 | 6 | 3.9883 | 6 | 3.7216 | 8 | 4.1237 |
| 26-50 | 13 | 4.6500 | 12 | 4.3975 | 10 | 4.1730 | 9 | 4.2900 |
| 51-75 | 13 | 4.4900 | 8 | 4.8962 | 22 | 4.5222 | 14 | 4.4785 |
| 76-100 | 29 | 4.7786 | 26 | 4.8942 | 26 | 4.6665 | 21 | 4.7371 |

1936-37 (1)

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 0-25 | 13 | 3.5584 | 9 | 3.8444 | 11 | 4.0363 | 9 | 3.7011 |
| 26-50 | 13 | 3.9392 | 12 | 4.3250 | 15 | 4.0600 | 12 | 4.3516 |
| 51-75 | 16 | 4.1306 | 12 | 4.4225 | 14 | 4.4700 | 15 | 4.6260 |
| 76-100 | 39 | 4.5158 | 26 | 4.545 | 41 | 4.7573 | 23 | 4.6091 |

TABLE XXIII

GRADE AVERAGES IN RELATION TO INTELLIGENCE (SUMMATION)

| Percentile rank | N | 1935-36 (1) Control group | N | 1935-36 (1) NYA group | N | 1935-36 (2) Control group | N | 1935-36 (2) NYA group | N | 1936-37 (2) Control group | N | 1936-37 (2) NYA group |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1-25 | 11 | 3.9618 | 10 | 3.9290 | 15 | 4.2033 | 14 | 3.2350 | 22 | 3.6754 | 20 | 3.8550 |
| 26-50 | 22 | 4.2213 | 22 | 4.4568 | 25 | 4.5248 | 19 | 4.2284 | 25 | 4.1244 | 27 | 4.1896 |
| 51-75 | 17 | 4.5905 | 20 | 4.450 | 21 | 4.6447 | 36 | 4.5053 | 28 | 4.2557 | 29 | 4.5506 |
| 76-100 | 42 | 4.8811 | 40 | 4.8072 | 55 | 4.8332 | 47 | 4.7193 | 65 | 4.5275 | 64 | 4.7040 |

| | TOTALS | | | | DIFFERENCE |
|---|---|---|---|---|---|
| 1-25 | 48 | 3.9060 | 44 | 3.9384 | +0.03 |
| 26-50 | 72 | 4.2944 | 68 | 4.2869 | -0.01 |
| 51-75 | 66 | 4.4657 | 85 | 4.5078 | +0.04 |
| 76-100 | 162 | 4.7230 | 151 | 4.7295 | +0.01 |
| N | 348 | 4.4718 | 348 | 4.4888 | +0.02 |

# CHAPTER VIII

## CONCLUSIONS

For the semesters 1935-36 (1), 1935-36 (2), and 1936-37 (1) it was found with equated groups of NYA working students and non-working students that:

1. NYA men averaged a 16.09 class hour schedule, non-working men 16.07 hours; NYA women averaged 15.45 class hours and non-working women 15.98 hours.
2. NYA men exceeded comparable men groups in grade averages two out of three semesters; NYA women exceeded comparable women groups one out of three semesters. NYA workers, as a group, always made a higher grade average than did non-working groups.
3. The difference in grade averages for the three semesters studied, while slight, is probably a true difference greater than zero. The group difference of 0.14 grade points was the most statistically reliable with a critical ratio of 3.35. Men groups with a difference of 0.20 grade points show a critical ratio of 3.12 and women groups with a difference of 0.03 grade points show a critical ratio of only 0.46.

When the NYA group was compared with an equated group of students and the employment factor was not controlled, the following results were apparent:

1. NYA men carry a heavier class load than non-NYA workers. The reverse is true for NYA women.
2. The NYA group, both men and women, make better grades than the non-NYA group, both men and women, make better grades than the non-NYA working group. This grade average difference of 0.20 grade points is a reliable difference with a critical ratio of 5.85.

Dividing the intelligence ratings of the groups into quarters and comparing grade averages for the three semesters show that:

1. From the lower to the higher quarter divisions of intelligence there is a steady increase in grade averages for both NYA working students and non-working students.
2. All quarter divisions but the second in the NYA group made a slightly higher grade average than did like quarter divisions of non-working students.

From this it is concluded:

1. NYA workers, as a whole, do not carry an equal class load as compared to non-working students. This is not true when NYA students are compared to students carrying other employment.
2. NYA workers, as a group, exceed the non-working grade average and NYA workers also exceed the grade average of students who carry non-NYA employment.

3. An NYA working student in any quarter division of intelligence will generally equal or exceed the grade average of non-working students in the same quarter division. The difference is very small.
4. NYA work is beneficial rather than harmful to the scholastic record. This is more true for men than for women.

# APPENDIX

UNIVERSITY OF NEW MEXICO
Personnel Office

Name:_____Date:_____

PLEASE ANSWER THE FOLLOWING AND TURN THE SLIP IN. (Your assembly attendance will be checked with this sheet.)

1. Did you work during the first semester of this school year?
2. Approximately how many hours per month?_____
3. Doing what kind of work?_____
4. Approximate earning per month?_____
5. How many hours of this was NYA work?_____

***

1. Did you work during the second semester of last school year (1935-36)?_____
Approximately how many hours per month?_____
3. Doing what kind of work?_____
4. Approximate earning per month?_____
5. How many hours of this was NYA work?_____

***

1. Did you work during the first semester of last school year (1935-36)?_____
2. Approximately how many hours per month_____
3. Doing what kind of work?_____
4. Approximate earnings per month?_____
5. How many hours of this was NYA work?_____

TABLE XXIV

EMPLOYMENT QUESTIONNAIRE RESULTS
MEN 1936-37 (2)

| | N | Average hours per month |
|---|---|---|
| Regularily enrolled men | 800 | |
| Answered the Questionnaire | 591 | |
| Not working | 235 | |
| Working but did not give hours | 10 | |
| Working and gave hours | 346 | |
| NYA employment | 116 | 34.2 |
| Other employment | 282 | 96.2 |
| Total | 346 | 89.8 |

TABLE XXV

EMPLOYMENT QUESTIONNAIRE RESULTS
WOMEN 1936-37 (2)

| | N | Average hours per month |
|---|---|---|
| Regularily enrolled women | 613 | |
| Answered Questionnaire | 434 | |
| Not working | 301 | |
| Working but did not give hours | 9 | |
| Working and gave hours | 118 | |
| NYA employment | 61 | 41.7 |
| Other employment | 63 | 71.3 |
| Totals | 118 | 59.8 |

TABLE XXVI

EMPLOYMENT QUESTIONNAIRE RESULTS
TOTALS 1936-37 (1)

| | N | % | Average hours per month |
|---|---|---|---|
| Regularily enrolled students | 1413 | | |
| Number answering Questionnaire | 1025 | 72.5% | |
| Number answering who worked | 536 | 52.3% | |
| Average number hours employed by NYA workers | | | 36.2 |
| Average number hours employed by Non-NYA workers | | | 91.6 |
| Average number hours employed by All workers | | | 70.9 |

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Wagner, M. E. and others. "The Effect of Fera Employment Upon College Grades." School and Society 45:24-6 Jan 2 '37.

## Date Due

| | | | |
|---|---|---|---|
| SEP 3 '38 | | AUG 17 1962 | |
| FEB 15 '41 | | JUL 24 RECD | |
| MAR 14 1952 | | JAN 26 1963 | |
| AUG 9 | 1954 | DEC 27 RECD | |
| MAY 25 1955 | | MAR 20 1964 | |
| ~~NOV 25 1956~~ | | MAR 16 RECD | |
| DEC 9 | 1957 | | |
| DEC 30 RECD | | NOV 15 1965 | |
| | | NOV 1 2 RECD | |
| APR 13 | 1960 | JAN 30 1966 | |
| APR 9 - RECD | | | |
| | | JAN 3 RECD | |
| ~~OCT 2 1960~~ | | | |
| AUG 9 - RECD | | JAN 30 1969 | |
| | | MAR 3 RECD | |

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