

Annual Report for the 1998 Testing Year

National Athletic Trainers' Association Board of Certification, Inc.

The National Athletic Trainers' Association Board of Certification (NATABOC) protects the public by establishing and evaluating individual compliance with entry-level standards for the athletic training profession. Only the athletic trainers who satisfy these standards by submitting required documentation of coursework, experience, and other qualifications and by passing NATABOC's criterion-referenced examination can call themselves Certified Athletic Trainers (ATC). In thirty three states, athletic trainers must possess the ATC designation in order to practice. Virtually throughout the United States employers require that athletic trainers possess the ATC.

The value of the credential rests in large measure on the quality of the NATABOC examination. Accordingly, NATABOC works with Columbia Assessment Services, Inc. (CAS), a professional testing service specializing in certification and licensure examinations, to ensure that all guidelines and standards pertaining to the examination are fully satisfied. NATABOC conducted two significant projects to maintain the quality of the examination in 1998: the first phase of a new Role Delineation Study and a comprehensive examiner training program. NATABOC monitors the performance of the examination regularly to ensure its function at the highest possible level of quality.

Performance of the Certification Examination

NATABOC's certification examination contains three parts, a written multiple-choice test, a written simulation, and a practical. Candidates must pass all three parts in order to achieve certification. After qualifying to take the examination by completing an approved course of study (curriculum candidacy) or a required sequence of courses and an internship (internship candidacy), first-time candidates take all three portions on the same test date. If they are unsuccessful on any part, candidates can register only for the part(s) not yet satisfied. Each testing year (which begins with the April test administration and extends through the February test date) NATABOC introduces two new versions of the multiple-choice test, two new versions of the written simulation test, and four new versions of the practical.

Reliability

Reliability computation for the NATABOC examination is an estimate of the consistency of scores as a measure of competence in athletic training. While NATABOC computes reliability coefficients for each form and test date, the following report is based on annual statistics for each form and part of the examination. Internal consistency reliability is reported as the Kuder Richardson (20) coefficient and accounts for the degree to which items on the tests contribute consistently to candidates' scores. The KR(20) statistic ranges from 0 to 1, with coefficients above .70 meeting minimum standards. The standard error of measurement is the range within which candidates' true scores lie.

Table I. Internal Consistency, Standard Error of Measurement (S.E.M.), and Decision Consistency

	Written		Practical					Simulation	
Form	265	266	267	268	269a	269b	270	271	272
Reliability KR20	.79	.79	.85	.88	.88	.87	.89	.78	.78
Interrater Rel. % Agreement			.79	.84	.79	.76	.78		
Interrater Rel. Pearson's r			.78	.78	.79	.75	.79		
S.E.M.	5.03	5.11	3.38	3.66	3.70	3.63	3.56	8.39	7.75
Decision Consistency	.79	.80	.85	.88	.90	.89	.89	.78	.78

Since the purpose of the certification is to make valid and reliable pass/fail decisions, NATABOC also calculates decision consistency estimates using the Livingston formulation. The result of this analysis indicates that the classification of candidates in pass/fail categories exhibits reasonable consistency for all parts of the test. (The decision consistency coefficient is interpreted in a manner comparable to internal consistency.)

The accuracy of scores on the practical portion of the examination is a function of the interrater reliability. Examiners observe candidate performance on the practical examination and, using the scoring criteria defined for each problem, record whether or not the candidate performs required tasks at a level that is at least minimally competent. Interrater reliability is the measure of agreement between the examiners. A high level of agreement indicates that the scores are highly accurate. A full report of interrater reliability is attached as Appendix A.

How Candidates Perform on the Certification Examination

Including first-time candidates and those retaking parts of the examination, 4791 individuals took the written, 4108 took the practical, and 4282 took the written simulation. 31.12% of the candidates passed all three parts of the test on the first attempt. The performance of the total group of candidates is presented in Table II. Given that the various forms are equivalent, the data below are presented across forms.

Table II. All Candidates Taking the Examination

	Total Sitting	# Pass	% Pass	# Fail	% Fail
Written	4791	2223	46.40	2568	53.60
Practical	4108	2131	51.87	1977	48.13
Simulation	4282	2365	55.23	1917	44.77

Candidates taking the test for the first time are required to take all three parts on the same test date. They meet eligibility requirements as curriculum or internship candidates, so the analysis of their performance (Table III.) is shown for all first-time candidates and according to their route to eligibility. Likewise, Table IV displays the performance of candidates to retake at least one part

of the test in the testing year, 1998, regardless of the year in which they sat as first-time candidates.

Table III. Candidates Taking the Examination for the First Time

	Total Sitting	Total Pass/%	Total Fail/%	Total Intern	#Intern Pass/%	#Intern Fail/%	Total Curr.	# Curr. Pass/%	# Curr. Fail/%
Written	2577	1441 55.92	1136 44.08	1565	768 49.07	797 50.93	1012	673 66.50	339 33.50
Practical	2575	1434 55.69	1141 44.31	1563	737 47.15	826 52.85	1012	697 68.87	315 31.13
Simulation	2577	1437 55.76	1140 44.24	1565	805 51.44	760 48.56	1012	632 62.45	380 37.55

Table IV. Candidates Retaking the Examination

	Total Sitting	Total Pass/%	Total Fail/%	Total Intern	#Intern Pass/%	#Intern Fail/%	Total Curr.	# Curr. Pass/%	# Curr. Fail/%
Written	2214	782 35.32	1432 64.68	1605	534 33.27	1071 66.73	609	248 40.72	361 59.28
Practical	1533	697 45.47	836 54.53	1158	494 42.66	664 57.34	375	203 54.13	172 45.87
Simulation	1705	928 54.43	777 45.57	1184	605 51.10	579 48.90	521	323 62.00	198 38.00

Descriptive Statistics of Candidate Performance

Scores on the written multiple-choice portion of the examination are scaled from 0 to 150, with the criterion-referenced cut score established at 106. Scores on the practical are scaled from 0 to 50, with the criterion-referenced score required to pass established at 35. Scores on the written simulation range from 200 to 800, with the criterion-referenced cut score set at 500. Table V provides descriptive statistics on candidate performance for each part of the test.

Table V. Candidate Score Distributions

	Written 265		Written 266	
High Score	133		139	
Low Score	57		42	
Avg. Score	Overall	104.81	Overall	103.37
	Internship	103.48	Internship	101.84
	Curriculum	107.42	Curriculum	106.34
Std. Dev.	10.99		11.11	

Written By Domain	Domain I n items = 31		Domain II n items = 59		Domain III n items = 42		Domain IV n items = 9		Domain V n items = 9	
	265	266	265	266	265	266	265	266	265	266
High Score	30	29	58	57	40	38	9	9	9	9
Low Score	10	7	21	9	10	10	2	1	2	1
Avg. Score	21.78	21.16	43.21	43.27	26.44	25.41	6.64	5.61	6.91	5.86
Std. Dev.	2.76	3.05	5.44	5.34	4.16	4.18	1.35	1.42	1.26	1.35

Practical	267	268	269a	269b	270					
High Score	48	48	48	46	47					
Low Score	10	11	9	6	10					
Avg. Score	Overall	34.67	Overall	34.27	Overall	31.75	Overall	32.15	Overall	33.93
	Internship	32.75	Internship	33.29	Internship	30.96	Internship	31.74	Internship	33.67
	Curriculum	36.51	Curriculum	36.01	Curriculum	33.82	Curriculum	33.53	Curriculum	34.68
Std. Dev.	6.36	6.53	7.21	6.79	6.91					

Simulation	Simulation 271		Simulation 272	
High Score	768		752	
Low Score	200		200	
Avg. Score	Overall	500.91	Overall	500.92
	Internship	489.86	Internship	493.70
	Curriculum	518.1	Curriculum	515.74
Std. Dev.	98.69		98.57	

Conclusion

NATABOC works hard to ensure that the certification examination and all aspects of its development and administration are fair and of high quality. The organization adheres to pertinent standards governing certification tests and implements an examination program that continues to be a valid and reliable measure of entry-level competence in the professional practice of athletic training.