Correlation of Admission Criteria with Dental School Performance and Attrition

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Abstract: This study was conducted to provide current information on the relationship between admission criteria and dental school performance, including the association of admission criteria and dental school outcomes such as remediation and attrition. Standard tests of bivariate association and multivariate regression models appropriate for continuous and discrete dependent variables were used to examine the relationship between multiple indicators of admission criteria and dental school performance for six recent classes at the University of Florida College of Dentistry (UFCD). The admission criteria included the undergraduate science grade point average (GPA), undergraduate non-science GPA, Dental Admissions Test (DAT) academic score, Perceptual Motor Aptitude Test (PMAT) score, and admission interview score. Measures of dental school performance were the National Dental Board Examination Part I and Part II (NB-I, NB-II) scores, yearly and final dental school GPA, and academic progress through the UFCD program. In general, most admission criteria were good bivariate indicators of dental school performance. Multivariate analyses indicated that students with higher undergraduate science GPAs and DAT academic scores were more likely to achieve higher NB-I and NB-II scores. The undergraduate science GPA and admission interview score were the most consistent determinants of dental school GPA. Students with lower undergraduate science GPAs, DAT academic scores, and PMAT scores were more likely to remediate, to repeat an academic year, or to be dismissed. Although bivariate differences were observed in several admission criteria of students who remediated one or more courses, repeated an academic year, or were dismissed, only the undergraduate science GPA and the PMAT score were indicators of programmatic progress in the multivariate analysis.

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Earlier educational researchers have examined some of the relationships between admission criteria and academic success during dental school. The admission criteria have included high school grade point average (GPA), undergraduate total GPA, undergraduate science GPA, individual and averaged Dental Admission Test (DAT) scores, preprofessional major, and dental school admission interviews. These criteria have been compared with dental school performance measures, including dental school GPA, various clinical and didactic grades, individual and averaged National Dental Board Examinations Part I and Part II (NB-I and NB-II) scores, and individual student communication and technical skill ratings as assessed by faculty and peers.[1-20]

In some cases, researchers have concluded that there is a single consistently valid admission criterion that can be used to predict dental school performance, in which performance is determined by final dental school GPA.[3-5] More often, however, researchers have concluded that two or more admission criteria, in combination, provide a more reliable means of predicting academic success in dental school.[6-10] In particular, undergraduate total GPA and DAT academic score have been shown to be two of the best predictors of academic success. Likewise, undergraduate science GPA and DAT science score have also demonstrated a strong positive correlation with successful dental school performance.[3-5] Not all admission criteria, however, have proven equally reliable. The Perceptual Motor Aptitude Test (PMAT) score and the dental school admission interview score, for example, have been less consistent indicators of dental school performance.[3,6-8,11-14,17-20]

While earlier researchers have examined the relationships between admission criteria and academic success during dental school, they have largely drawn upon relatively small student populations, and have attempted to correlate isolated admission criteria with a relatively small number of dental school performance measurements.[2-4,6-8,10-14,19,20] By way of contrast, the authors of the present study have drawn upon a relatively large student population (N = 459) and have attempted to correlate comprehensive admission criteria with a relatively large number of dental school performance measurements. In this study, the authors also paid particular attention to the admission criteria of students who either remediated one or more courses or repeated a year of dental school and of those students who either were dismissed or withdrew in poor academic standing or withdrew in good academic standing.

Methods

The study population consisted of 459 students who were enrolled in the University of Florida College of Dentistry (UFCD) from 1990 through 1995 (the graduating classes of 1994 through 1999). Earlier classes were excluded from the study because their DAT scores had been determined according to a different grading scale, and this change rendered score comparisons difficult and, possibly, unreliable.

Admission criteria included undergraduate science GPA, undergraduate non-science GPA, DAT academic score, PMAT score, and dental school admission interview score. The DAT academic score was determined by averaging the DAT quantitative, DAT reading comprehension, DAT biology, DAT inorganic chemistry, and DAT organic chemistry scores. The DAT scores and the PMAT score were calculated by the American Dental Association, Dental Admissions Testing Program, and were reported to the UFCD Admissions Committee at the request of each dental school applicant.

The dental school admission interview score was determined by three faculty members of the Admissions Committee at the UFCD. Following a single informal session with a dental school applicant, each faculty member assigned a numerical value from 0 to 30 (where 0 is "unacceptable" and 30 is "outstanding") to the applicant's interview. This score is based on factors including, but not limited to, pro-fessional demeanor, maturity, dental-related experience, clarity of expression, and motivation for selecting a career in the dental profession. The three interviewers' scores were then averaged to determine the applicant's dental school admission interview score. The interviewers did not rely upon standardized questions during their interviews, nor did they tailor the process to the purposes of this retrospective study.

Students' academic progress during dental school was measured by NB-I and NB-II scores, yearly GPA, and final (cumulative) GPA. Yearly and final GPAs were calculated on a 4.0 scale and were weighted appropriately for credit hours. The authors obtained information about yearly and final GPA, NB-I and NB-II scores, and attrition rates from the UFCD Office of Academic Affairs. Descriptive measures for dental school admission criteria and dental school performance outcomes are shown in Table 1.

Table 1. Descriptive measures for dental school admission criteria and dental school outcomes

Admission Criteria	
Science Grade Point Average	3.0 [0.4][a]
Non-Science Grade Point Average	3.3 [0.4]
Dental Admission Test	
Academic	17.5 [2.0]
PMAT	16.9 [2.5]
Average Interview Score	25.7 [2.6]
Dental School Performance	
Class (number of students)	
1994	79
1995	70
1996	77
1997	77
1998	78
1999	78
Grade Point Average	
Year 1	3.2 [0.5]
Year 2	3.1 [0.4]
Year 3	3.3 [0.3]
Year 4	3.4 [0.3]
Final	3.2 [0.3]
National Board Exams I	86.0 [4.4]
National Board Exams II	81.8 [4.2]
Programmatic Status	
Left, in Good Standing (%)	4.4
Left, not in Good Standing (%)	4.1
Graduated, but with difficulty[b] (%)	8.9

Notes:
N = 459
a Where appropriate, standard deviation is shown in brackets.
b Students who were either retracked or failed, and subsequently retook, the first or second National Board Exam.

At the UFCD, academic progress is also independently monitored by the Student Performance Evaluation Committee (SPEC), which reports individual students to the dean as potential candidates for probation, repeating a year (retracking), or dismissal. The authors reviewed the monthly records of the SPEC to obtain information concerning its evaluations and recommendations. The Student Performance Evaluation Committee made its determinations in accordance with the following guidelines. At the end of the first semester of the first year, students were automatically placed on academic probation if their GPA was less than 2.5 or if they failed a course. At the end of the first year, students with a cumulative GPA of less than 2.5 were recommended either to be dismissed or to be retracked. Students who failed a course during their first year were automatically placed on academic probation until successful remediation (achieved a grade of C or higher) was completed. During their second, third, and fourth years, students who received D and/or F grades reflecting five or more credit hours in any didactic or clinical course were referred to the SPEC for probation. Students who received D and/or F grades reflecting eight or more credit hours were required to retrack or were dismissed from the program. Students on academic probation during their second, third, and fourth years could regain good standing by successfully completing remediation or by re-enrolling in the program.

The students who participated in this study were placed into one of four groups. They 1) graduated without difficulty; 2) graduated with difficulty (that is, they were retracked one or more times, or they graduated after their class, or they failed either NB-I or NB-II exams); 3) were dismissed from the program or withdrew in poor academic standing; or 4) withdrew in good academic standing. Students in the latter three groups either consumed a disproportionate amount of institutional resources in graduating, or else failed to graduate, and thus did not achieve the desired outcome of the dental education program.

Pearson correlation coefficients were used to describe the bivariate association between admission criteria and dental school performance outcomes (GPA, NB-I and NB-II scores), and t-tests were used to compare admission criteria across groups based on academic progress. Multivariate regression models appropriate for continuous and discrete dependent variables were used to weigh the effect of specific admission criteria on dental school performance and progress. Ordinary least squared (OLS) regression models were used to ascertain which admission criteria were associated with NB-I and NB-II scores, yearly GPA, and final GPA. Finally, logistic regression models were used to examine the relationship between admission criteria and programmatic status.

Results

The relationships between admission criteria and dental school performance are depicted in Table 2. All relationships, with the single exception of the correlation between the DAT academic score and fourth-year GPA, were statistically significant ($p < .05$). The correlation between the DAT academic score and the NB-I and NB-II scores was particularly strong. The undergraduate science GPA and the PMAT score also correlated well with the NB-I and NB-II scores.

The correlation between the undergraduate science GPA and the dental school GPA, including yearly GPA and final GPA, was consistently stronger than those between the undergraduate non-sci-

Table 2. Pearson correlation coefficients of dental school admission criteria with dental school performance measures

	National Board Exam Scores		Grade Point Averages				
Admission Criteria	I	II	Year 1	Year 2	Year 3	Year 4	Final
Science GPA	.309	.280	.413	.387	.320	.291	.425
Non-Science GPA	.185	.194	.285	.272	.251	.187	.294
DAT Academic Score	.507	.433	.475	.348	.129	.082†	.317
PMAT Score	.263	.304	.279	.165	.098	.109	.198
Interview Score	.159	.125	.258	.233	.197	.168	.251

Notes:
The correlation matrix is based on the 410 students who graduated from the UFCD program and had complete admissions and performance data.

† All relationships are statistically significant ($p < .05$) except for this one.

ence GPA and the dental school GPA. During the first two years of dental school, the correlation between the DAT academic score and GPA was similarly strong; during the third and fourth years, however, the correlation between the DAT academic score and GPA was considerably weaker. This tendency is reflective of a larger pattern, as the correlation between each of the admission criteria and the dental school GPA diminished as the students progressed through the curriculum.

To consider the simultaneous effects of admission criteria on NB-I and NB-II scores and dental school GPA, seven OLS regression models were estimated. The results of these models are shown in Table 3. The NB-I and NB-II scores serve as dependent variables in the first two models (represented by columns 1 and 2, respectively). The overall model fit for each of the two models was relatively good. The significance of the F-statistic ($p < .05$) in each model indicates that the admission criteria, considered as a whole, were significant indicators of students' performance on the NB-I and NB-II exams, accounting for approximately one-third of the variation in NB-I scores ($r = .32$) and approximately one-fourth of the variation in NB-II scores ($r = .27$).

The undergraduate science GPAs were strongly correlated with the NB-I and NB-II scores. Although the DAT academic score correlated strongly with the NB-I score, the correlation between the DAT academic score and the NB-II score was somewhat weaker. The PMAT score correlated with the NB-II score, but not the NB-I score. When the simultaneous effects of admission criteria were considered, there was considerable class variation in NB-I and NB-II scores. On the NB-I exam, each class except the class of 1996 demonstrated higher scores than did the class of 1999, which served as the reference category. On the NB-II exam, the classes of 1994 and 1995 scored significantly higher than did the class of 1999.

The yearly and final GPA served as the dependent variables in the remaining five models (columns 3-7, Table 3). The overall model fit for each of the five models was relatively good. The F-statistic was significant in each instance. Admission criteria explained more of the variation in GPA for the first two years in dental school ($r = .40$ and $r = .29$, respectively) than for the last two years ($r = .15$ and $r = .21$, respectively), and accounted for approximately one-fourth of the variation in final GPA ($r = .28$).

The undergraduate science GPA was strongly correlated with the yearly dental school GPA. The admission interview score also correlated with the yearly dental school GPA, but to a lesser degree. During the first two years of dental school, a high DAT academic score was likely to indicate a high GPA, although this likelihood decreased during the junior and senior years. During the first and final years of dental school, the PMAT score showed a positive correlation with GPA, although this correlation weakened during the second and third years.

Table 3. Ordinary least squares regression models of dental school performance on admission criteria

| | National Board Exam Scores | | Grade Point Averages | | | | |
	I	II	Year 1	Year 2	Year 3	Year 4	Final
Class							
1994	1.42*	1.57*	-.26*	-.07	.08	-.10*	-.03
1995	1.89*	1.76*	.02	.05	.11*	-.09*	.07
1996	.29	-.17	.07	.12	.03	-.07	.08
1997	1.48*	.53	.07	.19*	.10*	-.15*	.09*
1998	1.78*	-.57	.06	.18*	.02	-.27*	.06
1999	—[a]	—	—	—	—	—	—
Preadmission Criteria							
Science GPA	2.11*	2.01*	.34*	.29*	.18*	.19*	.25*
Non-Science GPA	-.46	.12	.06	.07	.08	.05	.06
DAT Academic Score	1.05*	.77*	.07*	.05*	.002	-.01	.02*
PMAT Score	.04	.21*	.02*	.007	.009	.01*	.01*
Interview Score	.13	.09	.02*	.02*	.01*	.01*	.01*
Constant	57.58*	55.61*	-.14	.54	1.89*	2.50*	1.24*
R^2	.324	.273	.396	.286	.154	.210	.279
F	19.14*	15.03*	26.17*	15.96*	7.24*	10.63*	15.42*

Notes:
The regression models are based on the 410 students who graduated from the UFCD program and had complete admissions and performance data.
* $p < .05$
[a] Reference category is the class of 1999.

The final dental school GPA was significantly associated with each of the admission criteria except the undergraduate non-science GPA. Although the curriculum underwent only marginal revision during the study period, there was some class variation in dental school GPA (Table 3). Much of this yearly interclass variation was offset over the course of the complete program.

In order to determine whether a strong correlation existed among the admission criteria of students who did not graduate or who required substantial remediation in order to graduate, we compared the mean of each admission score across groups representing four categories of progress through the UFCD program. These comparisons are presented in Table 4. When students who graduated with difficulty or students who were dismissed were compared with students who graduated without difficulty, the former two groups were found to have lower undergraduate science GPAs, lower DAT academic scores, and lower PMAT scores. When students who were dismissed were compared with students who graduated without difficulty, the former group had lower undergraduate non-science GPAs.

Finally, three logistic regression models were estimated in order to consider the simultaneous effects of admission criteria on academic progress through the UFCD curriculum. The results of these models are presented in Table 5. The first logistic regression model compares those who graduated with difficulty with those who graduated without difficulty (column 1, Table 5). The significance of the model chi-square (p < .05) indicates that, among those who completed the program, admission criteria were reasonable determinants of those who graduated with difficulty. The model demonstrates specifically that those students with lower undergraduate science GPAs and PMAT scores were more likely to

be retracked one or more times, graduate after their class, or to fail NB-I or NB-II exams.

The second logistic regression model compares those who were dismissed from the program or withdrew in poor academic standing with those who graduated without difficulty (column 2, Table 5). The unremarkable fit of the model demonstrates that, in general, admission criteria did not dramatically indicate the likelihood of dismissal. Among the admission criteria, only lower PMAT scores were particularly associated with students who were dismissed.

The last logistic regression model compares those who withdrew in good academic standing with those who graduated without difficulty (column 3, Table 5). Taken as a whole, the model represents an improvement over the intercept alone. In general, however, the admission criteria did not significantly indicate the likelihood of withdrawal. This likelihood was subject to some degree of class variation, however, as students in the class of 1994 demonstrated a more marked tendency to withdraw than did their counterparts in the class of 1999. No class variation was observed in other aspects of programmatic progress.

Discussion

This study demonstrates, first, that the undergraduate science GPA and DAT academic score showed a significant positive correlation with NB-I and NB-II scores, a finding that corroborates the evidence of previous studies.[8,15] When all admission criteria were taken into consideration using OLS regression models (Table 3), the undergraduate science GPA strongly and consistently determined not only NB-I and NB-II scores, but also GPA at every year of dental school. The DAT academic score was also

Table 4. Association between programmatic status and admission criteria

	Group 1: Graduated, No Difficulty (N = 379)	Group 2: Graduated with Difficulty[a] (N = 41)	Group 3: Dismissed (N = 19)	Group 4: Withdrew (N = 20)
Preadmission Criteria				
Science GPA	3.1	2.9[b]	2.8[b]	3.3[bcd]
Non-Science GPA	3.3	3.2	3.1[b]	3.4
DAT Academic Score	17.6	16.3[b]	16.4[b]	18.2[c]
PMAT Score	17.1	15.6[b]	15.4[b]	17.0
Interview Score	25.7	26.0	24.8[c]	25.7

a A student "graduated with difficulty" if she or he was retracked, graduated after their class, or failed either of the National Board Exams.
b different from Group 1 (p < .05)
c different from Group 2 (p < .05)
d different from Group 3 (p < .05)

Table 5. Logistic regression models of programmatic status on admission criteria

	Graduation with Difficulty *versus* Graduation with No Difficulty	Dismissed *versus* Graduation with No Difficulty	Withdrew *versus* Graduation with No Difficulty
Class			
1994	0.18 (0.02, 1.98)[a]	0.91 (0.18, 4.56)	4.80 (1.12, 20.61)
1995	1.60 (0.37, 6.94)	0.18 (0.02, 1.99)	2.32 (0.47, 11.30)
1996	2.33 (0.58, 9.42)	0.42 (0.07, 2.55)	0.58 (0.06, 5.93)
1997	1.14 (0.26, 4.98)	0.64 (0.11, 3.58)	—[b]
1998	2.45 (0.59, 10.13)	0.89 (0.17, 4.75)	0.37 (0.06, 2.32)
1999	—[c]	—	—
-			
Preadmission Criteria			
Science GPA	0.27 (0.09, 0.83)	0.26 (0.05, 1.30)	2.58 (0.59, 11.31)
Non-Science GPA	1.06 (0.36, 3.17)	0.52 (0.10, 2.65)	1.24 (0.21, 7.31)
DAT Academic Score	0.79 (0.62, 1.01)	0.90 (0.67, 1.22)	1.26 (0.93, 1.69)
PMAT Score	0.78 (0.64, 0.95)	0.75 (0.57, 0.99)	0.89 (0.72, 1.10)
Interview Score	1.16 (0.97, 1.39)	0.93 (0.78, 1.12)	1.00 (0.84, 1.21)
Constant[d]	5.31	11.60*	-9.31*
Model χ^2	43.70*	18.0	21.90*
Model df	10	10	10
N	420	398	399

Notes:
* $p < .05$
[a] Odds ratios are presented along with 95% confidence intervals.
[b] Because no students withdrew in 1997, the parameter for that year is not estimabled.
[c] Reference category is the class of 1999.
[d] Parameter estimates, rather than odds ratios, are shown for intercepts.

strongly indicative of NB-I and NB-II scores—suggesting, perhaps, that DAT academic scores may be broadly predictive of standardized test-taking ability—and of freshman, sophomore, and final GPA as well. The diminution of strength of the correlation between the DAT academic score and third- and fourth-year GPA may be attributed, perhaps, to the nature of standardized tests. If the DAT, as a standardized test, measures subject knowledge and problem-solving aptitude rather than interpersonal skills or organizational talents, then it cannot gauge, nor can it predict, a student's fitness for patient management. Inasmuch as patient management is of paramount importance during a dental student's junior and senior years, then the DAT score, accordingly, may become a less reliable indicator of academic success during the last two years of the dental school curriculum.

This study also demonstrates, by way of multiple OLS regression analyses, that the PMAT score showed a significant positive correlation with the NB-II score and the freshman, senior, and final GPA. This new finding challenges the evidence of previous studies, according to which there exists no strong or consistent correlation between the PMAT score and dental school performance.[3,6-8,17-20] Since a student's junior and senior years in dental school education are largely dedicated to clinical rather than

didactic education, then one might expect that the psychomotor skills measured by the PMAT would be more predictive of GPA during these years. In a previous study, however, Boozer et al. argued, to the contrary, that the PMAT was not a reliable indicator of success during the last two years of dental school.[5] The study of Boozer et al. and our own study may serve to explain the existence of a positive correlation between the PMAT score and yearly and final GPA. Our results warrant the conclusion that the PMAT has some demonstrable value in predicting particular dental school performance outcomes, even if that value is neither as strong nor as determinate as that of the undergraduate science GPA or the DAT academic score.

This study demonstrates, furthermore, that the undergraduate non-science GPA showed no significant correlation either with NB-I and NB-II scores or with yearly or final dental school GPA. This result might seem, yet again, to restate the obvious—namely, that students who are better trained in science rather than the liberal arts will be better prepared to make use of a curriculum that is steeped in the basic and clinical sciences.

Like other studies, this one attempts to demonstrate whether a strong correlation exists between the dental school admission interview score and dental school performance outcomes. Some studies have

found no correlation and concluded that the admission interview score does not consistently predict academic success.[6,8,11-14] Other studies have found a weak correlation and concluded that the interview score may be one factor among many that indicates the likelihood of success during the clinical years of dental school, or that the interview score may enable educators to better anticipate any academic problems that may arise as a student progresses through the curriculum.[11,13] This study demonstrates, however, that the admission interview score showed a significant positive correlation with academic success, particularly with the yearly and final GPAs. The marked differences that separate these studies may be readily attributed, however, to differences in the interviewing process as implemented by different schools. At the UFCD, for example, the process is not "blind": interviewing faculty members have access to each candidate's undergraduate transcripts before and during the interview. The interview score assigned to each candidate may reflect not only the student's ability to communicate effectively, but may also be a subjective projection of the candidate's ability to successfully complete the dental school curriculum based upon previously established grades and standardized test scores. We suggest, however, that the subjective component is of vital importance to interviewers who are, after all, asked to evaluate students' dedication, self-motivation, and similar qualities not readily given to quantification. This should not be seen as an argument against objectivity in the interviewing process, but rather as a modest reminder that many admission decisions are, in the end, strongly subjective.

Unlike other studies, this study demonstrates that the admission criteria showed several significant associations with programmatic status (Table 4). With the inclusion of this parameter, we were able to identify and evaluate differences between those students who graduated without difficulty (group 1), those who graduated with difficulty (group 2), those who were dismissed or withdrew in poor academic standing (group 3), and those who withdrew in good academic standing (group 4). We paid particular attention to the academic criteria of those students in group 2 because, although they met the institution's ultimate goal, they did so by consuming resources of time and money at an inordinate pace. Students with a low undergraduate science GPA, a low DAT academic score, and a low PMAT score were more greatly associated with the need for delayed graduation, or dismissal. Similarly, the undergraduate non-science GPA of students who were dismissed was significantly lower than among students who graduated without difficulty. The undergraduate science GPA and the PMAT score remained significantly associated with delayed graduation when all criteria were considered simultaneously (Table 5). However, a lower PMAT score was the only admission criteria associated with dismissal. Broadly generalized, these findings may be important in identifying students who show the potential to deplete limited and valuable institutional resources. If dental educators are better able to identify students at risk, they may take active measures to prevent failure rather than rely on passive remedial measures after the fact.

This study demonstrates that students who withdrew in good academic standing had a significantly higher undergraduate science GPA than students in all other groups, as well as a higher DAT academic score than those students who were dismissed or withdrew in poor academic standing. These results—summarized by saying that many academically gifted students were to be found among those who did not complete dental school—may be somewhat skewed by the unusually large number of students from the class of 1994 who withdrew from dental school in 1990. Taken as a whole, however, these findings are not only consistent with but complement the findings of Kramer et al.,[17] who concluded in a 1986 study that students who withdrew from dental school in poor academic standing had lesser academic qualifications than did those who withdrew in good academic standing or who remained in dental school.

In light of these findings, then, it is incumbent upon dental educators not only to challenge academically gifted students in the classroom and in the clinic, but also to assist them in surmounting obstacles, both real and perceived, in the outside world. It is incumbent, moreover, upon legislators and dental school administrators not only to provide academically gifted students with financial support by way of scholarships, but also to see that they receive the counseling, both academic and psychological, that they may need as they make their way through the curriculum.

Conclusion

In summary, from among the admission criteria under study, the undergraduate science GPA correlated most strongly and consistently with the indicated dental school performance outcomes. The DAT academic score, the PMAT score, and the admissions interview score were also associated, albeit to a lesser degree, with academic success.

The authors believe that the purpose of the admissions committee is to select the best candidates from a qualified applicant pool. These candidates, of course, would have repeatedly demonstrated their academic qualifications, in terms of GPA and standardized test scores, throughout their earlier careers as students. If these candidates were somehow able to demonstrate, moreover, that they would be able to graduate from dental school and that they would not disproportionately drain its valuable resources in doing so, then the task of the admissions committee would be simplified. The authors have attempted, cautiously and empirically, to begin to construct that task, and it is our contention that the undergraduate science GPA, the DAT academic score, and the PMAT score form the frame of that construction.

Future researchers might build upon these results by undertaking prospective studies that would validate a model of selected admission criteria in predicting academic difficulties in the dental school curriculum. Other investigators might also broaden them by attempting to establish relationships between dental school performance and success in clinical practice. That would hopefully allow admission decisions to be based not only on projections of performance in the classroom, but also on the potential for success beyond the classroom walls.

REFERENCES

1. Cianflone D, Zullo T. Relationship between dental school performance and preprofessional major courses of study. J Dent Educ 1975;39:78-81.
2. Waldman HB. College major and its relation to performance in dental school and on licensing examinations. J Dent Educ 1982;46:163-5.
3. Kreit LH, McDonald RE. Preprofessional grades and the dental aptitude test as predictors of student performance in dental school. J Dent Educ 1968;32:452-8.
4. Thompson GW, Ahlawat K, Buie R. Evaluation of the dental aptitude test components as predictors of dental school performance. J Canad Dent Assn 1979;45:407-9.
5. Boozer CH, Lee MM, Rayson J, Weinberg R. Prediction of academic success: a study with dental students using noncognitive and cognitive variables. J Amer Col of Dent 1984;51:14-21.
6. Staat RH, Yancey JM. The admission index in the dental school admissions process. J Dent Educ 1982;46:500-3.
7. Kramer GA. Predictive validity of the dental admissions test. J Dent Educ 1986;50:526-31.
8. Houston JB, Mensh IN. Multiple regression of predictors and criteria of dental school performance. Dent Res 1975;54:515-21.
9. Horton PS, Killip DE, Willard DH, Higa LH. Non-grade attributes in the selection of dental students. J Amer Col of Dent 1977;44:127-34.
10. Dworkin SF. Dental aptitude test as performance predictor over four years of dental school: analyses and interpretations. J Dent Educ 1970;34:28-33.
11. Walker JD, Killip DE, Fuller JL. The significance of the admission interview in predicting students' performance in dental school. J Med Educ 1985;60:569-71.
12. Graham JW, Boyd MA. A structured interview for dental school admissions. J Dent Educ 1982;46:78-82.
13. Killip DE, Fuller JL, Kerber E. The admission interview: the validity question. J Dent Educ 1979;43:547-51.
14. Boyd MA, Graham JW, Teteruck WR, Krupka J. Development and implementation of a structured interview for dental admissions. J Canad Dent Assn 1983;49:181-5.
15. Kress GC, Dogon IL. A correlational study of admission predictor variables and dental school performance. J Dent Educ 1961;45:207-10.
16. Wood WW. Grade averages and DAT scores as predictors of performance in dental school. J Dent Educ 1979;43:630-2.
17. Kramer GA, DeMarais DR. Trends in academic qualifications and performance of dental students. J Dent Educ 1986;50:213-20.
18. Boyd MA, Teteruck WR, Thompson GW. Interpretation and use of the dental admission and aptitude tests. J Dent Educ 1980;44:275-8.
19. Kramer GA, Kubiak AT, Smith RM. Construct and predictive validities of the perceptual ability test. J Dent Educ 1989;53:119-25.
20. Raybould TP, Raggard DC, Norton JC. Psychomotor skills and technical ability in dental school. J Dent Educ 1983;47:594-8.