

Anxiety shows a highly significant negative correlation with the Work Attitude Scale, a measure of motivation, and a highly significant positive correlation with Hostility. Positive correlations, at the 5% level of significance are given between anxiety and Preconscious Activity, Self-Rating, Intelligence and Dogmatism.

(viii) Visualization: The two measures of visualization are Making Symmetric Designs and Common Elements and they are highly correlated with the measures of field-dependence/field-independence, e.g. Gottschaldt Figures and Pattern Relations (Table XV).

The rest of the correlations mentioned are positive and at the 5% level of significance. Making Symmetric Designs correlates with the creativity test, Consequences, with the intelligence measure, Concept Mastery and with the teacher's rating of Successful Interpersonal Contact. The Common Elements test intercorrelates with Fluctuation Maximum negatively and positively with the creativity test Preconscious Activity.

(ix) Dogmatism and Openness to Experience: Significant correlations with Dogmatism are nearly all negative (Table XV). There is a negative, highly significant, correlation between dogmatism and Seeing Faults, indicating that a dogmatic person is not likely to be creative. Negative correlations above the 5% level of significance exist between Dogmatism and the Barron Welsh Art Scale, the Preconscious Activity Scale, Rating Spoken Expression, Successful Interpersonal Contact and Self-Rating. These results indicate again that dogmatism and creativity do not go hand in hand. The only exception to this

is the positive significant correlation between Dogmatism and Rated Written Expression.

The measures of Hostility, Conventional Mores and Social Aquiescence are components of the Famous Sayings test and these three measures intercorrelate extremely highly with each other and with the measure of dogmatism.

Besides this, Hostility is very highly correlated with Fear of Failure and Anxiety. Conventional Mores is highly significantly negatively correlated with Seeing Faults, Preconscious Activity and Self-Ratings; and significantly negatively correlated with Rated Spoken Expression and Concept Mastery, the intelligence measure. There are also significant correlations above the 1% level between Conventional Mores and the motivation measures, the Work Attitude Scale, the Fear of Failure and the Correction component of the Continuous Coded Addition, indicating that a relationship does exist between Conventional Mores and Motivation.

A similar pattern to the above variables can be noted between Social Aquiescence and some variables. This measure shows a highly significant negative correlation between itself and the Barron Welsh Art Scale, the Preconscious Activity Scale, Rated Spoken Expression, Self-Rating, and the intelligence measure, Concept Mastery. However, this measure has a significant negative correlation with Seeing Faults, and a positive one with Rated Written Expression. There is also a highly significant correlation between Social Aquiescence and the motivation measures, Work Attitude Scale, Fear of Failure and the Correction and Neatness components of

the Continuous Coded Addition.

The intercorrelations of the four measures, Dogmatism, Hostility, Conventional Mores and Social Acquiescence, suggest that a person who is dogmatic and closed to experience is not creative but is nevertheless highly motivated.

(x) Academic Success: The measure of academic success is Final Examination Grades which do not appear to be related to creativity. There is only one correlation at the 1% level of significance, between Final Examination Grades and 1. Rated Spatial Expression (Table XV), suggesting that in order to pass his subject the student has to be judged by his lecturer as being able to express himself creatively in his drawings. His Final Examination Grades are not correlated with his Self-rating. There is also a significant positive correlation between Final Grades and the Gottschaldt Figure test. This does suggest that a successful completion of this test will help the student in passing the first year of his study.

(xi) Miscellaneous: In order not to increase unnecessarily the main correlation matrix, six measures have not been included. However, they will be discussed here. These six measures are: Age, Religion, Home Language, Parents' Job Status, Military Service and Sex.

Age is correlated negatively to sex ($r = -.30$) and to Academic Success ($r = -.23$). Sex correlates significantly with the creativity predictors, Consequences ($r = .26$), Seeing Faults ($r = .22$), and the Preconscious Activity Scale ($r = .25$); it correlates positively with Rated Spoken Expression ($r = .19$) and negatively with Rated Written Expression ($r = -.20$). It should be kept in mind, that the sample was

predominantly male.

Religion only correlates significantly with Anxiety (r = .23). Religion was scored in an ordinal fashion from 1 (no religion) to 5 (Protestant, Catholic, Jewish, etc.). This correlation therefore suggests that people of different religions have less anxiety than people of the same religions.

Home-language was scored as 1 (English) or 2 (Other). Language correlates significantly with Aquiescence (r = -.21) and Rated Success (r = -.29) and positively with Rated Success (r = .26) and Successful Interpersonal Communication Success (r = .20).

Parent's Job status, was scored as 1 (unemployed) or 2 (professional or semi-professional). Job status is intercorrelated with all other variables. There is a significant negative correlation (r = -.21) between Job status and Conventional Mores; and a positive correlation (r = .23) between Job status and creativity measures, Common Elements (r = .23) and Consequences (r = .20). There also existed a highly significant correlation (r = .23) between Parent's Job and Concept Mastery. This measure, suggesting that upper status parents have intelligent children.

In assessing Military Experience, children who had no experience in this field received a 0, children with leadership a 1, and children with no leadership a 2. The correlations were nearly all negative.

have any Military Service.

D. The Identification of High Creative and Low Creative
Subjects.

The "total predictor score" for each subject was obtained, by adding the sum of the standard score of the following measures:

Barron Welsh Art Scale

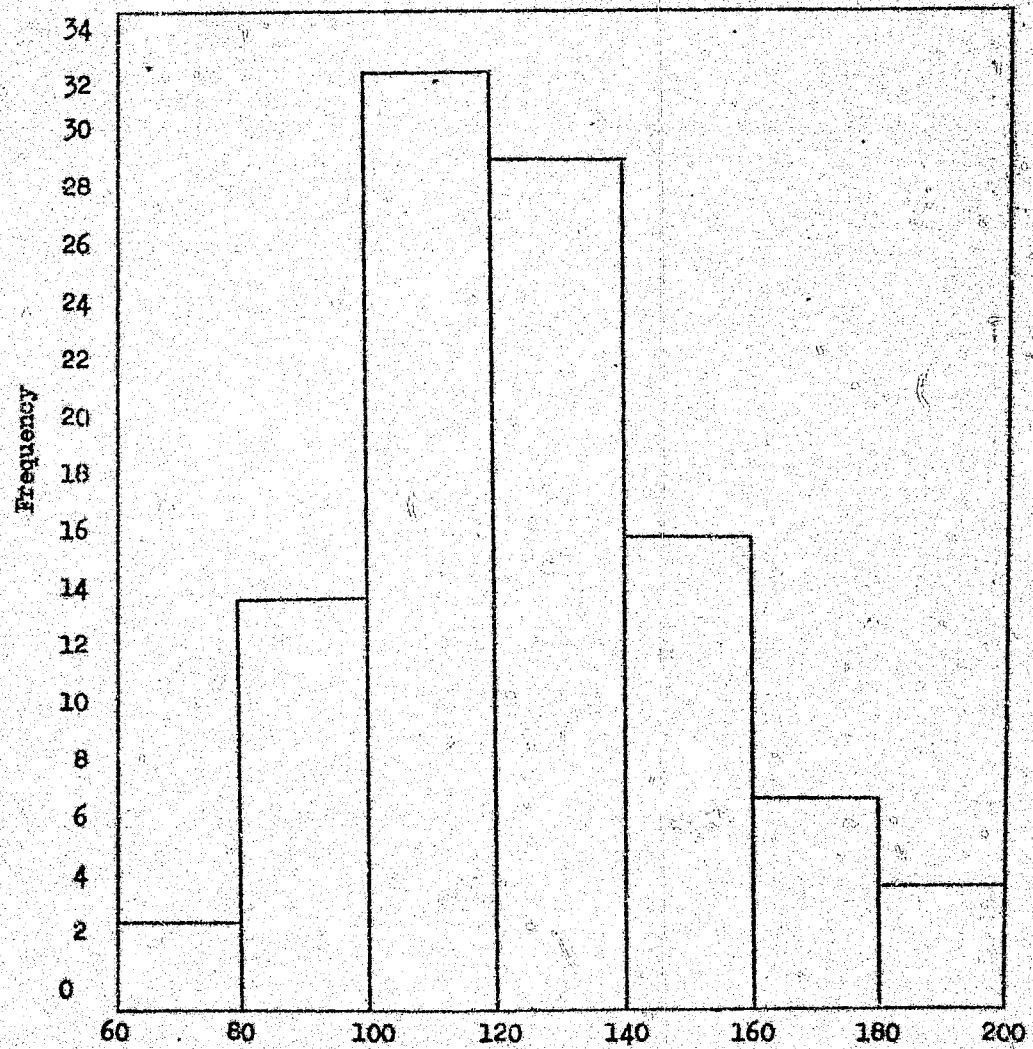
Consequences)
) (Verbal Creativity)
 Seeing Faults)

Preconscious Activity Scale (Personality)

Making Symmetric Designs)
) (Spatial Creativity)
 Common Elements)

The total predictor scores thus obtained ranged from 188 to 65. A frequency distribution of the total predictor scores is presented in Figure 1. It can be observed that the scores are distributed fairly normally, though there is a slight skewness in the direction of the low scorers.

The 105 subjects were ranked according to their total predictor score. In order to compare the high creative (H.C.) and the low creative (L.C.) subjects, the sample was divided in the way described above.



Sums of Standard Scores on Predictors

Figure 1: DISTRIBUTION OF TOTAL PREDICTOR SCORES (N= 105)

The high and low creativity groups differed considerably in their scores. The mean creativity score for all 105 subjects was 103.37 with a S.D. of 22.89; the mean score for the H.C. group was 121.77 with a S.D. of 14.57 as compared to the mean score of 84.62 and an S.D. of 11.87 for the L.C. group.

The 105 students were also ranked according to their scores on verbal creativity (Figure 2), spatial creativity (Figure 3), and the personality dimension of creativity (Figure 4), and art appreciation (Figure 5). However, the total predictor score was considered the best measure since architecture involves all four aspects of creativity.

Later the 105 subjects were ranked according to their verbal creativity. This score consists of the sum of the scores of both the Consequences and the Seeing Faults Tests. The mean of the total group was 42.78 (S.D. 13.62); of the 53 most verbal creative subjects, 51.19 (S.D. 12.78); and of the 52 least creative subjects, 34.17 (S.D. 8.18). A frequency distribution of this score is shown in Figure 2.

Spatial creativity was measured by the summation of the scores of the Making Symmetric Designs and the Common Elements tests. Here a mean of 33.8 (S.D. 8.42) was found for the total group; for the 53 highest scorers a mean of 37.38 (S.D. 8.26) and the 52 lowest scorers a mean of 30.37 (S.D. 6.75). Figure 3 presents the frequency distribution of spatial creativity.

Subjects were also ranked according to the personality dimension of creativity which was measured by the Preconscious Activity Scale. Here we have the mean of the total group, 20.82 (S.D. 5.87); for the top 53 the mean of 23.83 (S.D. 5.13);

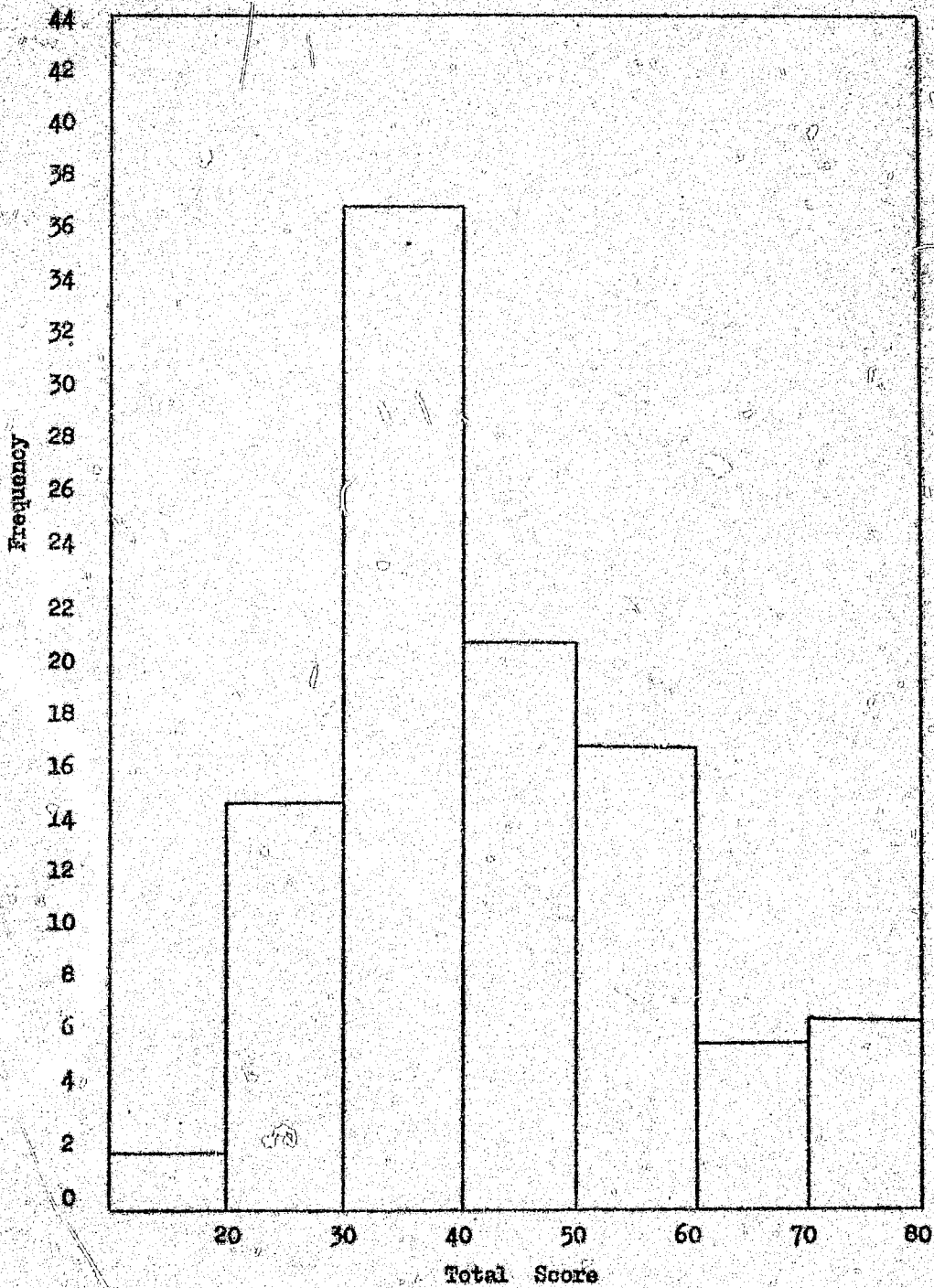


FIGURE 2: DISTRIBUTION OF VERBAL CREATIVITY TEST SCORES

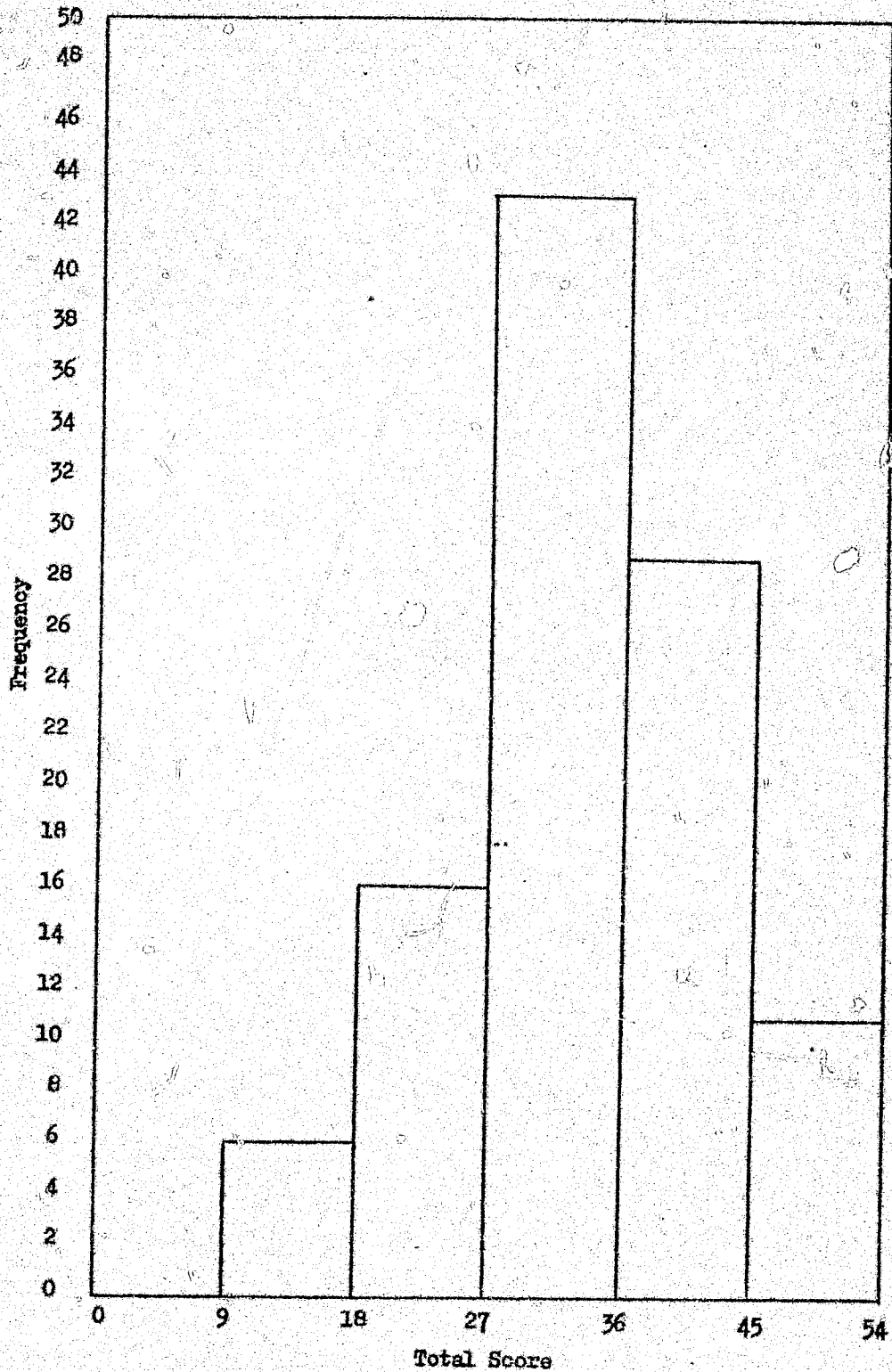


FIGURE 3: DISTRIBUTION OF TOTAL SPATIAL CREATIVITY SCORES

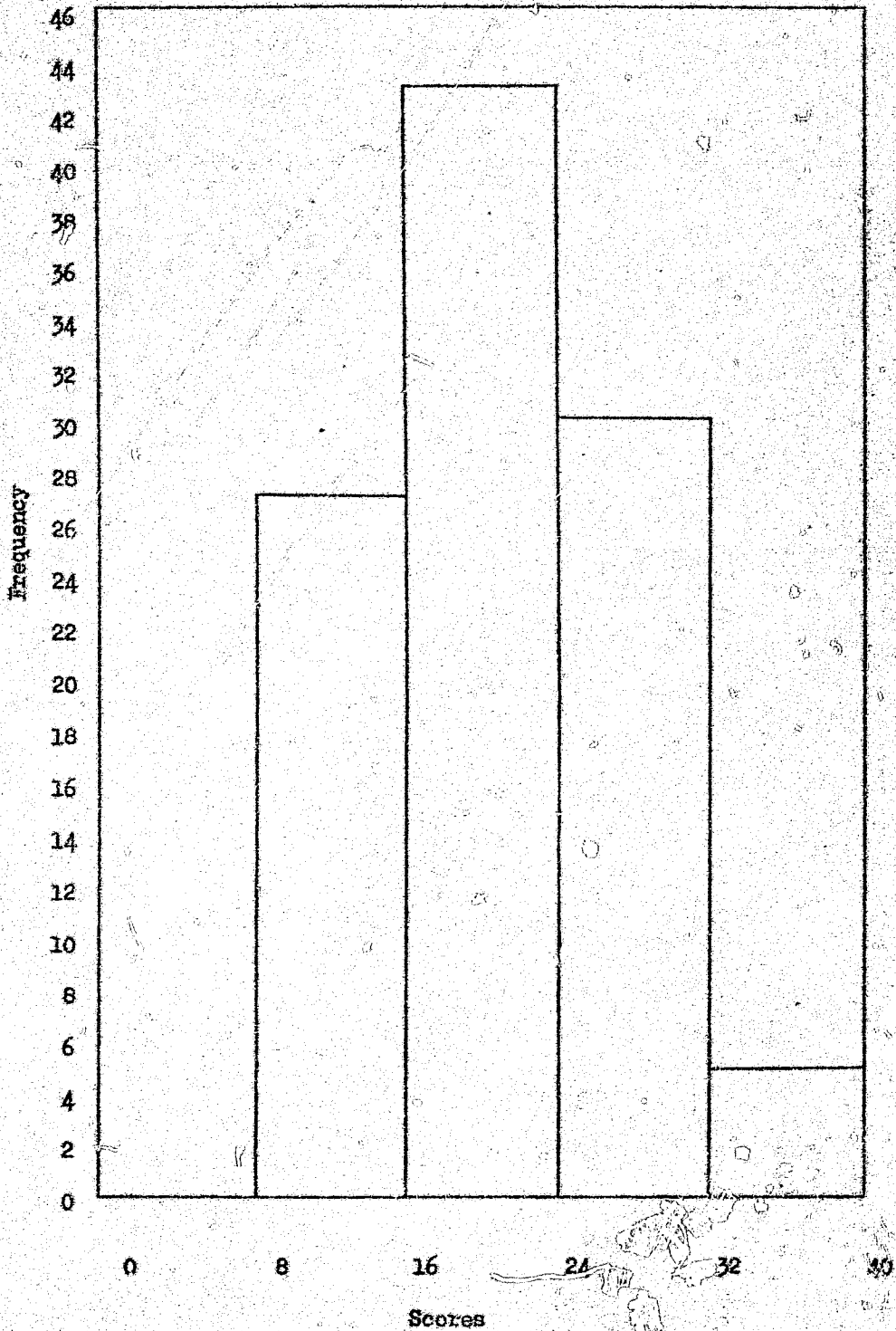


FIGURE 4: DISTRIBUTION OF SCORES ON THE PERSONALITY DIMENSION OF CREATIVITY.

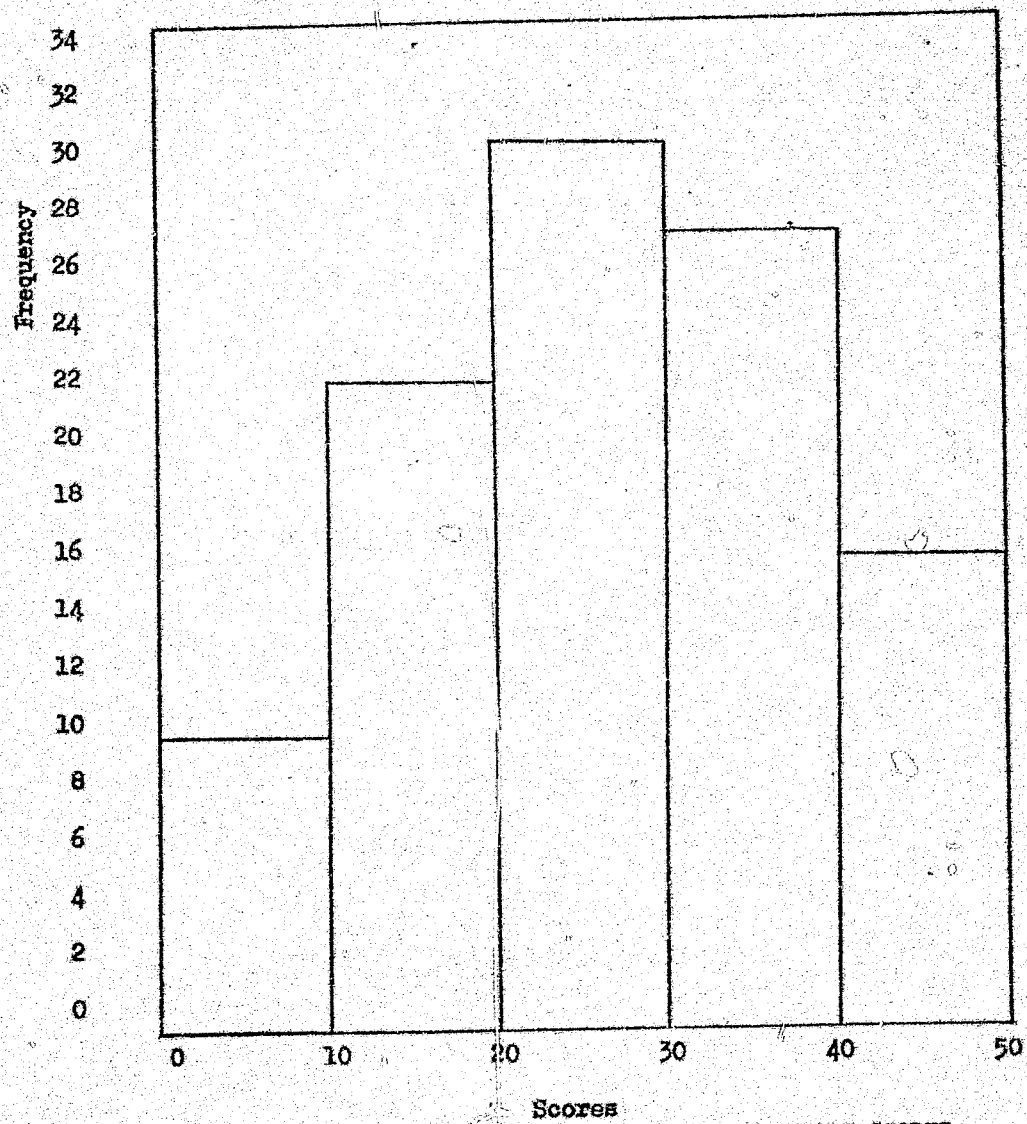


FIGURE 5: DISTRIBUTION OF BARON WELSH ART SCALE SCORES

and the bottom 52 a mean of 17.75 (S.D. 4.95). Figure 4 shows the frequency distribution of these test scores.

The Barron Welsh Art Scale is a creativity test of artistic appreciation. Here the mean of the total group is 26.08 (S.D. 12.31); for the top 53 scorers on the last test, 20.08 (S.D. 9.80), and the bottom 52, 20.08 (S.D. 11.06). The frequency distribution of these scores are shown in Figure 5.

Table XVIII represents the means, standard deviations, and correlations for all tests which are concerned with factors of motivation, anxiety and anxiety for both the H.C. and the L.C. group. Table XIX takes care of all creativity tests, creativity criteria, and variables and factors used later on in the correlation analysis and other parts of the analysis for both groups.

TABLE XVIII

Means and S.D.s for Motivation and Anxiety Tests for the H.C.'s and the L.C.'s

VARIABLES	MEANS		S.D.'s	
	H.C.	L.C.	H.C.	L.C.
Taylor's MAS	8.72	7.50	4.82	
Fear of Failure (Famous Sayings test)	35.76	37.25	8.65	
Work Attitude Scale	20.08	20.30	5.69	
Continuous Coded Addition (components)				
Total	1678.83	1673.27	370.32	
Error	13.15	14.94	15.00	
Correction	13.98	14.50	12.57	
Accuracy	220.33	216.54	41.50	
Neatness	221.44	211.81	45.71	
Initial Drop	3.45	4.52	5.43	
Duration/init. Drop	1.96	2.06	1.33	
Increase	0.92	0.93	0.61	
Slope	0.99	0.97	0.58	
Max. Input/unit	13.96	15.29	4.30	
Convexity	2.68	2.25	1.59	
Early Increase	1.74	1.71	1.11	
Slope Difference	2.28	2.15	1.37	
Fluctuation Difference	4.58	5.03	1.95	
Fluctuation Maximum	4.43	4.99	1.42	

TABLE XIX

Means and S.D.'s for Creativity and other Variables of the H.C.'s and the L.C.'s.

VARIABLES	MEANS		S.D.'s	
	H.C.	L.C.	H.C.	L.C.
<u>CREATIVITY TESTS</u>				
Barron Welsh Art Scale	33.21	20.08	9.79	11.06
Consequences	34.70	22.71	9.14	7.12
Seeing Faults	16.49	11.46	5.38	2.85
Preconscious Activity Scale	23.83	17.75	5.13	4.96
Making Symetric Designs	11.53	8.71	3.61	3.10
Common Elements	25.85	21.65	7.06	5.91
<u>CREATIVITY RATING SCALE</u>				
Spatial Expression	5.09	4.90	1.40	1.35
Spoken Expression	5.63	5.12	0.89	0.70
Written Expression	5.76	4.93	1.13	1.19
Succ. Personal Interaction	5.98	5.27	1.01	0.98
Academic Success	0.58	0.61	0.35	0.33
Creative Production	1.32	0.75	0.92	0.86
Self-Rating	2.43	1.58	1.23	0.85
Gottschaldt Figures	29.51	23.79	7.87	9.70
Pattern Relations	15.06	12.56	6.22	4.54
Concept Mastery	57.94	40.81	24.41	17.85
Rokeach Dogmatism	138.89	151.56	23.80	20.13
Hostility	35.47	36.60	7.11	7.32
Conventional Mores	36.00	39.89	10.30	6.76
Social Acquiescence	27.57	32.79	8.29	10.21
Sex (M-O, F-1)	0.17	0.02	0.38	0.14
Age	19.42	19.98	1.59	1.58
Religion	1.62	1.40	1.00	0.85
Language	1.35	1.10	0.36	0.30
Parent's Job	1.66	1.52	0.48	0.51
Military Service	0.70	0.87	0.80	0.74

In order to give the reader a better understanding of the differences between the H.C. and the L.C. group Table XX and Table XXI are included. The correlation matrixes give the intercorrelations (decimals omitted) of scores for the H.C.'s (Table XX) and L.C.'s (Table XXI) on all predictors, criteria, personality and intelligence tests, as well as other information from the Biographical Questionnaire. It is important to remember that each group consisted of 53 or 52 subjects, therefore 26 (0.26) or above is significant at the 5% level and 34 (0.34) or above is significant at the 1% level.

When we compare the correlation matrix of the H.C. group with that of the L.C. group we note that there are three ways of possible comparison:

- (1) Significant correlations in the H.C. group only
- (2) Significant correlations in the L.C. group only
- (3) Significant correlations in both the H.C. and the L.C. group
- (1) Significant correlations in the H.C. group and not in the L.C. group are between:

Making Symmetric Designs -	Rated Spatial Expression, Age;
Common Elements -	Rated Written Expression;
Seeing Faults -	Consequences, Concept Mastery, Conventional Mores (negative);
Preconscious Activity -	Creative Production, Concept Mastery, Conventional Mores (negative), Social Acquiescence (negative), MAS, Military Service (negative).

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	
1 Making Symmetric Designs																									
2 Common Elements	11																								
3 Seeing Faults	-03	-11																							
4 Consequences	02	-07	52																						
5 Barron Welsh Art. Scale	-14	-21	-21	-21																					
6 Preconscious Activity Scale	-05	06	14	21	09																				
7 Rating Spatial Expression	27	-02	-10	-13	04	-06																			
8 Rating Spoken Expression	04	-11	15	24	-00	58	-12																		
9 Rating Written Expression	12	28	-13	-13	11	-10	37	-52																	
10 Successf. Interpers. Contact	13	-16	02	03	02	33	23	55	-23																
11 Final Exam. Grades	-02	-20	-09	03	13	-05	34	01	03	17															
12 Creative Production	-04	-10	-06	14	-17	37	02	33	-20	15	-23														
13 Self-rating	-05	-08	09	07	-13	46	10	45	-03	30	-06	27													
14 Concept Mastery	14	-03	27	22	03	48	16	37	11	29	20	02	31												
15 Gottschaldt	18	10	-03	-06	-07	-19	32	-06	22	-03	22	-16	-01	12											
16 Pattern Relations	20	13	-05	-02	-08	00	37	-09	20	-13	32	-06	12	26	52										
17 Rokeach Dogmatism	10	02	-14	02	-08	-18	-17	-16	22	-29	-19	08	-13	-22	14	07									
18 Hostility	-04	-01	-10	02	01	-01	-13	-04	10	-12	09	04	05	00	03	09	54								
19 Conventional Mores	07	07	-33	-13	-00	-42	-01	-25	09	-10	12	-14	-25	-36	02	16	49	40							
20 Social Acquiescence	04	15	-25	-10	-06	-44	-05	-31	27	-13	04	-14	-22	-38	14	09	64	54	54						
21 Total	04	-14	05	16	07	-10	-02	-15	11	-16	05	-27	-11	15	48	34	19	-19	-03	-03					
22 Error	07	01	-01	16	-15	13	06	21	-08	21	07	29	28	04	-16	-12	-09	-16	-06	-11	-28				
23 Correction	15	03	-17	01	-18	-16	31	-32	36	-03	19	10	-09	-16	16	26	25	19	13	37	10	04			
24 Accuracy	-13	11	04	-07	11	-11	-08	-28	14	-33	-14	-31	-25	-09	22	23	15	04	03	12	48	-84	-05		
25 Neatness	-15	-07	14	04	22	04	-24	11	-19	-09	-14	-12	-01	13	-14	-27	-19	-13	-15	-23	-08	-07	-89	04	
26 Initial Drop	03	-09	-01	14	12	14	-17	13	-04	00	09	13	08	-09	10	07	03	02	01	-04	-08	-06	-22	02	
27 Dur/Initial Drop	-01	-05	-10	-02	04	13	-14	-01	08	-04	-08	-01	20	-16	06	24	20	21	11	22	00	-19	-14	26	
28 Increase	11	02	14	07	05	06	-06	08	-08	10	09	-07	-10	16	21	25	-11	-09	-06	-12	40	-05	14	04	
29 Slope	10	08	23	11	-07	05	-07	13	-14	11	09	-02	-08	15	14	19	-08	-09	-09	-11	33	-02	18	02	
30 Max. input per unit	06	08	08	00	15	05	06	09	-12	23	23	-04	-25	12	10	04	-23	-26	-24	-14	-02	00	-04	-11	
31 Convexity	-07	01	-04	-06	05	-16	02	-22	16	01	-04	-21	-14	-06	19	15	-14	00	17	-04	39	-24	14	31	
32 Early Increase	-13	06	-09	-20	01	-10	-09	-17	08	08	-05	-12	-15	-14	02	-03	-26	01	11	-06	14	-30	13	27	
33 Slope D.f.	-15	04	-13	-18	-01	-15	01	-19	12	08	-03	-12	-12	-10	09	04	-26	-02	11	-05	26	-20	20	22	
34 Fluctuation Difference	05	-05	04	06	-04	20	-00	17	-11	09	04	11	19	09	31	04	12	05	-13	-02	15	-04	-12	10	
35 Fluctuation Max.	01	-03	-01	-01	-12	12	-03	10	-10	03	07	16	10	14	25	01	05	07	-11	-10	19	07	-09	01	
36 Work Attitude Scale	18	19	01	-10	-07	-13	22	-08	25	13	04	-14	-15	-15	18	13	19	-16	25	28	10	03	27	07	
37 Fear of Failure	16	22	-07	-03	-11	-21	04	-02	17	-05	13	-07	-02	-27	11	23	57	67	61	72	-26	06	31	-13	
38 MAS Taylor	-12	-24	10	13	09	29	-09	10	13	-13	02	-03	22	38	00	-00	42	-09	04	00	-12	-04	10	10	
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	

(Decimal point omitted)

[illegible]

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
1 Making Symmetric Designs																								
2 Common Elements	03																							
3 Seeing Faults	02	-25																						
4 Consequences	-06	03	20																					
5 Barron Welsh Arts Scale	-21	-22	-19	-19																				
6 Preconscious Activity Scale	-21	17	-24	-23	34																			
7 Rating Spatial Expression	04	-15	-13	-23	-05	19																		
8 Rating Spoken Expression	-27	04	-24	-01	27	53	01																	
9 Rating Written Expression	28	-19	10	12	-22	-42	43	-66																
10 Successf. Interpers. Contact	04	-03	-11	-11	03	44	42	28	-05															
11 Final Exam. Grades	04	-02	-03	00	-03	-05	50	-02	32	15														
12 Creative Production	-24	-09	29	13	15	16	06	29	-25	22	09													
13 Self-rating	-14	-12	16	-10	20	51	22	51	-39	46	-01	44												
14 Concept Mastery	-02	-01	07	14	-10	10	-19	15	01	02	04	08	00											
15 Gottschaldt	19	28	-10	11	-07	09	15	00	08	17	23	02	18	02										
16 Pattern Relations	-25	32	-01	-06	-09	21	-08	17	-18	16	-07	05	26	-03	16									
17 Rokeach Dogmatism	02	05	-16	03	-01	-11	05	-02	10	01	06	-04	-11	18	-04	00								
18 Hostility	01	17	-04	-05	-13	07	-03	05	-34	05	-04	-03	21	-05	-02	25	40							
19 Conventional Mores	-07	-16	09	11	-16	-18	-04	-07	06	-06	-06	15	01	11	-15	06	28	13						
20 Social Acquiescence	-08	-02	21	07	-39	-33	03	-21	08	-08	-07	06	01	-01	06	19	19	38	60					
21 Total	04	09	-13	-13	-13	03	-08	09	-21	01	-04	-09	-01	06	-09	20	14	24	11	22				
22 Error	07	17	16	11	-24	-07	09	-02	04	08	-06	-05	-04	-10	-11	-06	00	-03	-03	-00	-34			
23 Correction	-04	-10	13	14	-05	03	-02	-12	04	09	-14	10	25	-10	21	-01	12	-16	36	27	-09	02		
24 Accuracy	-04	-14	-13	-05	11	-09	-15	-09	-05	-10	-01	-07	-01	12	-03	05	08	12	02	12	61	-82	-18	
25 Neatness	00	15	-10	-07	03	02	02	19	-11	-05	07	-07	-11	13	-15	16	-05	-01	-28	-19	32	-08	-87	29
26 Initial Drop	-02	-09	35	-10	-09	-02	-01	-08	08	-14	01	-01	-09	-07	-14	-14	-17	-26	33	09	00	-04	-15	06
27 Dur/Initial Drop	03	-10	05	02	24	07	-18	-01	-08	-22	-17	-07	-01	-12	-13	-23	-12	05	-15	-15	-19	-04	-06	02
28 Increase	-21	-07	00	-07	11	07	21	21	-08	14	11	32	29	02	03	20	05	-17	06	03	07	11	-12	-04
29 Slope	-22	-01	-03	-09	13	11	22	26	-14	21	10	37	33	-02	04	19	04	-17	10	06	07	16	-02	-11
30 Max. input per unit	-14	-12	-26	-10	20	19	01	17	-18	-00	-14	03	20	-00	-23	01	13	10	05	-02	06	02	-04	11
31 Convexity	14	05	-25	-25	-11	04	16	00	06	31	11	08	04	04	13	28	-04	-08	19	10	23	03	10	-03
32 Early Increase	03	16	-14	-14	-01	05	-06	-04	-04	19	05	08	08	17	17	30	-19	-06	15	10	28	-10	06	16
33 Slope Dif.	04	12	-23	-15	-11	02	02	-02	-00	23	09	03	03	18	13	20	-12	-03	22	14	31	-06	08	12
34 Fluctuation Difference	02	-18	-12	-08	01	34	34	08	10	30	06	-13	00	-14	-00	-27	-02	-18	-13	04	10	07	-16	03
35 Fluctuation Max.	05	-34	11	-02	-03	16	28	-08	21	19	02	-12	-08	-11	-17	-22	-01	-15	07	14	17	02	-20	09
36 Work Attitude Scale	-08	08	00	10	-11	-16	-12	-20	05	02	-09	-06	-07	03	02	28	-13	-17	41	37	27	-15	14	27
37 Fear of Failure	09	06	29	-00	-20	-19	-04	-21	-03	-05	-17	-12	11	-03	05	13	29	48	34	46	10	05	76	03
38 MAS Taylor	04	03	-08	06	07	00	09	13	-00	-08	12	11	04	-14	-21	-21	31	21	03	-16	-07	-15	01	07
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24

Correlation Matrix

(Decimal)

[illegible]

Rated Spatial Expression - Pattern Relations, Gottschaldt Figures, Correction, Academic Success;

Rated Spoken Expression - Social Acquiescence (negative), Concept Mastery, Correction and Accuracy (negative);

Rated Written Expression - Social Acquiescence, Age, Dogmatism, Correction;

Rated Successful Interpersonal Contact - Dogmatism (negative), Concept Mastery, Home Language, Accuracy (negative);

Academic Success - Pattern Relations, Age (negative);

Creative Production - Total (negative), Error, Accuracy (negative);

Self-Rating - Concept Mastery, Error;

Concept Mastery - Fear of Failure (negative), Conventional Mores (negative), Social Acquiescence (negative), Pattern Relations, MAS, Parent's Job;

Gottschaldt Figures - Pattern Relations, Total, Fluctuation Difference;

Pattern Relations - Total, Correction, Neatness (negative);

Dogmatism - Social Acquiescence, Religion, Parent's Job (negative), Early Increase (negative), Slope Difference (negative);

Hostility - Conventional Mores, MAS;

Conventional Mores and Social Acquiescence - Parent's Job (negative);

Several Components of the Continuous Coded Addition with one another;

Work Attitude - Fear of Failure, Age, negative and positive work, several components of the Continuous Coded Addition;

Fear of Failure - Total (negative), Correction, Neatness (negative);

MAS - Religion, Early Increase (negative).

162 (a).

(2) Significant correlations in the
and not in the H.C. group are between:

Making Symmetric Designs - Rated Spoken Expression

Rated Written Expression;

Common Elements - Gottschaldt Figures, Pattern

Parent's Job;

Seeing Faults - Creative Production, Initial Drop

Failure;

Barron Welsh - Preconscious Activity, Rated Spoken

Social Acquiescence (negative);

Preconscious Activity - Rated Written Expression

Military Service (negative), Social

Fluctuation Difference ;

Rated Spatial Expression - Rated Interpersonal

Difference;

Rated Spoken Expression - Home Language, Slope

Rated Written Expression - Academic Success, a

Home Language, Self-Rating and Hostility

Rated Successful Interpersonal Contact - Convexity

Difference;

Creative Production - Increase and Slope;

Self-Rating - Pattern Relations, Increase, Slope

Concept Mastery - Religion and Military Service

Pattern Relations - Work Attitude, Early Increase

Convexity, Fluctuation Difference (negative)

Hostility - Religion (negative), Initial Drop

Conventional Mores - Age (negative), Work Attitude

Neatness (negative);

Several Components of the Continuous Coded Address

another;

Work Attitude - Sex (negative), several components of the
Continuous Coded Addition;

Fear of Failure - Duration of Initial Drop (negative);

MAS - Increase (negative), Slope (negative), Convexity (negative),
Slope Difference (negative);

(3) Significant correlations in both the H.C. group
and the L.C. group are between:

Preconscious Activity - Rated Spoken Expression, Rated Successful
Interpersonal Contact, Self-Rating;

Rated Spatial Expression - Rated Written Expression Academic
Success.

Rated Spoken Expression - Rated Written Expression (negative), Rated
Successful Interpersonal Contact, Creative Production
Self-Rating;

Self-Rating - Successful Interpersonal Contact, Creative Production;

Dogmatism - Hostility, Conventional Mores, Fear of Failure, MAS;

Hostility and Conventional Mores - Social Acquiescence, Fear of
Failure;

Social Acquiescence - Work Attitude, Fear of Failure, Corrections;

Fear of Failure - Correction;

MAS - Early Increase (negative), Work Attitude (negative);

Continuous Coded Addition components - with each other positive and
negative.

The reader will notice, that, as correlation matrix, the following variables mentioned in the correlation matrices for the group : Sex, Religion, Home Language, Parent Experience. However, these variables have it was necessary, but in general they would information to justify the increase of the

Table XXII gives the percentages creativity in each of the four sections of E of this chapter compares other variables and the L.C.'s and gives the significance for two groups.

TABLE XXII

Percentages of High and Low Creativity in each

	H.C.	L.C.	Total
Architecture	34	12	46
Quant. Surv.	3	14	17
Building Sc.	9	22	31
T. & R. Plan.	1	4	11
TOTAL	53	52	105

E. Comparison Between the H.C. and the L.C. Groups(i) The Biographical Criterion Item.

As mentioned in the last section subjects gave four statements on page 6 of the Biographical Questionnaire (see Appendix) and they had to decide which of the statements best describes them. The frequencies of responses for the H.C. and L.C. groups are as follows:

Item

1. I believe that I have better than average intellectual qualities as well as average creative ability or imaginativeness.
2. I believe that I have average intellectual qualities, but that I am highly creative or imaginative.
3. I believe that I have better than average intellectual qualities, as well as a high degree of creativity or imaginativeness.
4. I believe that I have average intellectual qualities, as well as average creative ability.

Items 2 and 3 invite extreme ratings in that they refer to a high degree of creativity, whereas items 1 and 4 refer to average creativity. Because of this items 2 and 3 were combined for computational reasons. Item 1 was not combined with item 4 because it differs from item 4 by producing the lowest possible rating not only on creativity but also on intelligence as well.

The overall chi-square was calculated between (2 + 3), and 4. The χ^2 was divided into components for the differences between 1 and (2 + 3), with 4, and the differences between items 1 with (2 + 3). The procedure adopted from Maxwell (1961 pp. 52-56) and the resulting findings are contained in the following table.

TABLE XXIII

Chi-Squares: Differences Between H.C.'s and L.C.'s on Biographical

<u>Self-Rating</u>			
Components of χ^2 due to:	χ^2	df	Significance
(a) Difference between Items 1 + (2+3) with 4	10.45	1	
(b) Difference between Items 1 with (2 + 3)	1.70	1	
Total or overall χ^2	12.15	2	

We note that these biographical items have shown significant differences between the H.C.'s and L.C.'s that significantly more L.C.'s rate themselves as more creative and intelligent than the H.C.'s. Note that it has to be kept in mind that the differences between the two groups have been demonstrated sufficiently to suggest that the self rating procedure used in the Biographical Questionnaire is an effective criterion measure.

(ii) Additional Biographical Items

Information was also gained on page 5 of the Biographical Questionnaire. Here the subject was asked to

write down details of anything that he had produced in his life time that might be considered novel, original or imaginative. Subjects who did not produce anything in this line or responded with irrelevant information and insufficient details received the grade 0; if the subject produced one thing that might be considered novel (etc.) he received 1; and if he had produced more than one item he or she received 2. The mean for the total group was 1.04 with a S.D. of 0.93; H.C. had a mean of 1.32 (S.D. 0.92) and the L.C.'s group a mean of 0.75 (S.D. 0.86). The t value was 3.28, giving a significance level between the H.C. and the L.C. groups at the .1% level.

(iii) Analysis of the Rating Scale.

The H.C. and L.C. subjects were compared on the basis of the ratings made by their first year lecturer on a Creativity Rating Scale. This 9 point scale consisted of 4 parts, e.g. 1. (Rated) Spatial Expression; 2. (Rated) Spoken Expression; 3. (Rated) Written Expression and 4. Successful Interpersonal Contact.

Owing to the nature of the courses taken by some students, their related interaction with their lecturer's ratings on 2 and 3 for some sections are not available. This criterion is described in chapter V and a copy is included in the Appendix.

The first year lecturer of each of the four departments had to rate each and everyone of his students on a rating scale which ranged from 1 to 9 on the four aspects of creativity which are necessary for architecture, namely 1. Rated Spatial Expression: This is the ability of the student to

express himself creatively in his drawings. A student who receives a 9 should produce designs and plans which show both originality and utility. 2. Rated Spoken Expression: This is the ability of the student to express his creativity in speech in such a fashion that other persons clearly understand the concepts he is dealing with. Here we are only concerned that the creative student is able to express his creativity in words and not necessarily in his plans through drawings.

3. Rated Written Expression: This is the ability of the student to express his creativity in writing in such a fashion that other people understand equally clearly the concepts he is dealing with. Here he need not be able to express his concepts and plans in either drawings or speech. 4. Successful

Interpersonal Contact: This is the ability of the student to get along with his lecturers and fellow students. It includes the ability to co-operate with others, and if he should hold a supervisory position, he should be able to lead and successfully direct the project to its conclusion.^x

TABLE XXIV

Items of Rating Scale (6 or better) for both H.C. and L.C. groups

Items of Rating Scale (6 or better)	H.C.	L.C.	Total	Proportion of H.C.
1. Spatial Expression	20	15	35	.5714
2. Spoken Expression	22	16	38	.8800
3. Written Expression	14	10	24	.5833
4. Successful Interpersonal Contact	33	20	53	.6226
Total Rating Score per group	89	48	137	.6496

^x Students were not divided as high and low creative according to the Teacher's Rating Scale but according to the total predictor score which consisted of the summation of all creativity predictor test scores as shown on page 151.

In support of the general conclusion that the Teacher's Rating Scale was a satisfactory criterion for creativity, Chi-Squares were computed in order to see whether frequency of "6 or better" ratings discriminate between high and low creatives. Comparing the two groups on the Teacher's Rating Scale it was found that the differences between the samples were not significant. $\chi^2 = 0.7406$ (df=3). The results were disappointing. Therefore when rating "6 or better" on a 9 point scale the lecturer does not distinguish high creative from low creative. The results are shown in Table XXIV.

(iv) Analysis of Final Examination Results.

Next the H.C. and the L.C. subjects were compared on the basis of their grades which they received on their final examination (Table XXV). As we might recall the sample from the architecture department consisted of four sections of first year students: 1. Architecture ; 2. Quantity Surveying ; 3. Building Science and 4. Town and Regional Planning. The courses which each subject completed differed and a comparison in this area was not possible. The most suitable system for analysis was found to be the following: 1.0 = subjects passed all courses; 0.5 = subject passed some courses; and 0.0 = subject failed all or nearly all courses. Of the sample of 105 only 34 students passed all courses and received a 1.0.

TABLE XXV

Final Examination Results For the H.C. and the L.C. groups

Final Grades	H.C.	L.C.	Total	Proportions of L.C.
Passed all Courses (1.0)	15	19	34	.4412
Passed some Courses (0.5)	29	26	55	.5273
Failed all or nearly all courses (0.0)	9	7	16	.5625
Total	53	52	105	

Chi-Squares were calculated on the difference between H.C.'s and L.C.'s for the three levels of academic success. A $\chi^2 = .8713$ (df=2) was found. As expected, the result was not significant, since there were no significant differences between the two groups on their academic success. The results of the calculation are shown in Table XXV.

TABLE XXVI

Percentages of Passes and Failures in Each Section

	Failure		Passes	Total	% F
	0.0	0.5	1.0		
Architecture	8	24	14	46	17
Quant. Surv.	2	6	9	17	11
Building Sc.	4	18	9	31	12
T. & R. Plan.	2	6	3	11	18
TOTAL	16	54	35	105	15

In order to give the reader a clearer picture of the distribution of academic success in this sample, the results for the four sections are given in Table XXVI. We note that the greatest success was achieved by the Quantity Surveyors, followed by the Architects, Building Science and the Regional Planners. The passing rate was 1/3 of the sample.

(v) Comparison between H.C. and L.C. Groups on

The H.C. and the L.C. subjects were also compared on the basis of several other variables, e.g. individual academic production before they entered university; intelligence as measured by the Terman Concept Mastery; the dis-

field-dependence/field-independence as measured by the combined scores of Gottschaldt Figures and Pattern Relations; visualization as measured on the combined scores of field-independence, Making Symmetric Designs and Common Elements; dogmatism as measured by Rokeach Dogmatism Scale; hostility as measured on the Hostility Scale of the Famous Sayings test; and anxiety as measured by Taylor's Manifest Anxiety Scale; subjective motivation as measured by the combined scores of the Fear of Failure Scale of the Famous Sayings test and of the Work Attitude Scale; and finally for objective motivation, the "total" component of the Continuous Coded Addition was utilized. Table XXVII will give the means, standard deviations and level of significance according to the t test for the differences between the H.C. and the L.C. groups on all of the above mentioned variables.

Creative Production has been thoroughly discussed on pages 165-166 under the heading Additional Biographical Items. The difference between the high and the low creative groups was significant at the 1% level.

The Terman Concept Mastery Test was used as the only measure of intelligence. The high and the low groups differed in intelligence and their differences are significant at the 1% level. The H.C. group had a mean score of 57.94 (S.D. 24.41) and the L.C. group a mean of 40.81 (S.D. 17.85). In other words the highly creative group was more intelligent than the low creative group. Of course, the finding that the two groups differed in intelligence might not be against expectation because Guilford's (1966) structure of intelligence suggests that creativity might be one facet thereof. Furthermore, although no direct measure of intelligence was used in dividing this sample into high and low creatives, it is quite possible that, indirectly, intelligence was a correlate of creativity in one or more of the predictor tests involved.

As mentioned above two test scores, Gottschaldt Figures and Pattern Relations were combined for the measurement of the field-dependence/field-independence dimensions in its analysis with the H.C. and the L.C. groups. In this case also the H.C.

group had a higher mean, 44.57 (S.D. 12.30) than the L.C. group, 36.35 (S.D. 11.34), the differences were significant at the 1% level.

TABLE XXV.1

Means, S.D.'s, and Significance Levels for H.C. and L.C. Groups

	Means		Standard Deviations		t	Signif. level
	H.C.	L.C.	H.C.	L.C.		
Creative Production	1.32	0.75	0.92	0.86	3.29	.1%
Intelligence	57.94	40.81	24.41	17.85	4.11	.1%
Field-D.-Ind.	44.57	36.35	12.30	11.34	3.56	.1%
Visualization	81.94	66.71	16.18	15.11	4.98	.1%
Dogmatism	138.89	151.55	23.80	20.13	2.94	.5%
Hostility	35.47	36.60	7.11	7.32	0.80	NS
Anxiety	8.72	7.50	4.82	4.16	1.38	NS
Motivation (subj.)	55.83	57.64	11.79	9.76	0.85	NS
Motivation (objec.)	1678.83	1673.27	370.32	344.08	0.08	NS

For the visualization factor the scores of field-independence, the Making Symmetric Designs and the Common Elements were combined. The H.C. group had a mean of 81.94 (S.D. 16.18) and the L.C. group had a mean of 66.71 (S.D. 15.11). The difference was significant at the 1% level. As expected for visualization the score was significantly higher for the H.C. group.

The famous Rokeach Dogmatism Scale was used. The mean dogmatism score of the H.C. group was 138.89 (S.D. 23.80) and for the L.C. group the mean score was 151.55 (S.D. 20.13). The differences between the two groups were significant at the 1% level. The H.C. subjects demonstrated significantly less dogmatism than the L.C. subjects.

For the next factor the Hostility Scale of the Famous Sayings test was used. Here the H.C. group had a mean of

17
35.47 (S.D. 7.11) and the
(S.D. 7.32), proving the
whole has less hostility
difference between the gr

Anxiety was measured
A mean of 8.72 (4.82) was
of 7.50 (S.D. 4.16) for t
demonstrated more anxiety
differences were not sign

Subjective motivation
scores of the Fear of Fai
The means for the H.C. gro
L.C. group 57.64 (S.D. 9.
groups were not significant
higher for this factor of
motivation was compared wi
Final Examination Grades.
compared to students who h
study. A t test was appli
difference between the fac
Examination Grades.

For objective moti
Continuous Coded Addition
a mean of 1678.83, and a S.
of 1673.27 and a S.D. of 3
mean. The difference betw

F. Multiple Regression An

Further steps in t
the creativity tests and t

Comparison among the different subgroups was made and of the first year student of architecture, creative/no and successful/unsuccessful were investigated. The statistical tool used was the NIPR Computer Programme NR 20, Stepwise Regression, which was developed and improved by Hall. This programme of multiple regression analysis as explained and adapted from Efroymson (Ralston & Wilf, 1960). According to him multiple regression is used in data analysis in order to obtain the best fit of a set of data of independent and dependent variables by an equation of the form:

$$Y = b_0 + b_1x_1 + b_2x_2 + \dots + b_nx_n$$

Here Y is the dependent variable, $x_1, x_2, \dots$ are independent variables and $b_0, b_1, \dots, b_n$ are the coefficients to be determined; r = the multiple regression value, p = percent of confidence interval of significance and p = percent of confidence interval.

The multiple regression results give the least "best" value of these coefficients for a particular set of data. The results also show a measure of reliability of the coefficients so that inferences regarding the parameters of the sample can be made. Similarly, the multiple regression analysis can be used to fit a non-linear equation.

This method of regression analysis, like other methods, involves a large number of calculations. However, each step is clearly visible in this stepwise procedure. Without increasing the number of arithmetical steps, several intermediate regression equations are obtained, as well as the complete multiple regression equation. Here one variable at a time is added to the equation. It is this variable which makes the difference.

improvement in "goodness of fit". The coefficient has to be considered as the best value for a particular set of variables.

The stepwise procedure is based on the facts that (1) a variable appears to be significant at the beginning of the analysis and thus enters the equation (2) later, other variables are added to the regression equation and the initial variable in the new combination may appear to be insignificant. Now the insignificant variable will be removed from the equation before an additional variable is added. For this reason the final regression includes only significant variables. The multiple regression analysis was done in each case with all subjects at all levels.

(i) Personality Variables and Academic Success:

The multiple regression analysis was applied to determine what personality and related variables are best suited to predict academic success. The following personality and related variables are considered: Dogmatism, Hostility, Conventional Mores, Social Acquiescence, Anxiety (MAS), Motivation as tested by the Fear of Failure and the Work Attitude Scale, and field-independence as measured by Pattern Relations and Gottschaldt Figures. Academic success was measured by the Final Examination Grades. Results of the multiple regression analysis are shown in Table XXVIII.

We note from Table XXVIII that the two best significant predictors for academic success in first year students of architecture are the two measures of field-independence, Gottschaldt Figures and Pattern Relations. The three best tests for predicting academic success in our sample are

Gottschaldt Figures, Pattern Relations and the MAS. The last named is not significant.

TABLE XXVIII

Multiple Regression Analysis: Personality Variables and Academic Success

Variables	Step	Multiple r	F-Ratio	p
Gottschaldt Figures	1	.20	4.10	.05
Pattern Relations	2	.21	0.64	.05
MAS (Anxiety)	3	.22	0.51	not sig.
Dogmatism ^x	4	.23	0.54	"
Conventional Mores	5	.26	1.34	"
Work Attitude	6	.26	0.24	"
Fear of Failure	7	.26	0.09	"
Hostility	8	.27	0.11	"
Social Acquiescence	9	.27	0.08	"

^x minus weight

(ii) Personality Variables and Total Predictor Score:

The same stepwise regression equation was applied to determine what personality and related variables are best suited in predicting a high degree of creative ability. Here the same personality and related variables were considered as in (i) above. High creative ability was measured by the total predictor score, e.g. the combination of all creativity test scores into one standard score. The results are shown in Table XXIX.

TABLE XXIX

Multiple Regression Analysis: Personality Variables and Total Predictor Score

Variables	Step	Multiple r	F-Ratio	p
Social Aquiescence ^x	1	0.33	12.90	.05
Gottschaldt Figures	2	0.45	11.25	.05
MAS (Anxiety)	3	0.47	2.25	.05
Dogmatism ^x	4	0.49	2.68	.05
Fear of Failure	5	0.51	3.12	.05
Work Attitude	6	0.52	1.15	.05
Pattern Relations	7	0.52	0.62	.05
Hostility	8	0.52	0.06	.05
Conventional Mores ^x	9	0.52	0.03	.05

^x Minus weight

Table XXIX informs us that the best three tests for predicting a high degree of creativity in first year students of architecture are Social Aquiescence, Gottschaldt Figures and the MAS. Social Aquiescence has a minus weight. This means, the lower the score on this measure the better is its predictive value. All tests considered here have a confidence interval of at least $<.05$ or better.

(iii) Creativity Criteria and Creativity Predictors:

The efficacy of the creativity tests for predicting creativity was investigated by means of multiple linear regression using the same equation as in (i) and (ii) above.

"Making Symmetric Designs", "Seeing Faults", "Consequences", "the Barron Welsh Art Scale", "the Preconscious Activity Scale" and "Common Elements" were used as predictors and were individually analysed step by step with the following measures which were used as criteria: Creative Production, Self-Rating, Teacher's Rating of Spatial Expression and

Teacher's Rating of Successful Interpersonal Contact.

The following Tables (XXX-XXXIV) give the results.

TABLE XXX

Multiple Regression Analysis: Making Symmetric Designs and Criteria.

Variables	Multiple r	F-Ratio	p
Creative Production)			
Self-Rating)			
Teacher's Rating Spatial Expression)			
Teacher's Rating Success. Interp. Contact)	0.21	4.76	.05

TABLE XXXI

Multiple Regression Analysis: Seeing Faults and Criteria

Variables	Multiple r	F-Ratio	p
Creative Production)			
Self-Rating)	0.28	8.72	.05
I.R. Spatial Expression)			
I.R. Success. Interpers. Contact)			

TABLE XXXII

Multiple Regression Analysis: Consequences and Criteria

Variables	Step	Multiple r	F-Ratio	p
Creative Production)	1	0.29	9.28	.05
Self-Rating)	2	0.31	1.77	.05
I.R. Spatial Expression)	3	0.34	2.06	.05
I.R. Success. Interpers. Contact)				

TABLE XXXIII

Multiple Regression Analysis: Barron Welsh Art Scale and Criteria

Variables	Step	Multiple r	F-Ratio	p
Creative Production	)			
Self-Rating	) 1	0.21	4.88	.05
T.R. Spatial Expression	)			
T.R. Success, Interpers. Contact	) 2	0.24	1.57	.05

TABLE XXXIV

Multiple Regression Analysis: Preconscious Activity Scale & Criteria

Variables	Step	Multiple r	F-Ratio	p
Self-Rating	) 1	0.57	49.06	.05
T.R. Success, Interpers. Contact	) 2	0.62	10.99	.05
Creative Production	) 3	0.64	3.03	.05
T.R. Spatial Expression	) 4	not significant		

The step by step regression shows that the Common Elements test does not stand up against any of the criteria measured; all the steps are insignificant. According to the significance of the results, the Preconscious Activity Scale related to the three criterion measures, e.g. Self-Rating, Teacher's Rating of Successful Interpersonal Contact, and Creative Production. Similarly, the Consequences test relates to Creative Production, Self-Rating and Teachers' Rating of Spatial Expression. Seeing Faults relates to the criterion of Self-Rating. The Barron Welsh Art Scale is significantly related to both Self-Rating and Teachers' Rating of Successful Interpersonal Contact. The Making Symmetric Designs test is

significantly related to the Teachers' Rating of Successful Interpersonal Contact. In relation to the criteria the least promising test is the Common Elements, and the most promising predictor the Preconscious Activity Scale.

CHAPTER VIIGENERAL DISCUSSION AND CONCLUSIONSA. An Evaluation and Discussion of the(i) The Predictors and Criteria

One of the aims of this investigation is to construct two effective predictors of spatial creativity. Another aim is to test existing creativity tests on the verbal and on the personality level for their usefulness as predictors of creativity in first year architecture students. The high positive correlations obtained between most of the predictor tests, and between most of the predictor scores and the criterion scores (Table XV) provide evidence for the validity of the test battery designed to identify creative architecture students.

These promising results can be attributed, to some extent, to the careful construction of some of the tests and to the modifications and improvements introduced subsequent to the numerous pilot studies.

Although positive results were obtained with the predictors, certain reservations concerning the tests must be kept in mind. The points mentioned below are pertinent to a considerable number of so-called creativity tests or test of divergent thinking.

The main drawback, from a psychometric point of view, is that some of the measurements of divergent or creative thinking ability necessitate an element of subjectivity in its scoring procedure; particularly with tests of verbal creativity like the

Seeing Faults and Consequences. Even where the actual scoring is done objectively, a subjective assumption is made because it is assumed that the obtained score measures that which the test set out to measure. For example, the scoring of the two newly developed tests of spatial creativity, Making Symmetric Designs and Common Elements, are straightforward and objective. In Making Symmetric Designs the student was asked to construct as many different symmetric geometric patterns of his own, using a strip of black paper which could be dissected into three pieces each of a different size and form. He was to use one strip of black paper for each figure. The sum total of all correct figures during a particular time was taken as the score. Similarly, in the Common Elements test, the correct answers given during a set time were counted to make up the score. However, the assumption that the number of responses produced during a fixed time limit gives a true measure of spatial creativity is hypothetical, even if it seems to appeal to common sense. It is still more questionable to assume that creativity can be gauged by weighing correct responses according to their statistical rarity of occurrence in a population.

The author believes that only a method of specific validation of tests against specific external criteria of creativity can be worthwhile.

If we consider the results of this study, it cannot be clearly assumed that specific factors of creativity have been identified and measured. The coefficients yielded in the intercorrelation of the predictor tests (Table XV) are in most cases so high as to suggest that the tests overlap to

the extent, and this was borne out again by the highly significant correlations within and between the different dimensions measuring creativity in this study.

Whether or not we could adhere to the assumption that creativity involves one general or several independent dimensions, the strong positive intercorrelations between the tests of the predictors in this investigation have a practical consequence. It makes it possible to select a few of the more promising tests, that is tests that correlate highly with each other and also with the criteria, and use these in place of the rather extensive battery of tests commonly used for assessing creativity. It would be possible in our case to remove the Barron Welsh Art Scale from our battery of creativity tests and put most of our emphasis on the most promising creativity test, the Preconscious Activity Scale. However, according to the multiple regression analysis of individual creativity tests against creativity criteria the least promising test is the Common Elements. The most promising is the Preconscious Activity Scale which showed a very high relationship to most of our criteria.

The criterion measures of several parts of the Teachers Rating Scale, have also shown promise. As indicated in the previous chapter (p.138/9), every predictor, except one correlated beyond the 1% level of significance with at least one of the criterion measures. However, some of these criteria suffer from certain methodological defects which should be noted.

As mentioned before, the Teachers' Rating Scale is an ipsative measure. It would have been more desirable to use

more than one rater for each subject or to have established the extent of rating reliability by obtaining a second rating from the teacher, or in the case of Creative Production and the other Self-Rating from the subject, at a later date. Unfortunately this was not possible for practical reasons.

Earlier it has been mentioned (p. 140) that the criterion measure Final Examination Grades was disappointing.

Concerning Final Examination Grades, or academic success as it is more often called, we have to turn back to the section of

Academic Achievement and Creativity (p. 66) and show the difficulties involved. In this case there is either no evidence or conflicting evidence, concerning the relationship between academic achievement and creativity and also intelligence.

This is particularly true with students of architecture as stated in A Study of the Prediction of Academic Success in Architectural School (Pitcher, Olson, & Solomon, 1962, p.10). They state that, in general, about 40-50% of American university students who matriculated in the first year of study actually receive degrees at the appropriate time. However with American architecture students this figure is down to 24%. In South Africa similar figures can be expected for architecture students as well as for the whole university student body. We have to note that in our case academic success or, as we call it, Final Examination Grades, is not only very disappointing but useless as a criterion of creativity in architecture students. All criteria are based on only one rating each and therefore have to be used (or interpreted) with caution. However, the positive correlations of four of the predictors with one of the criteria, Self-Rating, may warrant further investigation.

Author Schmidt H E

Name of thesis Creativity in Student Architects 1971

PUBLISHER:

University of the Witwatersrand, Johannesburg

©2013

LEGAL NOTICES:

Copyright Notice: All materials on the University of the Witwatersrand, Johannesburg Library website are protected by South African copyright law and may not be distributed, transmitted, displayed, or otherwise published in any format, without the prior written permission of the copyright owner.

Disclaimer and Terms of Use: Provided that you maintain all copyright and other notices contained therein, you may download material (one machine readable copy and one print copy per page) for your personal and/or educational non-commercial use only.

The University of the Witwatersrand, Johannesburg, is not responsible for any errors or omissions and excludes any and all liability for any errors in or omissions from the information on the Library website.