

ED 021 553

JC 680 308

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ANALYSIS OF SCAT V AND Q %ILE SCORES MADE BY MAUI COMMUNITY COLLEGE STUDENTS ENROLLED IN FALL SEMESTER 1967.

Maui Community Coll., Kahului, Hawaii.

Pub Date 67

Note- 5p.

EDRS Price MF-\$0.25 HC-\$0.28

Descriptors- COLLEGE STUDENTS, \*JUNIOR COLLEGES, \*STATISTICAL STUDIES, \*STUDENT ABILITY, VERBAL ABILITY

Identifiers- \*Hawaii, Kahului, Maui

Having the SCAT V and Q percentile scores for 308 of the 504 students enrolled at Maui Community College (Hawaii) in the 1967 fall semester, a statistical test was made to determine whether or not a significant percentage of the students had scored at or below the 50th percentile. By categorizing students according to their areas of study--liberal arts, vocational (including business, building construction, automotive technology, metal and machine technology, apparel design), and unclassified--it was found that in every case the mean percentile Q-score exceeded the V-score by at least 12 percentile points. Moreover it was shown that the students were in need of improvement in verbal skills. No significant differences were found for the vocational students insofar as quantitative skills were concerned. Charts indicating V and Q percentiles comprise the final two pages of the report. (DG)

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MAUI COMMUNITY COLLEGE  
Office of Student Personnel

TO: Dr. Bridgman, Provost

FROM: R. O. Maier, Dean of Students

Analysis of SCAT V and Q %ile Scores made by Maui  
Community College Students Enrolled in Fall Semester 1967

In the Fall Semester of 1967 a total of 504 students enrolled in the regular day program at Maui Community College. Of these, SCAT V and Q %ile scores were available for 308 students. The distribution of these 308 students by major areas of study is as follows:

All students -- 308  
Liberal Arts -- 87  
Vocational -- 216

Business -- 133 (Accounting, Secretarial, General Office)  
Building Construction - 39 (Arch. Dr., Carpentry)  
Automotive Technology - 23 (Auto Body & Repair, Auto-Mech.)  
Metal & Mach. Tech. - 16 (Welding & Sheet Metal, Mach. Tech.)  
Apparel Design - 5

Unclassified -- 5

The mean percentile scores on the SCAT V and Q tests are as shown in the following table.

MEAN PERCENTILES FOR MCC STUDENTS -- FALL 1967

	Bus.	Bldg.	Auto	Metal	App	All	Lib.	Uncl.	All Stud.
	Const	Tech	Mach.	Des	Voc.	Arts			
			Tech.						
SCAT V	35.60	29.80	25.20	15.50	19.00	33.35	54.85	30.00	38.15
SCAT Q	51.90	51.85	39.30	34.25	31.00	48.49	66.90	54.00	55.75
Q-V	16.30	22.05	14.10	18.75	12.00	15.14	12.05	24.00	17.60

In every case the mean percentile Q-score exceeded the V-score by at least 12 percentile points.

A simple statistical test was made to determine whether or not we have a significantly different percentage of students scoring at or below 50th percentile. A tabulation of these results is presented on the next page.

UNIVERSITY OF CALIFORNIA  
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Per Cent of Students Scoring at or below 50th Percentile

	Bus. Con.	Bldg. Tech.	Auto Mach.	Metal Des.	App. Voc.	All Lib. Arts	Uncl.	All Stud.	
% V $\leq$ 50%ile	72	82	87	100	100	78	38	60	67
Significance V	Yes	Yes	Yes	Yes	?	Yes	Yes	?	Yes
% Q $\leq$ 50%ile	55	44	70	69	60	55	16	40	44
Significance Q	No	No	No	No	?	No	Yes	?	Yes

In the preceding tabulations the ? indicates that insufficient data were available. Yes indicates that the percentages given were significantly different. Where yes is indicated and the corresponding percentage is more than 50, the number of students scoring below the 50th percentile is significantly too many, thus indicating a low level of ability. Where yes is indicated and the corresponding percentage is less than 50, the number of students scoring below the 50th percentile is significantly too few, thus indicating a high level of ability.

As can be seen, our students are in need of improvement in verbal skills. All categories are significantly low in verbal skills, with the exception of our Liberal Arts students who show up as significantly high.

With regard to quantitative skills, although some categories had more than 50 percent falling in the bottom half, no significant differences were found for the vocational students.

APPENDIX

For those readers interested in the statistical test used, a simple conservative 95 per cent confidence interval was set on the parameter  $\bar{p}$  (sample estimate of percentage of students at or below the 50th percentile). In this test the probability statement is as follows:

$$Pr\left(\bar{p} - \frac{1}{\sqrt{n}} \leq p \leq \bar{p} + \frac{1}{\sqrt{n}}\right) = .95$$

Where  $\bar{p}$  represents the sample estimates,  $n$  is the sample size, and  $p$  represents the true value of  $p$ .

For the analysis of these data, the assumption was made that 50 per cent of a normal population falls at or below the 50th percentile. (ie.  $p = .50$ ) The actual percentage in the sample was determined ( $\bar{p}$ ), and the lower and upper limit of  $p$  was found by adding and subtracting  $\frac{1}{\sqrt{n}}$  to the estimate  $\bar{p}$ . If these limits included .50 between them, then no significant difference exists. Otherwise, the difference is significant.

SCAT V %iles

%ile.	Bus. Con.	Bldg. Con.	Auto Tech	Metal Mach.	App. Des	Unclass.	All Voc	Lib. Arts	All Students
96-- 100	0	0	0	0	0	0	0	0	0
91 - 95	0	1	1	0	0	0	2	1	3
86 - 90	1	0	0	0	0	0	1	2	3
81 - 85	1	1	0	0	0	0	2	5	7
76 - 80	3	0	0	0	0	0	3	7	10
71 - 75	3	1	0	0	0	0	4	9	13
66 - 70	5	0	0	0	0	0	5	6	11
61 - 65	6	1	0	0	0	0	7	3	10
56 - 60	11	1	1	0	0	1	13	9	23
51 - 55	7	2	1	0	0	1	10	12	23
46 - 50	7	0	2	0	0	0	9	5	14
41 - 45	13	3	1	0	0	0	17	7	24
36 - 40	5	3	0	0	0	1	8	5	14
31 - 35	8	3	1	1	1	0	14	2	16
26 - 30	9	2	3	1	1	0	16	7	23
21 - 25	14	6	0	1	0	1	21	4	26
16 - 20	12	3	2	4	1	0	22	1	23
11 - 15	10	4	2	4	1	0	21	2	23
6 - 10	12	4	6	2	0	0	24	0	24
1 - 5	6	4	3	3	1	1	17	0	18
TOTALS	133	39	23	16	5	5	216	87	308

SCAT Q %iles

%ile	Bus. Con.	Bldg. Tech	Auto Tech	Metal Mach.	App. Des	Unclass.	All Voc	Lib. Arts	All Students
96 - 100	0	1	0	0	0	0	1	9	10
91 - 95	6	0	1	0	0	0	7	18	25
86 - 90	13	2	1	1	0	0	17	4	21
81 - 85	4	2	1	0	0	0	7	14	21
76 - 80	5	2	1	1	0	0	9	7	16
71 - 75	14	3	0	0	0	3	17	10	30
66 - 70	4	4	0	0	1	0	9	2	11
61 - 65	5	2	0	1	1	0	9	2	11
56 - 60	4	4	1	1	0	0	10	0	10
51 - 55	7	2	2	1	0	0	12	7	19
46 - 50	13	4	2	0	0	0	19	3	22
41 - 45	10	1	3	1	0	0	15	0	15
36 - 40	8	1	0	1	0	1	10	2	13
31 - 35	7	2	1	2	0	0	12	1	13
26 - 30	4	0	0	0	0	0	4	3	7
21 - 25	10	3	1	0	0	0	14	4	18
16 - 20	10	0	3	0	1	0	14	0	14
11 - 15	6	3	3	3	0	1	15	1	17
6 - 10	2	3	3	2	0	0	10	0	10
1 - 5	1	0	0	2	2	0	5	0	5
TOTALS	133	39	23	16	5	5	216	87	308