A COMPARISON OF ACADEMIC ACHIEVEMENT AND SOCIAL PARTICIPATION OF THE ART STUDENT AND THE NON-ART STUDENT IN THE BOZEMAN SENIOR HIGH SCHOOL

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ABSTRACT

Through the teaching experience of the writer, plus the lack of information located in the review of literature, it was felt that a study should be conducted to evaluate an art program with respect to the achievements and activities of the art students. The problem was to determine if any difference exists in the academic achievement and/or social participation when comparing art students to non-art students.

After choosing the school, and selecting an equal number of art students and non-art students for this study, the data was obtained from the students' personal files in the general office and in the guidance office. This provided the information to determine the academic achievement of the students in each group. In order to obtain the data on social participation the writer, through the aid of the review of literature, designed a questionnaire that was administered to each student participating in this study.

The results of the study on academic achievement indicate that no significant difference was revealed when comparing the intelligence quotient of the art students with that of the non-art students. There was a significant difference when comparing the grade point average of the art students with that of the non-art students, the non-art students recording the higher score. When comparing the art grade of the art students, with their academic grade, the art grades were significantly higher.

The results of the study obtained by the questionnaire indicate that a significant difference was found between the art and the non-art students in the total number of clubs or organizations joined and/or official offices or positions held, within and/or not connected with the high school. No significant difference was found by comparing the art students to non-art students in the number of students participating in activities within or not connected with the school; those riding the school bus; having hobbies; or stating plans upon completion of high school.

The conclusion is that no significant difference exists between the art and the non-art students in academic achievement and/or social participation. However, the review of literature indicates a lack of previous study and research in this area.

The recommendations from the above findings are that additional studies should be conducted to determine: (1) the academic achievement and social participation in more and various sized schools, (2) if an art program enriches and aids achievement in academic subjects, (3) if social adjustment is found in an art program that is not found in academic subjects, (4) if extra-curricular activities affect mental and/or academic achievement, (5) if differences exist in attitudes, beliefs, actions, and appearance between the art and the non-art groups, (6) if a difference exists in the mental level of the art and non-art group, (7) if art grades show the art teacher grading easier than the academic teachers.

CHAPTER 1

INTRODUCTION

After teaching for a number of years, the writer has noted that the art program in many schools has taken on a new meaning for many administrators, teachers, parents, and students. The primary concern of the writer is that the art program to many is merely a subject in which to place the problem student, the student of low intelligence, and/or the student without definite plans for the future. In many instances the average or above average student is steered away from the art program for fear of lowering his grade point average, or encouraged to enroll in some other subject which is termed "more valuable" and/or less difficult for the student.

Similarly, the art student is often considered to possess attitudes, beliefs, actions, and appearances uncommon to the so called "normal student". The conception that artistic individuals are incongruous may merely distinguish the individual differences that prevail in all walks of life. To support this contention Leon Winslow stated that "art education should obviously be regarded as one means of securing mental and emotional balance in living".[1]

In this age of intellectualadvancement, art, the oldest recorded form of communication is increasingly present in the life of any community - local, national, or world wide. From the standpoint of

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[1]Winslow, L. L., The Integrated School Art Program, p. 4.

content and of psychological method, art as a school subject is somewhat, though not radically different from the other school subjects. The art program attempts to provide enriched experiences which builds upon, rather than separates from, the academic subjects. Art should not be considered merely as an optional subject to be taken by a select few or just when convenient, but, a necessity in the student's total educational growth as pointed out by Klar:

> If the fullest measure of benefit is to be realized from the teaching of art, it is at once evident that we shall have to conceive of art education not merely as an obligation of the entire curriculum, but as a major objective of a school study as well.[2]

The position of art in schoolhas diverse effects on society. The Committee on Secondary School Curriculum expresses the view that in order to be totally effective in a school program an understanding and a purpose must be formulated, as expressed in the following quotation:

> The best plans for art education are likely to prove academic and unrelated to the rest of life unless they give due consideration to the attitudes toward art prevalent in society; integrative curriculums, psychological understanding of the individual, and advanced teaching techniques are inadequate without some understanding of what art means to the average person in the community and of why it means what it does. In the United States, these generalizations about the place of art and esthetic values in the life of the people which are intended as guides in education must also seek to define what lines of future development seem most advantageous in relation to democratic ideals.[3]

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[2]Klar, W. H., C. V. Kirby, and L. L. Winslow, Art Education in Principle and Practice, pp. 10-11.

[3]Committee on the Function of Art in General Education, The Visual Arts in General Education, p. 138.

Art, therefore maintains a prominent place in the study of every citizen, as suggested by the Committee on Secondary School Curriculum, "art and beauty are as closely interwoven with other subjects and with everyday life in school, as they are with other values in life beyond the school walls".[4]

The experience of the writer and the study of past history has indicated the great need for art in school curriculums. The use of art education can become more apparent by the study of the effects of art on high school students.

Statement of the Problem

The problem of this study was to determine if differences exist between the academic achievement and social participation of the student enrolled in art and the student not enrolled in the art program.

Procedure

A review of literature was employed to determine if the academic achievement and social participation of art students as compared to non-art students had been previously studied and with what results. The survey was to also include the investigation into the status and importance of art with respect to academic subjects in high school. The final purpose was to provide information and a guide upon which to

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[4]Ibid., p. 156.

construct a questionnaire to determine the social participation of art and non-art students.

The Bozeman Senior High School was selected for the sampling of art and non-art students, due to it's size and location. The final approval for this study was obtained from the Bozeman High School administration through the assistance of the Education Department of Montana State College.

To obtain information for this study, the general office and guidance department of the senior high school provided school records. From these were taken the sampling of students, intelligence quotients, grade point averages, and a minimum of three academic subject grades plus the art grade.

By numerical spacing on alphabetized lists of students per class a suitable random sample of the high school was obtained for this survey. Any indication of faulty reporting or insufficient information in the intelligence quotient, grade point average, academic grades recorded or the questionnaire eliminated the student from this study.

To determine the extra-curricular activities participated in by the students involved in this study a questionnaire was constructed with the survey of literature and then administered to the Sophomore, Junior, and Senior students by the school guidance personnel and the writer.

Limitations

The limitations of this study were:

1. The students involved in this study were from a single high school, which limited the study to only one school sampling, in only one community. In this study the individual school may not indicate

the true picture of other schools in the same district nor schools of similar districts.

2. A strong factor that influences the results of this study could well be the university, that operates within the same city as the high school. The university indicates a definite and apparent effect on the city and community as well as the high school.

Definition of Terms

In order to insure clarity for the reader, certain terms are defined by the writer. An "art student" is any student enrolled in the art program of the school under study during the school year 1962-1963, and not necessarily a student who has taken art previously. A "non-art student" is any student randomly selected from the school under study during the school year 1962-1963, who is not enrolled in the art program.

The "academic subjects" are subjects that are basic for all students and are required for graduation from high school.

The first step in conducting this study was a search of literature for previously recorded studies pertaining to art programs in various schools and the reference to social participation by art students. The results of this review of literature in art education is presented next.

affirmed by Manuel Barkan, "although the arts are becoming increasingly popular, participation in the arts as a general experience for most people is still relatively infrequent".[6]

Through the lack of experience and understanding, the art program in many schools has, to some extent, been hindered as Harold Taylor indicates:

> The result has been to drive the creative artsand the creative attitudes out of the schools and colleges and to crowd our curriculum with more requirements, more tests, more grades, and more machinery for destroying the initiative and spontaneity of the American student.[7]

A trend in art has been to subvert an age old concept that art should not be catalogued with academic subjects. Emphasis on the value of art education is supported by many professional people as in the statement expressed by Bradford Murphey, M.D., Psychiatrist:

> Without control and discipline of our emotions in some form of artistic expression and appreciation, our intellects are, as a rule, more destructive than constructive and more dangerous than reassuring.....I think it can be safely stated, and without fear of contradiction, that art in its various forms has done more for most people than reason or intellect ever could.[8]

A comprehensive survey of literature has failed to reveal any statistics or information concerning the intellectual or academic achievement level and/or social participation common to most art students. All literature, particularly the more recent, stresses the value and purpose

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[6]Barkan, Manuel, A Foundation for Art Education, p. 29.

[7]Taylor, Harold, "The Art in Education", Teachers College Record, vol. 63, no. 3, p. 171.

[8]Murphey, Bradford, "A Psychiatrist Looks at Art", School Arts, vol. 43, no. 10, p. 337.

of art in our school programs, yet fails to explore the advantages to all students and to protect art from the heavily emphasized academic subjects. The meaning of art was expressed without actually defining the art student by Herbert Read, who said, "Education has a two-fold purpose: to develop the personality and the capacity of the individual, and to effect an understanding 'between man and man'".[9]

The sum total of art programs in various schools is what art, through our culture, may contribute to the world as supported by the following statement of Harold Taylor:

> A new culture will grow in America when we allow the arts to take their rightful place in our lives and in our schools and colleges, so that from early childhood we may be drawn towards the things and ideas which are beautiful and away from those which are ugly. This country may develop the greatest military power, the greatest scientific discoveries, the largest economy, but without the arts and without understanding, we have nothing to give the world.[10]

Through the combined efforts of The United Nations Educational, Scientific, and Cultural Organization (UNESCO) and a number of interested art educators throughout the world, the International Society for Education Through Art (INSEA) was established in 1951. Its aims and functions are well described in its brief and well-phrased constitution, but provides little discription as to the academic and social activities expected of art students. All indications are towards stressing and improving art education and support is finally being developed by various organizations

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[9]Read, Herbert, Education Through Art, p. 5.

[10]Taylor, op. cit., p. 175.

and public education, slowly but deliberately. However, before art can advance to a rightful place in public education more is needed to be known about the individual student and his needs.

In conclusion, the objectives of art education must include those of assisting adolescents to develop first, an organized pattern of personality and second, a reasonably consistent philosophy of life including a system of values going even beyond those of an aesthetic character. The sequence of physical, intellectual, emotional and social developments peculiar to adolescents demands especially careful planning of an art programme for this age group.

CHAPTER 3

MENTAL AND ACADEMIC ACHIEVEMENT

In obtaining the data to determine if differences exist between the academic achievement and social participation of the student enrolled in art and the student not enrolled in the art program, four areas must be considered: (1) selection of students in this study, (2) intelligence quotients, (3) grade point averages, and (4) comparing the art and the academic subject grades.

Selection of Students

Through the co-operation of the art instructor, the selection of students in the art program for the academic year 1962-1963 was secured from the Bozeman Senior High School. A corresponding number of non-art students from the Sophomore, Junior, and Senior classes was selected.

To obtain comparable samples of art and non-art students in each of the three classes, Sophomore, Junior, and Senior, the number of art students in a given class was divided into the number of non-art students in that class. This gave the spacing for the selection of non-art students from an alphabetized list per class. In the case of the Sophomore class, every eleventh student was selected; in the case of the Junior class, every nineteenth student was selected; and in the case of the Senior class, every fifth student was selected. In certain instances if sufficient information was unavailable for particular students, these art or non-art students were then excluded from this study. A list of students for each class is shown in Table 1.

TABLE 1. NUMBER OF STUDENTS PER CLASS IN THIS STUDY, TAKEN FROM THE BOZEMAN SENIOR HIGH SCHOOL - 1962-1963.

Class	Art Students	Non-art Students	Selected Number in Each Class
Sophomore	22	21	43
Junior	11	12	23
Senior	32	33	65
Total	65	66	131

Insufficient information was discovered on two Sophomore, two Junior, and five Senior students, leaving a total of forty-one Sophomore, twenty-one Junior, and sixty Senior students remaining in this study. A total of one hundred and twenty-two students were included in the study of academic achievement and social participation.

Intelligence Quotient

The intelligence quotient[1] from the Otis Quick-Scoring Mental Ability Test for each individual in the study was obtained from the permanent files of the guidance department. The Otis Mental Ability Test is administered to all students in the Bozeman school system at the beginning of their sophomore year and the results recorded in their individual files. Certain students, such as the senior and junior classes, had scores that would date back one or two years.

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[1] See Appendix C, Table 1.

The Senior class has the highest median intelligence quotients for both the art and non-art students. Table 2 provides a break-down of the respective high, low, and median intelligence quotient for each class, plus the mean for the total number of students per group.

TABLE 2. DISTRIBUTION OF INTELLIGENCE QUOTIENTS,PER CLASS IN THE BOZEMAN SENIOR HIGH SCHOOL - 1962 - 1963

Group	High I.Q.	Low I.Q.	Sophomore Class Median	Junior Class Median	Senior Class Median	Mean Per Group
Art Students	129	82	107.5	115.0	114.5	108.5
Non-art Students	134	85	110.5	103.0	111.5	110.8

The greatest variation in medial intelligence quotient is shown by the non-art students, by a score of 107.5 to 114.5. Yet, the art students maintain a higher mean intelligence quotient in all classes and groups, with the exception of the Sophomore class, who have a median of 107.5 to 110.5.

The largest number of art students registered an average intelligence quotient score of approximately 112, whereas the non-art students an average of approximately 110. The non-art students show a tendency to include some students with very low and some with a high intelligence quotient, with the art students having a larger number of students around the center of distribution, as shown in Figure 1.

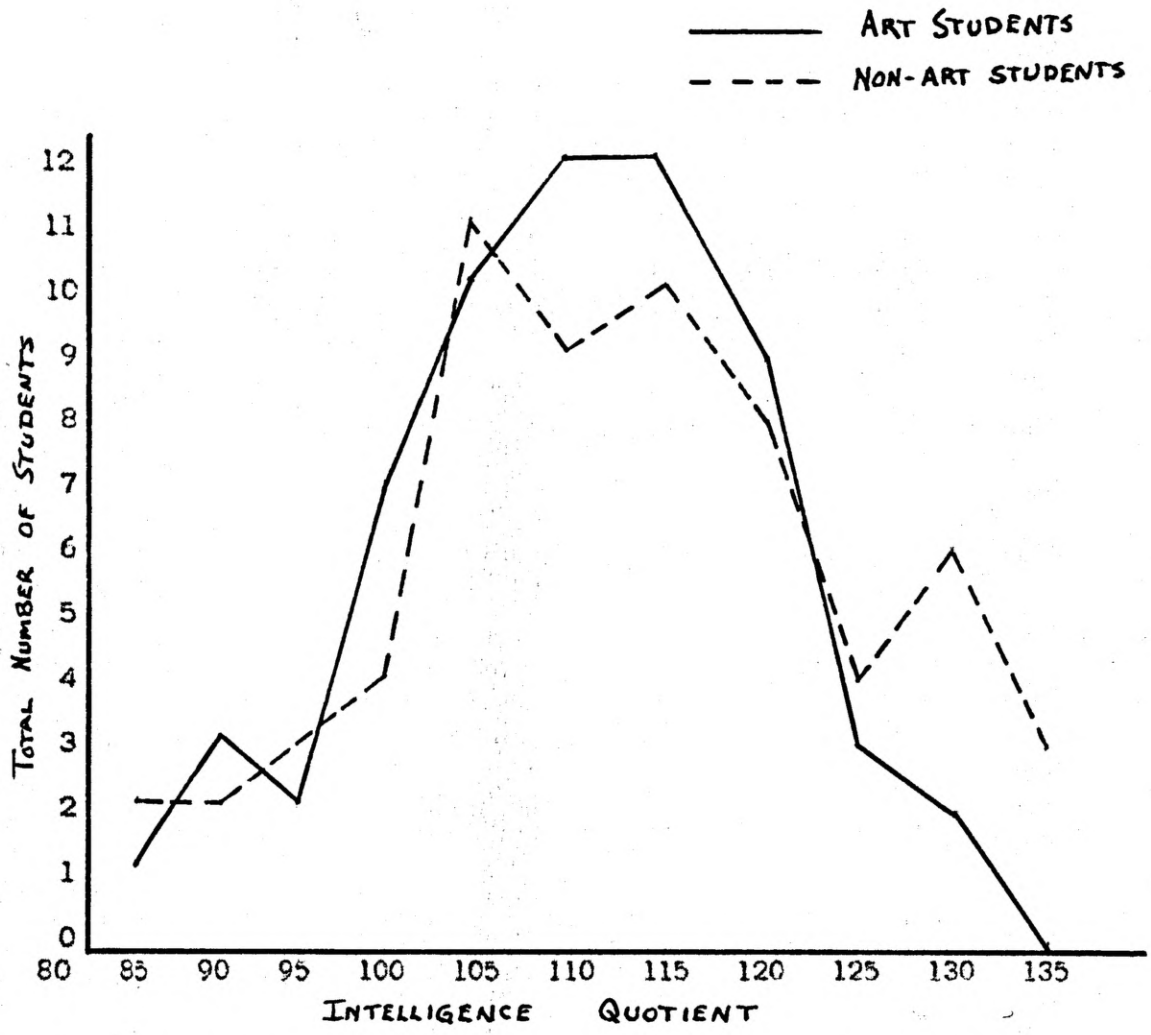


Figure 1. Number of Students With or Within -4.0 Points of the Particular Recorded Intelligence Quotient.

Figure 1 shows the non-art students recording the highest intelligence quotients and a wider range of intelligence quotients while the art students tend to be grouped closer to one another. In order to determine if any difference exists in the previous data, or whether it is merely a chance variation, it is necessary to test the differences between the means.

The null hypothesis states that no significant difference exists between the art student and the non-art student in respect to the level of intelligence based on the results of the Otis Quick Scoring Mental Test. The alternative hypothesis stated that the non-art students records an intelligence quotient higher than the art students. In order to test the null hypothesis a Z-score was computed to test the differences between the means. The required statistics to compute the Z-score is recorded in Table 3.

TABLE 3. COMPUTED MEAN, STANDARD DEVIATION, AND TOTAL NUMBER OF STUDENTS FOR THE ART GROUP AND THE NON-ART GROUP

Group	Mean	Standard Deviation	Number of Students
Art Students	108.5	9.60	61
Non-Art Students	110.8	12.27	62

The standard error of the mean was computed as 1.23 for the art students and 1.56 for the non-art students. The Z-score was computed as 1.35. On a one tailed test 1.35 was significant at the 8.85% level. Since this did not reach the 5% level of significance the null hypothesis

of no difference was accepted.

The median was higher for the Junior and Senior art classes, yet, the mean showed the non-art students scoring higher than the art students. The Z-score, when applied on a one tailed test at the 5% level, showed that the difference between the intelligence level of the art students compared to the non-art students is not significant.

Grade Point Average

The grade point average was secured from the permanent files of the guidance department for the Junior and Senior classes. The grade point average for the Sophomore class was calculated by the writer from each students' final grades by the identical system employed by the guidance director for the Junior and Senior classes.

In calculating the grade point average all subjects' final grades were averaged, with the exception of Physical Education, Music, Choral, and Orchestra. Numerical figures were assigned to each letter grade to determine a numerical grade point average, ranging from one hundred to fifty, as shown in Table 4.

TABLE 4. THE NUMERICAL VALUE ASSIGNED TO EACH LETTER GRADE TO CALCULATE THE GRADE POINT AVERAGE

Letter Grade	Numerical Value
A+	100
A	94
A-	92
B+	90
B	88
B-	86

C+	83
C	80
C-	78
D+	76
D	74
D-	72
F	50

The above numerical values representing the various letter grades were the standard scale used by the Bozeman Senior High School, and would probably vary with other schools and other school districts.

The data on grade point average indicates that the art student has a mean score of 76.75, and the non-art student a score of 84.24. The Junior class maintains the highest grade point median for the art students and for the non-art students the Senior class was high. Table 5 provides a break-down of the respective median grade point averages for each class and the mean per group.

TABLE 5. DISTRIBUTION OF GRADE POINTS, PER CLASS IN THE BOZEMAN SENIOR HIGH SCHOOL - 1962-1963

Group	Sophomore Class Median	Junior Class Median	Senior Class Median	Median Per Group
Art Students	84.50	85.51	80.50	76.75
Non-Art Students	83.16	83.50	83.75	84.24

The Senior non-art students had a higher grade point median than the Senior art students, showing the closest median in the Sophomore class with a separation of 1.34. The greatest separation was in the Senior class with a difference of 3.25. However, the grade point mean when comparing the total art and non-art student groups had a difference of 7.49.

The largest number of art students maintained a grade point average of approximately 85.00 and the non-art students maintained an average of approximately 90.00, with or within a -4.0 points. There was a sharp rise at 75.00 for both the art and the non-art students, as shown in Figure 2.

The non-art students had a higher mean grade point and were grouped between 70 and 100, while the art students were grouped between 55 and 100. In order to determine if any difference existed in the previous data, or whether it is merely a chance variation, it is necessary to test the difference between the means.

The null hypothesis tested, was that no significant difference existed between the art student and the non-art student in respect to the grade point average level based on the data gathered from the students permanent files other than that expected by chance. The alternative hypothesis was that the non-art students' grade point average was significantly higher than the art student's. In order to test the null hypothesis a Z-score was computed to test the difference between the means. The required statistics to compute the Z-score is recorded in Table 6.

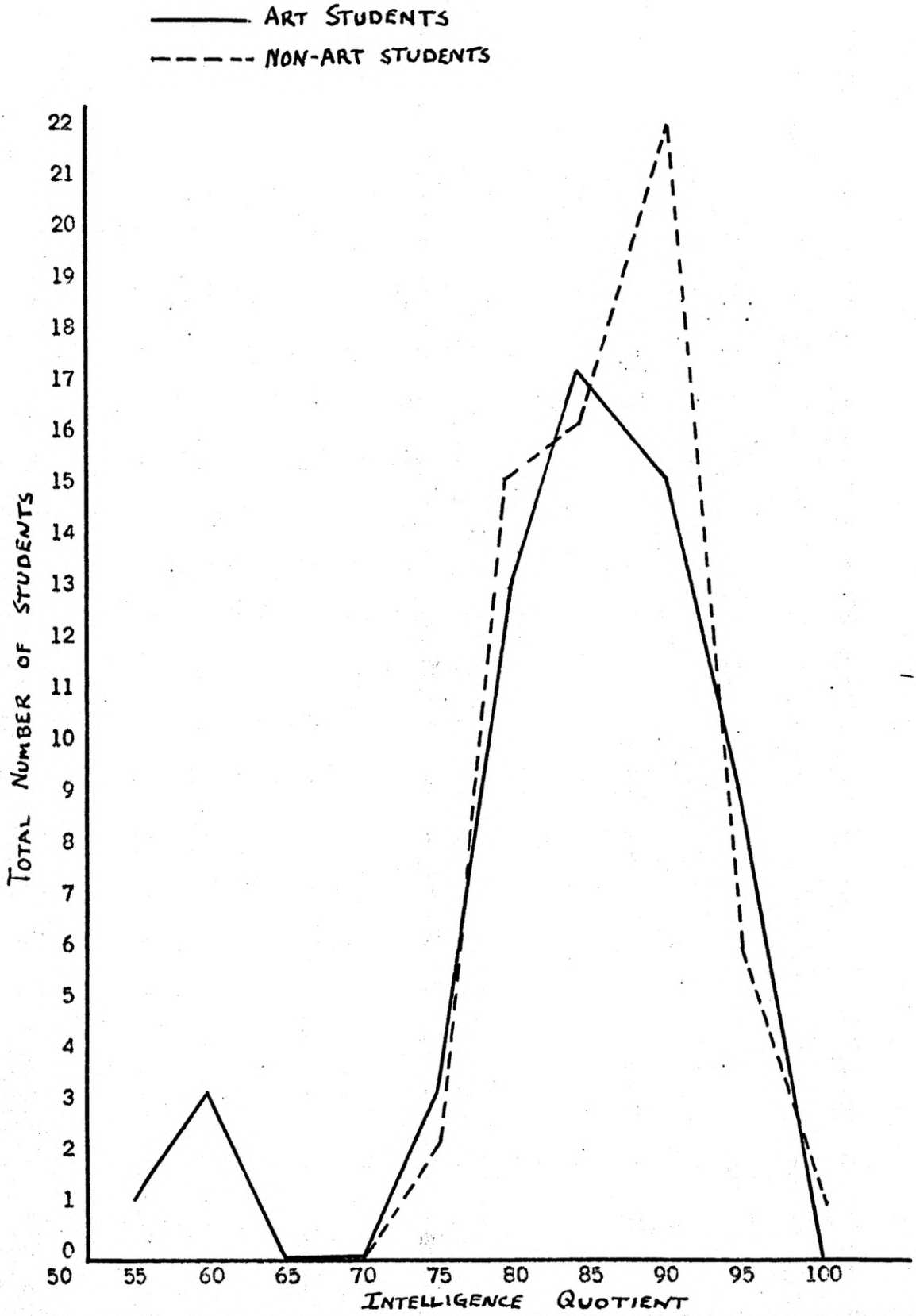


Figure 2. Number of Students With or Within -4.0 Points of the Particular Recorded Grade Point Average.

TABLE 6. COMPUTED MEAN, STANDARD DEVIATION, AND TOTAL NUMBER OF STUDENTS FOR THE ART GROUP AND THE NON-ART GROUP

Group	Mean	Standard Deviation	Number of Students
Art Students	76.75	6.06	61
Non-art Students	84.24	5.00	62

The standard error of the mean was computed as 0.78 for the art students and 0.63 for the non-art students. The Z-score was computed as 7.49. On a one tailed test 7.49 is significant beyond the .01% level. Since this was well over the 5% level of significance the null hypothesis of no difference was rejected. Therefore, the alternative hypothesis, that the grade point average for the non-art students was significantly higher than the grade point average of the art students, was accepted.

The median was high for the Sophomore and Junior art classes, yet, the mean showed the non-art students scoring higher grade point averages than did the art students. The Z-score, when applied on a one tailed test at the 5% level, showed that the difference between the grade point average levels of the art students compared to the non-art students is significant.

The art grade was recorded directly from the art instructor's permanent grade-book, and consisted of the final grade which had been recorded in the general office's permanent files.

To obtain a minimum of three additional academic subject grades for each art student within this study special permission was obtained to use the general office's permanent files. Five major subject areas, namely English, History, Government, Mathematics and Science, were chosen to provide the necessary grades. A more comprehensive description of subject areas from which grades were taken is shown in Table 7, which actually lists the subjects used for each particular class.

TABLE 7. SUBJECT AREAS AND COURSES USED AS A BASIS OF COMPARISON OF ART GRADES WITH ACADEMIC SUBJECT GRADES

Class	English	History	Government	Mathematics	Science
Sophomore	English I	World		Plane Geom. Algebra Gen. Math.	Biology
Junior	English II	World		Plane Geom. Algebra Gen. Math. Solid Geom.	Biology
Senior	English III	World	American	Gen. Math. Algebra Trigonometry	Chemistry Indust. Sc. Biology

Appendix C, Table 2 provides a comprehensive list of the permanent grades for the art students included in this study. To determine if a significant difference existed between the art grades and the academic subject grades the difference between the means was tested by computing a Z-statistic.

The null hypothesis tested was that there was no significant difference between the art grades and the academic grades. The alternative hypothesis stated that the mean academic grade was significantly lower than the mean art grade for the art students. In order to test the above null hypothesis a Z-score was computed to test the differences between the means. The required statistics to compute the Z-score are recorded in Table 8.

TABLE 8. COMPUTED MEAN, STANDARD DEVIATION, AND TOTAL NUMBER OF STUDENTS FOR THE ART GRADE AND THE ACADEMIC GRADE

Group	Mean	Standard Deviation	Number of Students
Art Grade	6.30[2]	1.88	61
Academic Grade (averaged)	7.18	2.35	61

The standard error of the mean was computed as 0.24 for the art students and 0.31 for the academic subjects. The Z-score was computed as 2.26. On a one tailed test 2.26 was significant beyond the 1.19% level. Since this was well beyond the 5% level of significance the null hypothesis of no difference was rejected and the alternative hypothesis, that the academic grades were significantly lower than the art grades, was accepted.

By computing a Z-score it was determined that the academic grades were significantly higher than the art grades.

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[2] A+ = 1, A = 2, A- = 3...F = 13

Summary

The one hundred and twenty-two students selected for this research project provided a random sample of the Bozeman Senior High School. Through the cooperation of the administration and the guidance department adequate data was obtained from the permanent files on each student.

The mean intelligence quotient, as determined by the Otis Quick Scoring Test, for the art student was 108.5 and for the non-art student 110.8. The difference between the means was tested by means of a Z-statistic and found to be not significant.

The data showed the non-art students had a mean grade point average of 84.24 as compared to a mean of 76-75 for the art students. The difference between the means was tested by means of a Z-statistic and found to be significant at the 5% level.

In selecting five major subject areas; English, Mathematics, Science, Government, and History, the comparison between the art and the academic grades were made, by using the art grade and a minimum of three academic grades. The results showed that the art grades were significantly higher, at the 5% level, than the academic grades when tested with a Z-statistic for a one tailed test.

CHAPTER 4

SOCIAL PARTICIPATION OF HIGH SCHOOL STUDENTS

In obtaining the data on social participation of high school students, two areas must be considered: (1) content and distribution of the questionnaire and (2) results of the questionnaire.

Content and Distribution of the Questionnaire

The questionnaire, Appendix B, was designed for the purpose of gathering information for the comparison of the art and non-art students' participation in school and community activities. The study was undertaken to determine the social and personal participation of the art and non-art students.

To accumulate the required data on each student, the Sophomore and Junior class students were individually presented with the questionnaire within their respective class-rooms by the high school guidance counselor. The students were requested to read the questionnaire carefully and answer the questions as accurately as possible, they were also informed that cooperating in this research problem was strictly voluntary. The returns were 88% participation.

Since the senior class graduated prior to the collection of the data it was necessary to contact 40% of the students through the government mails by forwarding the letter to the students, Appendix A, the questionnaire, Appendix B, and a stamped self-addressed envelope. The remainder of the Senior class, 60%, was contacted by a personal telephone conversation. The conversation consisted of informing the student that a study

was being conducted by a graduate student attending Montana State College and requested their assistance in answering twelve short questions pertaining to their participation in social activities within the school and within the community during the academic school year 1962-1963. The returns of the questionnaire were 79% from the students contacted through the mails and 100% from the students contacted by telephone. The total number of replies to the questionnaire was 105 students out of a possible 122 students, indicating an 86% return.

Results of the Questionnaire

The purpose of question number one on the questionnaire was to determine the percent of students limited in their participation of school activities by having to ride the school bus home directly after school. The students in this study indicated that for the sample, nine art students and nine non-art students rode the school bus, indicating no significant difference.

To give a more accurate summary for the participation of the art and non-art students not connected with the high school it is necessary to combine questions two, six, eight, and ten of the questionnaire. The total number of non-art students and art students involved in church activities was 21 to 19 respectively; in athletics not connected with the school, 16 to 14 respectively; and in official offices or positions not connected with the school 16 to 15 respectively. The art students held more memberships in clubs or organizations not connected with the school by a figure of 33 to 27. Figure 3. shows the comparison between the art

and non-art students.

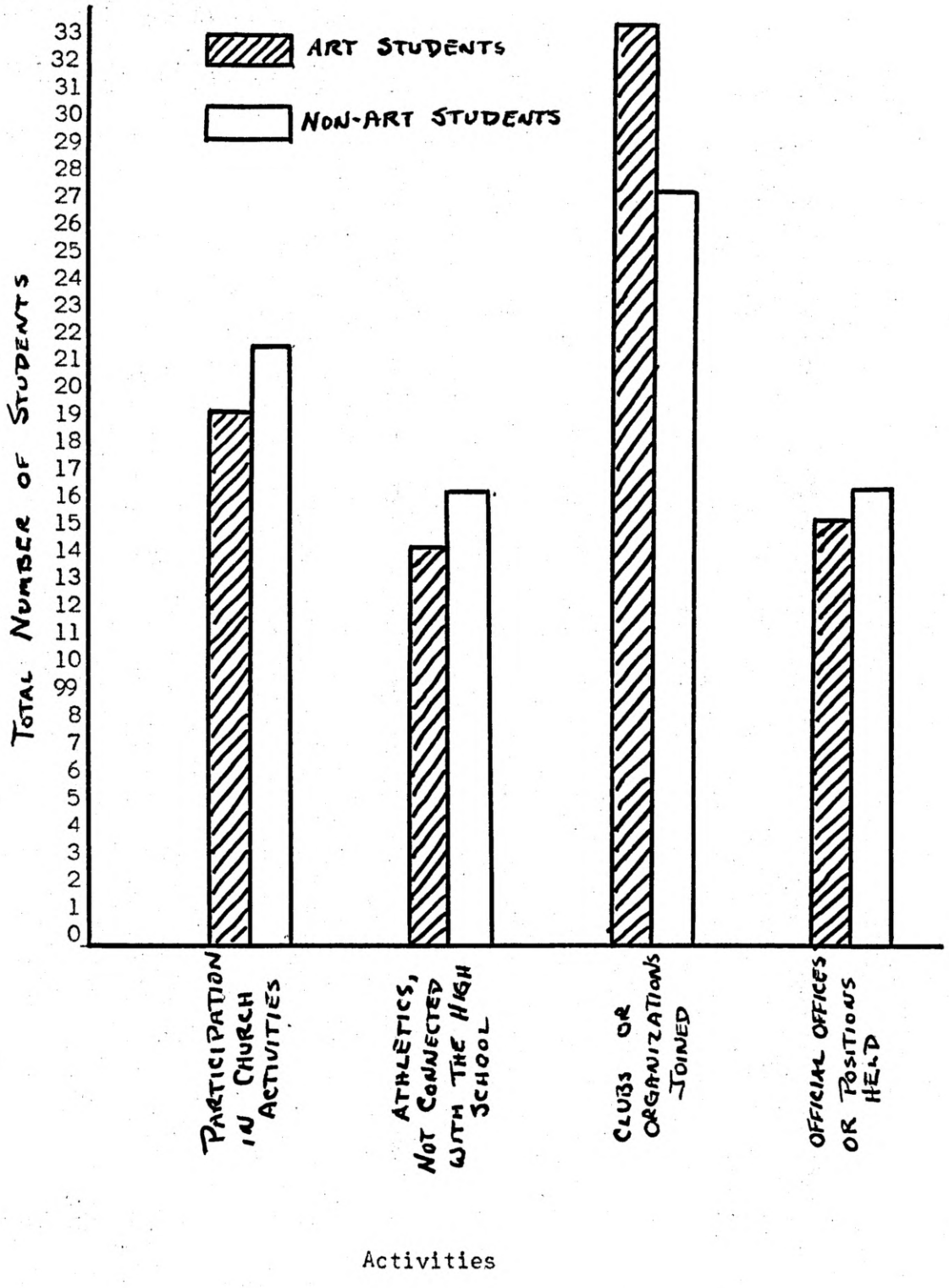


Figure 3. The Comparison of Art and Non-art Students in Activities Not Connected with the High School

Although the non-art students were more active in the out-of-school activities than the art students in three of the areas, the art students led in the over-all number of activities by 81 to 80 students. In order to determine if any significant difference exists between the number of activities participated in by the art students and those of the non-art students it is necessary to apply the chi square test of significance.

The null hypothesis tested was that the distribution of the 81 activities for the art students and the 80 activities for the non-art students does not differ from what is expected by chance. The required statistics to compute chi square is recorded in Table 9.

TABLE 9. THE EXPECTED AND OBSERVED PARTICIPATION OF THE ART STUDENTS AND THE NON-ART STUDENTS

Art Students		Non-art Students	
Expected	80	Expected	81
Observed	81	Observed	80

The value of chi square was found to be .025 with one degree of freedom, which was not significant. Therefore, the null hypothesis of no difference between the groups was accepted. The art students compared to the non-art students did not show any significant difference with respect to participation in activities not connected with the high school.

The third question of the questionnaire was used to determine what

percent of the students were limited in their participation of school and community activities by having to be employed part-time to earn additional money. The statistics revealed that 21 non-art students were employed as compared to 19 art students, indicating no significant difference.

To determine the extent of student participation in high school activities questions number four, five, seven, and nine were selected from the questionnaire. In three of the four questions the art students recorded more participation than the non-art students, as in intramural athletics, 29 to 23 respectively, in clubs or organizations within the school, 49 to 41 respectively, and in official offices or positions within the school, 18 to 10 respectively. The non-art students were higher in only one area, inter-school athletics, 25 to 23 students, as shown in Figure 4.

The art students were higher in the total number of participants, 119 to 99 students, over the non-art students, even though the non-art students were more active in inter-school athletics. In order to determine if any significant difference exsists between the number of activities participated in by the art students and those of the non-art students it is necessary to apply the chi square test of significance.

The null hypothesis tested was that the distribution of the 119 activities for the art students and the 99 activities for the non-art students does not differ from what is expected by chance. The required statistics to compute chi square is recorded in Table 10.

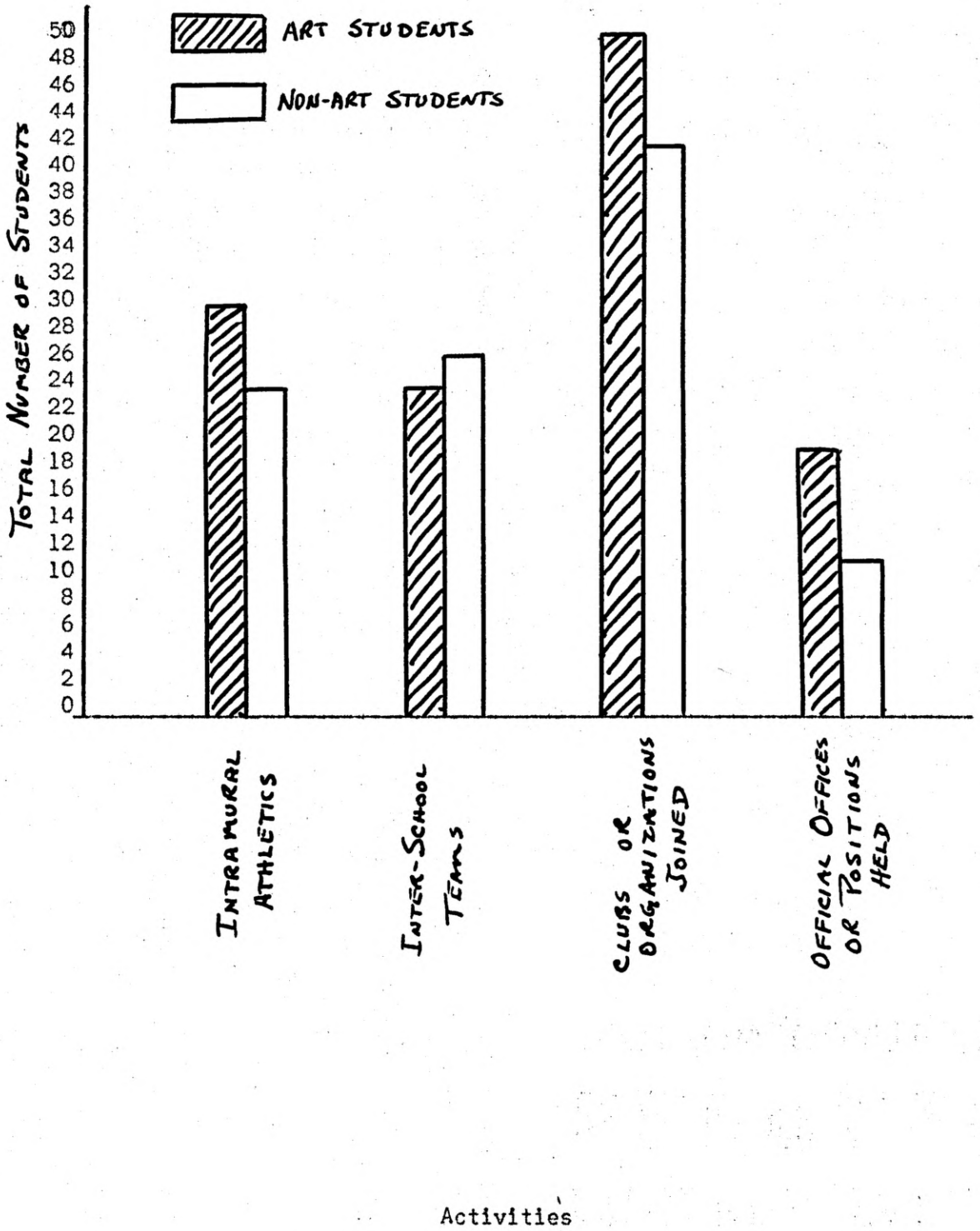


Figure 4. The Comparison of Art and Non-Art Students in Activities Within the High School.

TABLE 10. THE EXPECTED AND OBSERVED PARTICIPATION OF THE ART STUDENTS AND THE NON-ART STUDENTS

Art students		Non-art students	
Expected	108	Expected	110
Observed	119	Observed	99

The value of chi square was found to be 2.17 with one degree of freedom, which was not significant. Therefore, the null hypothesis of no difference between the groups was accepted. The art students as compared to the non-art students did not show any significant difference with respect to participation in activities connected with the school.

To summarize the above findings it is necessary to not only compare the number of students participating in the various activities, but also compare the total number of clubs or organizations and/or official offices or positions that the art and the non-art students joined or positions held. questions number seven, eight, nine, and ten of the questionnaire, Appendix B, there is a second part to the question where the students were to circle the total number of organizations joined or held. The data indicated that the Sophomore art students led by 92 to 73 in clubs joined and/or positions held, the Junior art students by 73 to 31 joined or held, as shown in Figure 5.

In order to determine if any significant difference exists between the number of clubs joined and/or positions held by the art students and compared to the non-art students it is necessary to apply the chi square test of significance.

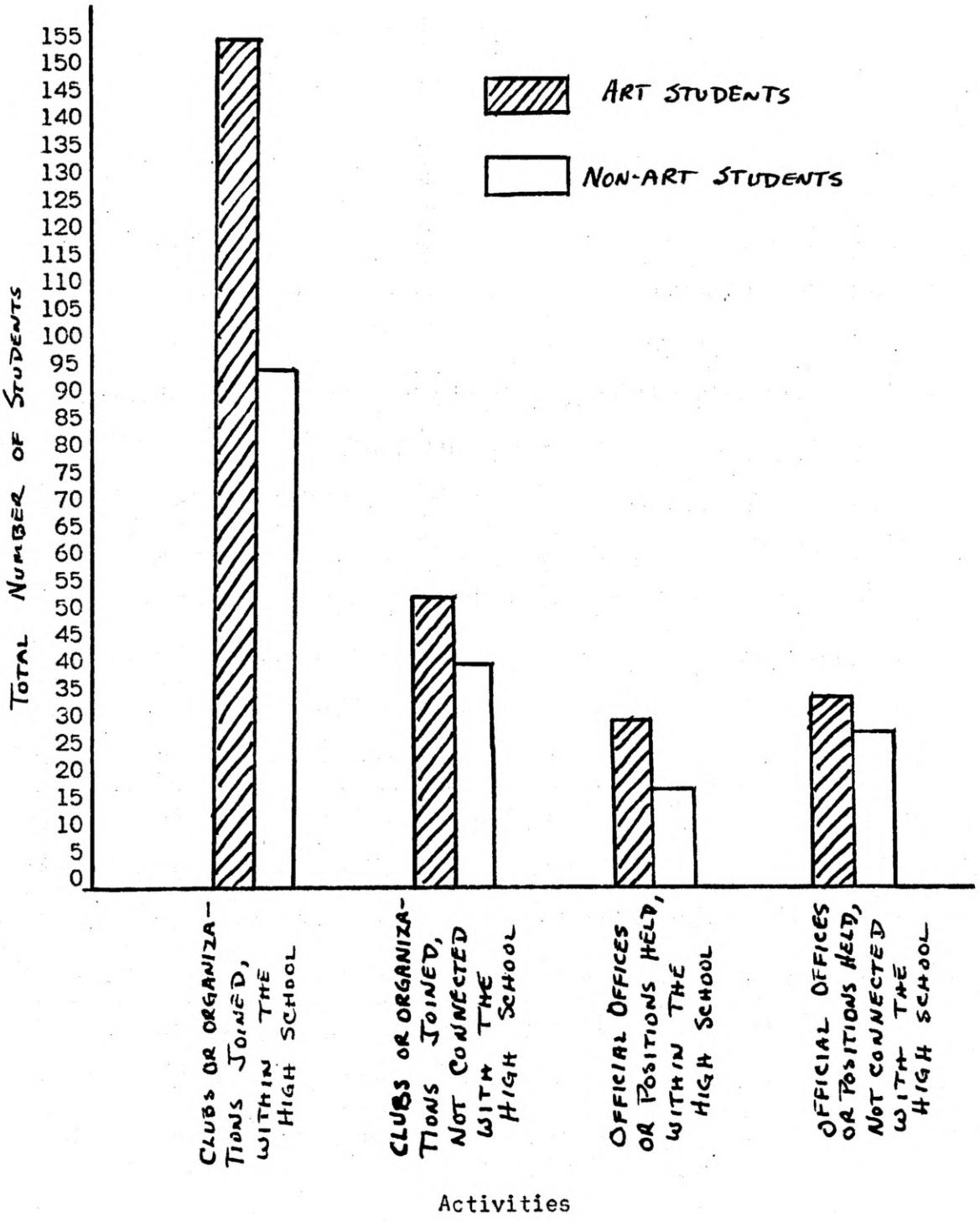


Figure 5. The Comparison of Art and Non-Art Students in the Total Number of Clubs or Organizations Joined and/or the Official Offices or Positions Held.

The null hypothesis tested was that the distribution of the 261 clubs joined or positions held by the art students does not differ from what is expected by chance as compared to the 171 for the non-art students. The alternative hypothesis predicts that the art students joined or held significantly more clubs or positions than did the non-art students. The required statistics to compute chi square is recorded in Table 11.

TABLE 11. THE EXPECTED AND OBSERVED PARTICIPATION OF THE ART STUDENTS AND THE NON-ART STUDENTS

Art Students		Non-art Students	
Expected	214	Expected	218
Observed	261	Observed	171

The value of chi square was found to be 19.4 with one degree of freedom, which is significant at the 5% level. Therefore the null hypothesis was rejected and the alternative hypothesis, stating that the art students were significantly higher than the non-art students in the number of clubs joined or positions held, was accepted.

Question number eleven on the questionnaire, Appendix B, was designed to determine the number of students who may make valuable use of leisure time. The art students led the non-art students by 48 to 39, in the number of pupils who held active hobbies during the school year 1962-1963. It is apparent that no significant diffence exsisted between the two groups without applying the chi square test.

The twelfth and final question of the questionnaire, Appendix B, provided a choice of plans for after high school graduation. The responses were strong in support of taking advanced educational training, with both the art and non-art students having identical totals of 43. In the remaining three selections, plans for marriage, for military service, and for work after graduation, a greater number of the art students than non-art students recorded yes as shown in Figure 6.

The score of 43 to 43 for advanced educational training by the art and non-art students indicates the similarity between the two groups. The number of art students compared to non-art students marking work, marriage, or military service by 7 to 5, 3 to 2, and 9 to 11 respectively, shows the similarity of the groups.

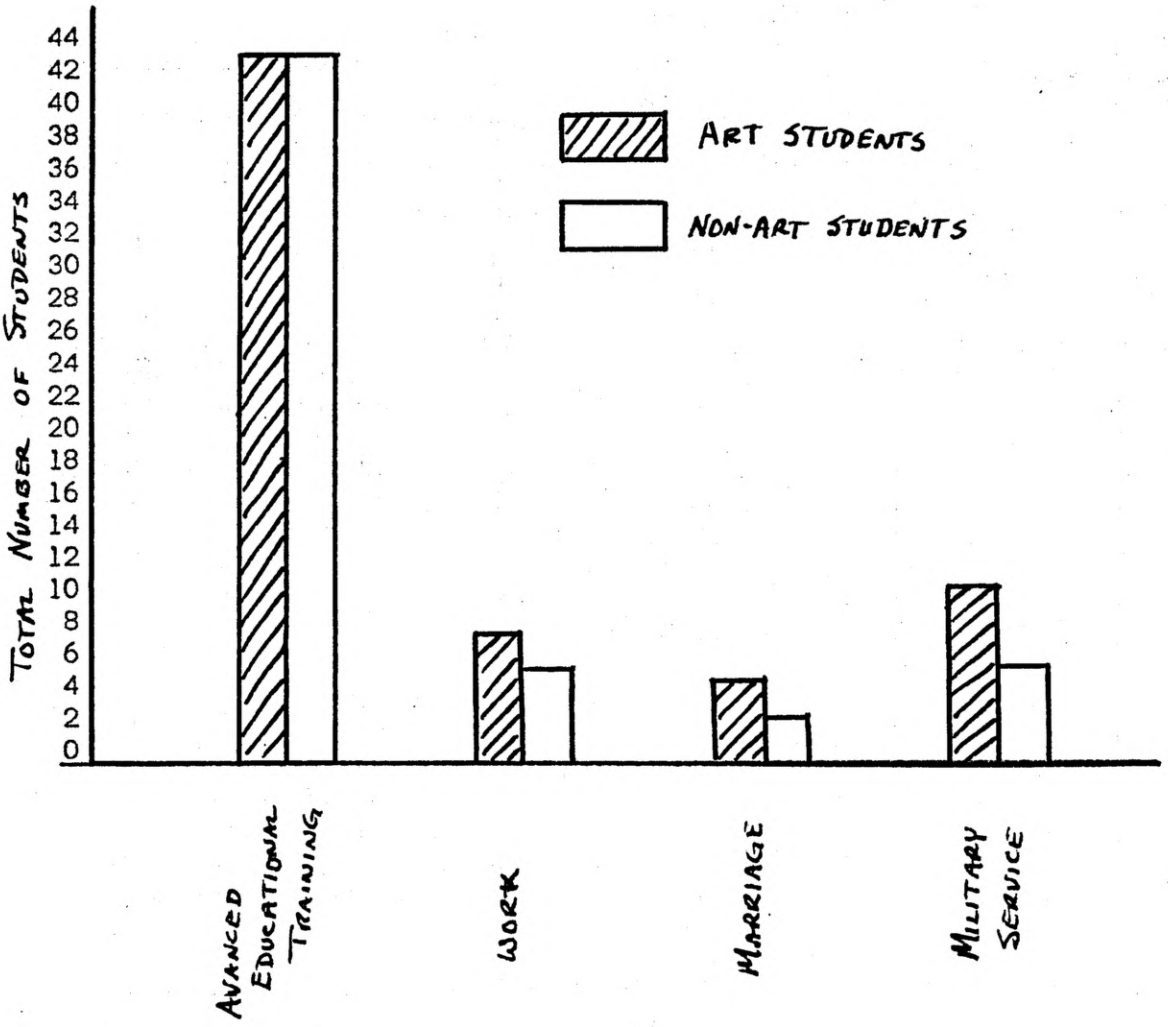


Figure 6. The Total Number of Art and Non-Art Students, Indicating Their Plans Upon Completion of High School

Summary

By constructing, giving, and evaluating the questionnaire, for all art students and non-art students involved in this study, it was determined that:

1. A significant difference does exist between the total number of clubs or organizations joined and/or official offices or positions held by the art students over the non-art students.

2. No significant difference exists between the art students and the non-art students as to the number of students participating in activities within or not connected with the high school.

3. No significant difference exists between the art students and the non-art students as to the number of students riding the bus, having a hobby, or stating plans upon completion of high school.

CHAPTER 5

SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

There is a definite need to evaluate the art program with respect to the academic program as a distinction is frequently made between the two. Another distinction made is that art students develop somewhat different attitudes, beliefs, actions, and appearance than do the students not taking art. The problem of the study was to determine if differences exist between the academic achievement and social participation of the student enrolled in art and the student not enrolled in the art program.

Summary

The review of literature strongly indicates an interest and a need for art education, but, does not explore the personal characteristics or mental and social growth of the art student. Before a school art program can become totally evaluated, more information is required as to the needs and growth of the individual student. In relation, more understanding and knowledge is needed to adequately demonstrate and stress the value of art education in its many forms and purposes.

The Bozeman Senior High School was selected to provide the required data on art students and on non-art students. The total number of students in the art program were used in the study with a corresponding number of non-art students randomly selected from each of the three classes.

To obtain the information for this study the general office and guidance department provided the school records from which the intelligence quotients, grade point averages, art grades and academic grades for the

students were taken. This provided the data to determine the academic achievement of the art and the non-art group.

To secure the data on the social participation a questionnaire, specifically designed for this study, was administered to all the students involved in the study, by the guidance counselor and the writer.

The results of the study on academic achievement, indicate that:

1. The comparison of intelligence quotients reveals no significant difference between the art student and the non-art student.
2. The comparison of grade point averages reveals a significant difference between the art student and the non-art student, with the non-art student recording the highest score.
3. The art grades as compared to the academic grades reveals a significant difference, with the art grades being recorded with the highest score.

The results of the study obtained by the questionnaire indicate that:

1. The number of activities participated in that were not connected with the school reveals no significant difference between the art student and the non-art student.
2. The number of activities participated in within the high school reveals no significant difference between the art student and the non-art student.
3. The total number of clubs or organizations joined and/or official offices or positions held, within the high school and/or not connected with the high school, reveals a significant difference for the art student over the non-art student.
4. The number of students riding the bus; having hobbies; and stating plans upon completion of high school reveals no significant differences between the art student and the non-art student.

Conclusions

The conclusions drawn from this study were based upon the student's high school record, the questionnaire, and the review of literature findings.

These conclusions are:

1. There is no significant difference in academic achievement between the art student and the non-art student.

2. There is no significant difference in social participation between the art student and the non-art student.

3. The review of literature indicates the lack of previous study and research in this area.

Recommendations

In the light of the results of this study the following recommendations are made as to probable future research studies and projects.

These recommendations are:

1. A study should be made involving larger and smaller high schools, as well as a number of different high schools, to determine the normal academic achievement level of art students and non-art students.

2. A study should be made involving larger and smaller high schools, as well as a number of different high schools, to determine the normal expectancy level of participation in activities, not connected with the high school and/or within the high school, of art students and non-art students.

3. Studies should be made to determine if the art program enriches and aids students in achievement in academic subjects.

4. Studies should be made to determine if the art program provides for social adjustment not found in academic subjects.

5. Studies should be made to determine if extra-curricular activities affect mental and/or academic achievement.

6. Studies should be made to determine if any significant difference exists between the attitudes, beliefs, actions, and appearance of the art student with that of the non-art student.

7. Studies should be made to determine if any significant difference exists between the mental level of the art student and the non-art student.

8. Studies should be made to determine if any significant difference exists between the grades given by an art teacher and the grades given by an academic teacher.

It would seem that these recommendations are broad, involving as they do the total personality within its social setting. Stress is laid upon the concept that the individual student must develop in relation to his social groups and must contribute to the group life about him. These ideas are, of course, but an extension of the concept of the democratic ideal translated into terms of art education.

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APPENDIX

APPENDIX A

Letter Sent to Graduates

Bozeman, Montana
December 16, 1963

Graduate:

This letter is to introduce a questionnaire concerning extra-curricular activities in which you, as a Bozeman Senior High School student, may have participated during the academic year 1962-63.

This study is to be used as a partial fulfilment of requirements for a Master of Education degree. I have selected this field in an attempt to determine the value of the art program as compared to the academic subjects.

All returns will be strictly confidential. Feel free to make one or more responses for question number twelve.

Please fill in the questionnaire and return at your earliest convenience. A stamped, addressed envelope is enclosed for the return of the questionnaire.

Thank you in advance for your cooperation.

Sincerely yours,

Wayne Benson

APPENDIX B

QUESTIONNAIRE ANSWERED BY STUDENTS

1. Did you ride the school bus to high school? YES____ NO____

2. Did you actively participate in church activities? YES____ NO____

3. Did you have a job as a source of additional money? YES____ NO____

4. Did you participate in any intramural athletic program? YES____ NO____

5. Did you participate on any inter-school team? (such as cheer-leaders, football, ski, etc.) YES____ NO____

6. Did you participate in any athletic program not connected with the high school? YES____ NO____

7. Were you a member of any club or organization, other than the Sophomore, Junior, or Senior classes, within the high school? YES____ NO____

   If YES, circle the number joined 1 2 3 4 5 6

8. Were you a member of any club or organization not connected with the high school? YES____ NO____

   If YES, circle the number joined 1 2 3 4 5 6

9. Did you hold any official office or position in any high school club or organization? YES____ NO____

   If YES, circle the number held 1 2 3 4 5 6

10. Did you hold any official office or position not connected with the high school? YES____ NO____

    If YES, circle the number held 1 2 3 4 5 6

11. Did you have a hobby? YES____ NO____

12. What were your plans upon completion of high school?

    Advanced educational training____

    Work____

    Marriage____

    Military service____

    Other (please specify)_____

TABLE 1. LIST OF NON-ART STUDENTS SELECTED FOR THIS STUDY FROM THE BOZEMAN SENIOR HIGH SCHOOL - 1962-1963.

Class	Sex	Intelligence Quotient	Grade Point Average
Sophomore	Male	85	78.00
"	"	98	80.00
"	"	99	83.00
"	"	101	79.00
"	"	102	77.75
"	"	108	86.75
"	"	109	80.00
"	"	113	85.40
"	"	114	87.00
"	"	115	75.25
"	"	116	86.50
"	"	117	86.00
"	"	134	93.20
Sophomore	Female	88	84.25
"	"	95	81.75
"	"	128	90.00
"	"	130	86.80
"	"	130	84.00
"	"	132	92.40
Junior	Male	85	78.35
"	"	92	80.00
"	"	113	79.42
"	"	130	90.80
Junior	Female	94	81.15
"	"	97	83.12
"	"	102	97.75
"	"	104	83.25
"	"	105	90.68
"	"	132	89.72
Senior	Male	104	72.82
"	"	105	82.28
"	"	105	86.74
"	"	112	86.33
"	"	113	89.65
"	"	119	85.26
"	"	121	88.17

TABLE 1. (Continued)

Class	Sex	Intelligence Quotient	Grade Point Average
Senior	Male	86	74.34
"	"	104	78.59
"	"	104	79.33
"	"	108	81.94
"	"	108	80.47
"	"	109	81.13
"	"	109	75.97
"	"	109	88.72
"	"	114	81.82
"	"	115	88.83
"	"	119	89.36
"	"	122	84.28
"	"	123	89.18
"	"	124	83.68
"	"	127	91.27
Senior	Female	97	87.75
"	"	103	87.83
"	"	107	78.58
"	"	108	88.29
"	"	112	81.16
"	"	114	88.55
"	"	119	82.44
"	"	119	82.22
"	"	120	90.81
"	"	120	79.13
"	"	127	88.02

Total Number of Students 62

TABLE 2. LIST OF ART STUDENTS SELECTED FOR THIS STUDY FROM THE BOZEMAN SENIOR HIGH SCHOOL - 1962-1963.

Class	Sex	Intelligence Quotient	Grade Point Average	Permanent Recorded Grade					
				Art	English	History	Government	Mathematics	Science
Sophomore	Male	90	71.20	C-	F	B		B+	
"	"	99	79.75	B-	D	C-		C-	C
"	"	106	83.50	B	C			B-	C
"	"	106	85.50	B+	C+	B-		C-	B+
"	"	106	70.50	C+	D-			C-	F
"	"	109	87.00	A-	C-			B+	B
"	"	109	81.20	B-	D	D+		B-	C+
"	"	111	84.80	B+	C	B		C+	C+
"	"	111	80.00	C+	C-			D+	C+
"	"	112	81.80	B-	C+	C		C	C
"	Female	88	72.60	B	F			C	C
"	"	97	71.50	B-	D-			C+	F
"	"	97	83.20	A-	C+			D	C+
"	"	102	88.80	B	B+			B-	A-
"	"	103	85.25	B+	C			C+	B
"	"	105	82.00	C	D+			A	C-
"	"	112	85.00	B+	C-	B-		B-	
"	"	112	86.00	B-	B+	C		B	
"	"	114	89.60	B+	A-			A-	B
"	"	120	92.00	A-	A-	A		A-	
"	"	123	85.40	B+	C+	A		C	
"	"	128	87.50	B+	B	A-		C	
Junior	Male	90	71.92	C	D-	D-		D	D-
"	"	103	78.36	C	D			C-	C
"	"	105	83.00	B-	D			A-	D
"	"	120	87.44	B+	B	C+		A-	B+
"	Female	97	76.12	B-	D+	D		B-	
"	"	112	82.37	B	B	B+		B+	
"	"	115	89.20	D	A	B+		A-	
"	"	116	82.93	B-	B	B-		C+	
"	"	118	91.47	B+	A-	A-		A-	
"	"	118	91.70	B+	A-	A-		A	
"	"	121	91.40	A-	A	A		A	B+

TABLE 2. (Continued)

Class	Sex	Intelligence Quotient	Grade Point Average	Permanent Recorded Grade					
				Art	English	History	Government	Mathematics	Science
Senior	Male	82	78.16	C+	C-	D		D+	
"	"	92	73.41	C	C-			C	D-
"	"	100	78.94	C	D		C-	D-	
"	"	102	80.28	B	C-			D	C
"	"	108	78.58	B	C-			C	D-
"	"	109	77.94	C-	D		C+		C+
"	"	109	84.58	C+	C			B-	C
"	"	110	90.67	A-	A		A		A-
"	"	112	74.75	C+	C-			C	D+
"	"	115	90.40	A-	B+			A	B+
"	"	119	74.75	C-	D+			C	C-
"	"	120	76.38	C	D		C	C	C+
"	"	123	86.02	B	B			B-	B
"	Female	93	75.20	C	D-			D	C-
"	"	96	85.50	B+	C+	B-			C-
"	"	98	83.06	B	C+		A-		B
"	"	101	77.75	C+	C			C+	C
"	"	105	80.91	B-	D			D+	D
"	"	105	90.53	B+	B-			B-	B
"	"	108	84.19	B	C		C+		C+
"	"	110	77.39	C	C-	C			D+
"	"	110	85.05	B	D+	A			B
"	"	113	80.07	B-	C			C-	C
"	"	115	79.75	C	C			B-	C+
"	"	116	85.50	B+	C+			C+	C
"	"	118	89.18	B-	B			B-	C
"	"	121	92.05	A-	A-			B-	B
"	"	129	84.93	B+	B	B		B	

Total Number of Students 61

TABLE 3. RESULTS OF THE QUESTIONNAIRE (Appendix B). ANSWERED BY 56 ART AND 49 NON-ART STUDENTS.

Questions of the Questionnaire	Class	Art		Non-Art	
		Yes	No	Yes	No
1. Did you ride the school bus to high school?	Sophomore	2	20	3	16
	Junior	2	9	3	3
	Senior	5	18	3	21
2. Did you actively participate in church activities?	Sophomore	7	15	11	8
	Junior	2	9	3	3
	Senior	10	13	7	17
3. Did you have a job as a source of additional money?	Sophomore	10	12	9	10
	Junior	7	4	4	2
	Senior	13	10	13	11
4. Did you participate in any intra-mural athletic program?	Sophomore	12	10	8	11
	Junior	7	4	2	4
	Senior	10	13	13	11
5. Did you participate on any inter-school team? (cheer-leaders, football, ski, etc.)	Sophomore	10	12	7	12
	Junior	6	5	2	4
	Senior	7	16	16	8
6. Did you participate in any athletic program not connected with the high school?	Sophomore	5	17	5	14
	Junior	4	7	3	3
	Senior	5	18	8	16
7. Were you a member of any club or organization within the high school?					
	Sophomore	17	5	15	4
	Junior	10	1	5	1
	Senior	22	1	21	3
8. Were you a member of any club or organization not connected with the high school?					
	Sophomore	14	8	14	5
	Junior	7	4	4	2
	Senior	12	11	9	15

	Art	Non-Art
Total number joined	47	29
" " "	35	12
" " "	69	51

	Art	Non-Art
Total number joined	22	24
" " "	12	6
" " "	15	9

TABLE 3. (Continued)

Questions of the Questionnaire		Class	Art		Non-Art	
			Yes	No	Yes	No
9. Did you hold any official office or position in any high school club or organization?						
	Art / Non-Art					
Total number held	3 / 2	Sophomore	2	20	2	17
" " "	7 / 3	Junior	5	6	2	4
" " "	19 / 10	Senior	11	12	6	18
10. Did you hold any official office or position not connected with the high school?						
	Art / Non-Art					
Total number held	20 / 18	Sophomore	8	14	10	9
" " "	4 / 3	Junior	2	9	2	4
" " "	8 / 4	Senior	5	18	4	20
11. Did you have a hobby?		Sophomore	20	2	17	2
		Junior	9	2	6	0
		Senior	19	4	16	8
12. What were your plans upon completion of high school?						
Advanced educational training		Sophomore	18	4	17	2
		Junior	9	2	5	1
		Senior	16	6	21	3
Work		Sophomore	3	19	2	17
		Junior	0	11	1	5
		Senior	4	19	2	22
Marriage		Sophomore	1	21	0	19
		Junior	0	11	0	6
		Senior	2	21	2	22
Military service		Sophomore	3	19	4	15
		Junior	2	9	4	2
		Senior	4	19	3	21