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SUBJECT: Correlation of New BIOL40A Placement Exam with Student Grades

Results from the Proposed BIOL 40A Placement Exam

In the fall of 2004, Biology department faculty designed a new exam for placement of students into Biology 40A, Human Anatomy and Physiology. Following state matriculation regulations, a validity check of the exam was conducted in the winter of 2005 as prelude to the use of the exam for placements. Biology 40A students were given the exam within the first two weeks of the quarter (see methodology section at the end for additional detail). The results for each student were then compared with the final grade for the class. A Pearson Coefficient test resulted in a correlation of .42, which is above the .35 minimum recommended. Based on the .35 minimum Pearson criteria, the test represents a valid predictor of student grades in Biology 40A.

Additional Observations on the Results

The data indicates that the test does a better job of predicting A versus F grades than B versus C grades. As indicated on Figure 1, the average test score for students with B and C grades were nearly identical. Figure 2 indicates that there are a wide range of test scores for each grade. This result should be kept in mind when determining the cut off score to be used for future placements.

Figure 1

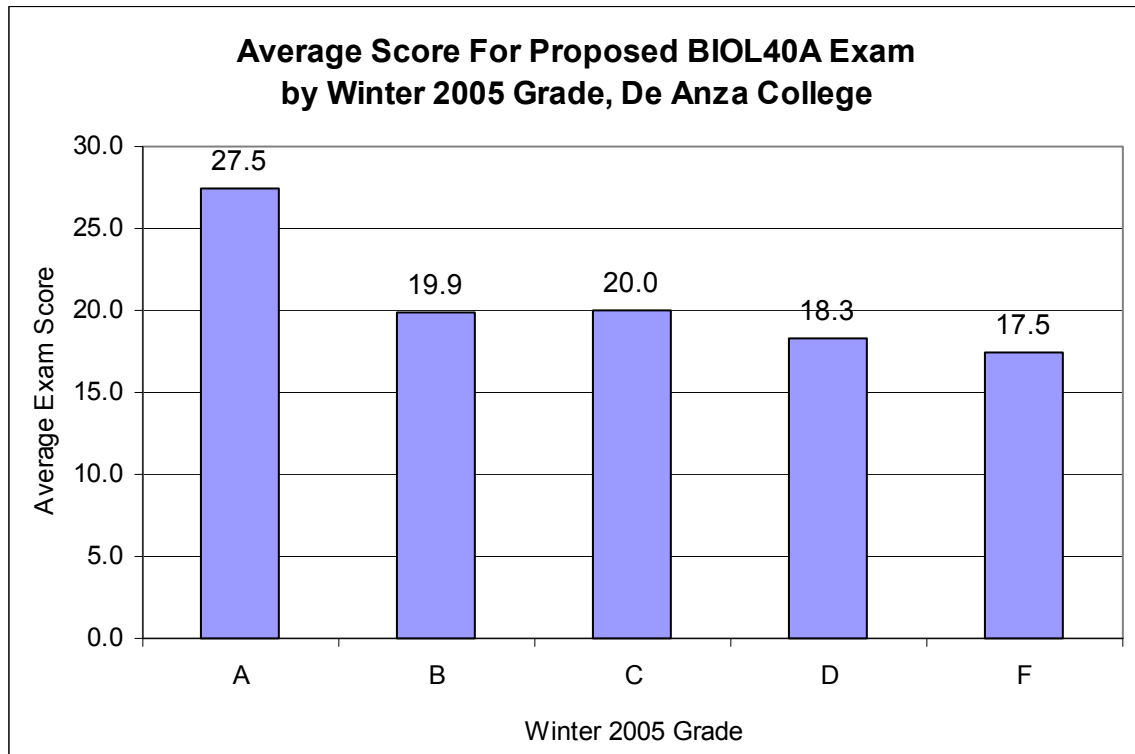
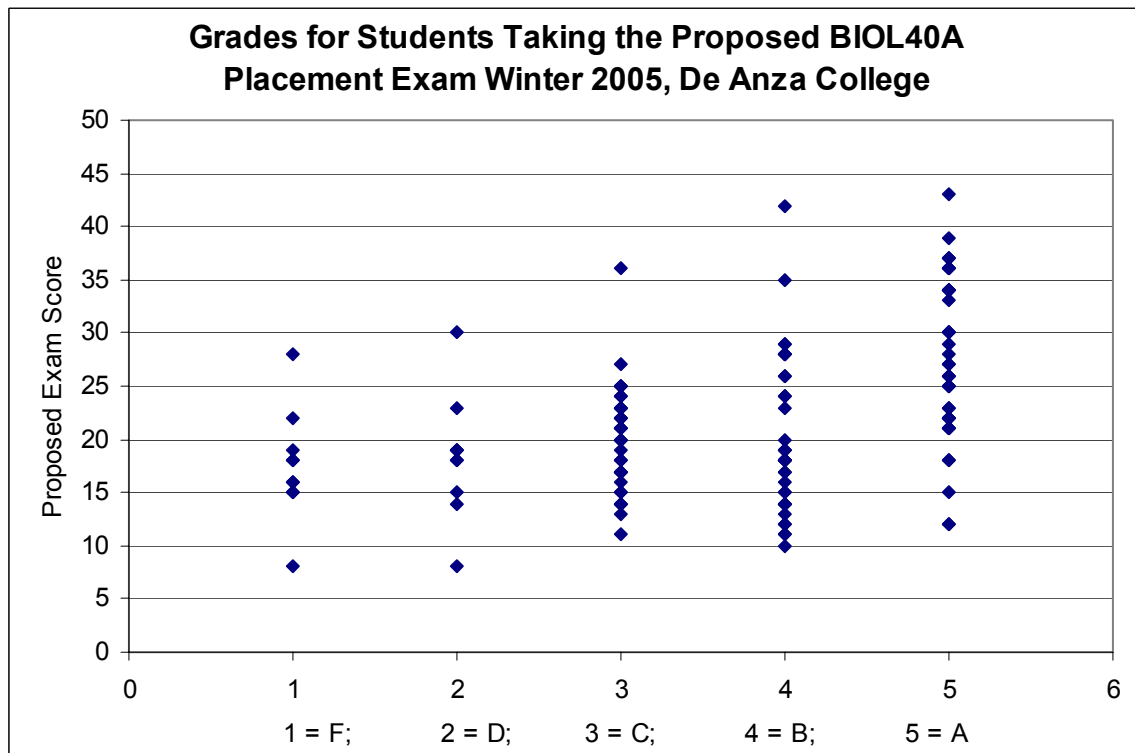


Figure 2



Methodology for Validating the Correlation Between the
Proposed Biology 40A Placement Exam and Student Course Grades

New exam administered in class Winter 2005 (1-2nd week)

There were 4, BIOL40A Sections in Winter 2005 with a total enrollment at census of 162.

Of the 162 students, 18 students received an I or W grade and were pulled from the analysis.

- Of the 162 students with a grade, 144 had a grade of A, B, C, D, or F.
- Of these 162, 6 students did not have an exam score and were pulled from the analysis (grades: A, A, C, C, F, F).

157 students took the exam, with scores ranging from 8 to 43.

- Of the 157, 6 students dropped the course before census (scores: 9, 9, 22, 23, 25, 36)

The final population included students with an exam score and a grade of A, B, C, D, or F, resulting in 138 observations.

Of the 138 observations, there were 10 F, 10 D, 34 C, 40 B, and 44 A grades.

If the grades are converted to A=5, B=4, C=3, D=2, F=1, then the average gpa would be a 3.7 (high C range), the median gpa would be a 4 (B), and the mode is 5 (A).

The exam score for these 138 students ranged from 8 to 43 with an average of 22, median 21 and mode 18.

The Pearson Correlation was calculated using excel with a resulting value of .42.

De Anza College BIOL40A Winter 2005
Grades and Placement Exam Results

Observation Number	Letter Grade	Numerical Grade	BIOL40A Exam Score
1	A	5	23
2	A	5	30
3	A	5	36
4	A	5	37
5	A	5	37
6	A	5	22
7	A	5	28
8	A	5	22
9	A	5	21
10	A	5	34
11	A	5	18
12	A	5	34
13	A	5	30
14	A	5	27
15	A	5	12
16	A	5	22
17	A	5	34
18	A	5	43
19	A	5	27
20	A	5	36
21	A	5	15
22	A	5	26
23	A	5	26
24	A	5	12
25	A	5	21
26	A	5	22
27	A	5	18
28	A	5	34
29	A	5	36
30	A	5	22
31	A	5	30
32	A	5	37
33	A	5	39
34	A	5	23
35	A	5	36
36	A	5	26
37	A	5	21
38	A	5	29
39	A	5	21
40	A	5	25
41	A	5	34
42	A	5	25

43	A	5	25
44	A	5	33
45	B	4	14
46	B	4	29
47	B	4	18
48	B	4	28
49	B	4	24
50	B	4	14
51	B	4	18
52	B	4	19
53	B	4	10
54	B	4	24
55	B	4	14
56	B	4	13
57	B	4	11
58	B	4	14
59	B	4	18
60	B	4	23
61	B	4	19
62	B	4	15
63	B	4	17
64	B	4	29
65	B	4	26
66	B	4	12
67	B	4	12
68	B	4	18
69	B	4	17
70	B	4	18
71	B	4	16
72	B	4	20
73	B	4	42
74	B	4	28
75	B	4	19
76	B	4	18
77	B	4	15
78	B	4	11
79	B	4	18
80	B	4	26
81	B	4	35
82	B	4	28
83	B	4	18
84	B	4	28
85	C	3	22
86	C	3	14
87	C	3	24
88	C	3	22
89	C	3	18
90	C	3	14
91	C	3	17
92	C	3	15

93	C	3	23
94	C	3	11
95	C	3	13
96	C	3	20
97	C	3	14
98	C	3	17
99	C	3	17
100	C	3	19
101	C	3	18
102	C	3	25
103	C	3	20
104	C	3	23
105	C	3	16
106	C	3	21
107	C	3	15
108	C	3	23
109	C	3	20
110	C	3	27
111	C	3	22
112	C	3	17
113	C	3	21
114	C	3	21
115	C	3	25
116	C	3	36
117	C	3	25
118	C	3	24
119	D	2	19
120	D	2	30
121	D	2	8
122	D	2	15
123	D	2	19
124	D	2	14
125	D	2	18
126	D	2	23
127	D	2	18
128	D	2	19
129	F	1	19
130	F	1	18
131	F	1	8
132	F	1	16
133	F	1	15
134	F	1	18
135	F	1	22
136	F	1	15
137	F	1	28
138	F	1	16