



Exam Report for 2020-2021 Exam Year
Board of Certification (BOC) Certification Exam for Athletic Trainers
May 2021

Introduction

The Board of Certification, Inc., (BOC) is a non-profit credentialing agency that provides certification for the athletic training profession. Although it had already operated for twenty years, the BOC was incorporated in 1989 to govern the certification program, including the exam, for entry-level certification and recertification standards for Athletic Trainers. The entry-level certification program is designed to establish a common benchmark for entry into the athletic training profession. The BOC serves the public interest by developing, administering and continually reviewing a certification process that reflects current standards of practice in athletic training.

Standard Setting and Equating of Exam Forms

The modified Angoff process was used to establish the performance standard for the exam forms based on the Practice Analysis, 7th Edition (PA7). In April 2017, a panel of 12 Certified Athletic Trainers reviewed the scored items for forms PA701 and PA702. A few minor changes were made to the scored set of items on form PA702. When the forms were introduced in May 2017, the cut score for form PA702 was equated to the standard set on form PA701. All new forms assembled under PA7, including PA707 and PA708, have been equated using item response theory (IRT) methods to the passing standard established for PA701 after the first exam window in which they are used.

Score Reporting

Because exam forms are possibly of different difficulty, providing raw scores can be misleading. As a result, many programs, including the BOC exam, use scaled scores. Scaled scores are particularly useful because they provide the basis for meaningful long-term comparisons of results across different forms of an exam.

Scaled scores are used because over the life of every testing program, situations arise in which changes in test length occur, a decision is made to assess more or fewer areas, the numbers of items that are scored versus unscored (experimental) changes, or forms of the test representing different difficulty are compared. For scaled scores, the passing standard (number of items answered correctly) on the BOC exam form is always reported as the same scaled score. The equated scores are then converted via linear transformation to a scale of 200 to 800 with the passing standard reported as 500. The BOC provides scaled scores and pass/fail decisions to candidates approximately two to four weeks after close of an exam window. Candidates pass or fail based on how their exam performance compares to the equated, criterion-referenced passing standard for the form taken.

Analysis of the Certification Exam

Candidate Performance

Candidates in 2020 did not perform at the usual level on the exam. It should be noted that the 2020 testing year coincided with the COVID-19 pandemic, which caused the BOC to cancel the first exam window, normally completed in April each year. It is thought that the pandemic influenced candidate performance because all colleges and universities in the US cancelled in-person instruction, including practical training, and the transition to online instruction was slow and imperfect, meaning that subject matter may not have been taught as effectively as usual.

Candidates Excluded from This Report

Beginning with 2018, candidates who were administered the BOC certification exam via paper and pencil (i.e., ADA candidates) have been included in the information provided in Table 1. They were not included when the statistics were computed for other years reported in Table 1. These individuals (n = 9) were excluded from the analyses in the rest of the report. Also, candidates who completed less than 25% of their exam were excluded from statistical reports because of the likelihood that their performance was affected by construct irrelevant variance, such as being late to the site, limited English proficiency or other issues.

There are 4,953 administrations of the BOC certification exam included in this report, which represents a 10.6% decrease from the 2019-2020 testing year (5,539). The number of first-time exams decreased from 3,913 in 2019-2020 to 3,035 in 2020-2021, which represents a 28.9% decrease. Retake exams increased from 1,626 in 2019-2020 to 1,917 in 2020-2021, a 17.9% increase.

Pass Rates

Table 1. Historical BOC Exam Counts and Pass Rates

Year	First-time	Pass	% Pass	Retake	Pass	% Pass	All	Pass	% Pass
RD/PA6									
2011-2012	3,222	2,653	82.3%	1,664	696	41.8%	4,886	3,269	66.9%
2012-2013	3,631	2,935	80.8%	1,319	507	38.4%	4,950	3,442	69.5%
2013-2014	3,679	3,048	82.8%	1,210	497	41.1%	4,889	3,545	72.5%
2014-2015	3,768	3,039	80.7%	1,283	466	36.3%	5,051	3,505	69.4%
2015-2016	4,059	3,357	82.7%	1,308	547	41.8%	5,367	3,904	72.7%
2016-2017	4,119	3,444	83.6%	1,204	465	38.6%	5,323	3,909	73.4%
2017-2018	2,406	2,149	89.3%	185	85	45.9%	2,591	2,234	86.2%
PA7									
2017-2018	1,606	1,091	67.9%	1,172	334	28.5%	2,780	1,426	51.3%
2018-2019*	3,974	3,091	77.8%	1,622	645	39.8%	5,596	3,736	66.8%
2019-2020*	3,913	3,038	77.6%	1,626	636	39.1%	5,539	3,674	66.3%
2020-2021*	3,035	1,871	61.6%	1,916	576	30.0%	4,951	2,447	49.4%

*Note. Total numbers include ADA and paper and pencil administrations.

Table 2. Historical BOC Exam Scaled Score Summary Statistics

Cohort	N	Mean	Median	Std Dev	Min	Max
All 2020-21	4,953	498.1	495	87.7	200	750
First-time	3,035	521.5	520	88.2	200	750
Retake	1,911	461.0	470	72.8	200	690
All 2019-20	5,528	540.2	532	66.1	358	735
First-time	3,912	558.8	558	65.2	382	735
Retake	1,616	495.2	489	42.3	358	683
All 2018-19	5,591	539.0	532	66.3	340	729
First-time	3,970	557.6	555	64.8	352	729
Retake	1,621	493.4	488	44.0	340	642
All 2017-18	5,369	536.9	538	71.3	275	743
First-time	4,012	557.8	560	65.1	304	743
Retake	1,357	475.0	478	49.9	275	665
All 2016-17	5,323	551.3	554	72.2	265	751
First-time	4,119	569.6	577	67.2	315	751
Retake	1,204	488.8	489	50.7	265	678
All 2015-16	5,367	543.5	544	67.5	217	729
First-time	4,059	561.2	564	62.8	356	729
Retake	1,308	488.6	489	49.9	217	661
All 2014-15	5,051	543.3	542	71.4	259	733
First-time	3,768	563.0	567	67.1	272	733
Retake	1,283	485.5	484	48.7	259	650
All 2013-14	4,889	529.7	536	57.1	272	680
First-time	3,679	545.1	548	51.9	332	680
Retake	1,210	482.8	488	45.5	272	650
All 2012-13	4,950	524.0	524	54.0	302	674
First-time	3,631	539.0	548	51.0	302	674
Retake	1,319	484.0	488	41.0	314	632
All 2011-12	4,886	525.0	524	54.0	230	692
First-time	3,222	542.0	548	51.0	272	692
Retake	1,664	491.0	494	44.0	230	644

Exam Form Reliabilities and Other Summary Data

Data presented in Table 2 summarize the performance of the forms of the BOC certification exam used during the year. Reliability is assessed using Cronbach's alpha (Cronbach, 1951), a measure typically used for estimating overall exam form reliability; Brennan-Kane (Brennan & Kane, 1977), a measure used for estimating the decision consistency (i.e., the reliability of pass/fail decisions based on the test); and the standard error of measurement (SEM) presented in raw score units, a measure of the precision of the exam form.

Summary

Statistics concerning the quality of the BOC certification exam as a measurement instrument indicate that the exam complies with psychometric requirements that pertain to certification and licensure tests. Notably, estimates of reliability and equivalence across forms for the various parts of the exam are acceptable. Likewise, candidate performance on all parts of the exam is consistent with the public protection mission of the BOC.

References

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