



5TH NCCCO FOUNDATION Industry Forum

Are CBT Tests Really More Difficult? *Explaining Score Differences between Paper-Pencil and Computer-Based Exams*

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Score Differences

- On average, those taking computer-based tests score 4 points lower than those taking paper-pencil tests.
- On average, those taking computer-based tests have a pass rate 7% lower than those taking paper pencil tests.

ANSI/ANAB Accreditation Issue

- ISO/IEC 17024 standard
 - **9.3.2** The certification body shall have procedures to ensure a consistent examination administration
- ANSI issues a Non-Conformity, concerned that exam administration might not be consistent, and computer-based testing might not be fair to the candidates
 - ANSI Citation: “Research into the differences between the paper and CBT scores and passing rates has been promised. The differences are substantial and need to be explained and/or corrected.”
- We needed to investigate the reasons behind the performance differences.

Hypothesis

We reasoned that those taking computer-based assessments might have received less training, or training further back in time, than those taking paper-pencil tests.

We used an optional demographic survey, administered at paper-pencil testing and at computer-based test sites, to test the hypothesis.

10 Question Survey

1. What is your current primary job position?
2. If you are an operator, how long have you been a lifting equipment operator?
3. In what industry did you gain the majority of your experience?
4. What is the main reason you are seeking certification or recertification?
5. At what age did you first enter the industry?

10 Question Survey

6. What is your highest education level?
7. What was the main type of test preparation you received to prepare for this test?
8. How much test preparation in the classroom did you receive?
9. How much test preparation in the field (hands-on) did you receive?
10. How long before taking this exam did you receive your test preparation?

Data Limitations

- These are only preliminary analyses.
- Some of the analyses shown include only results from paper-pencil examinees, others have data from both computer-based and paper-pencil examinees.
- At the time of the data extraction, test score data was linked to the paper-pencil examinees, but not to the computer-based examinees.

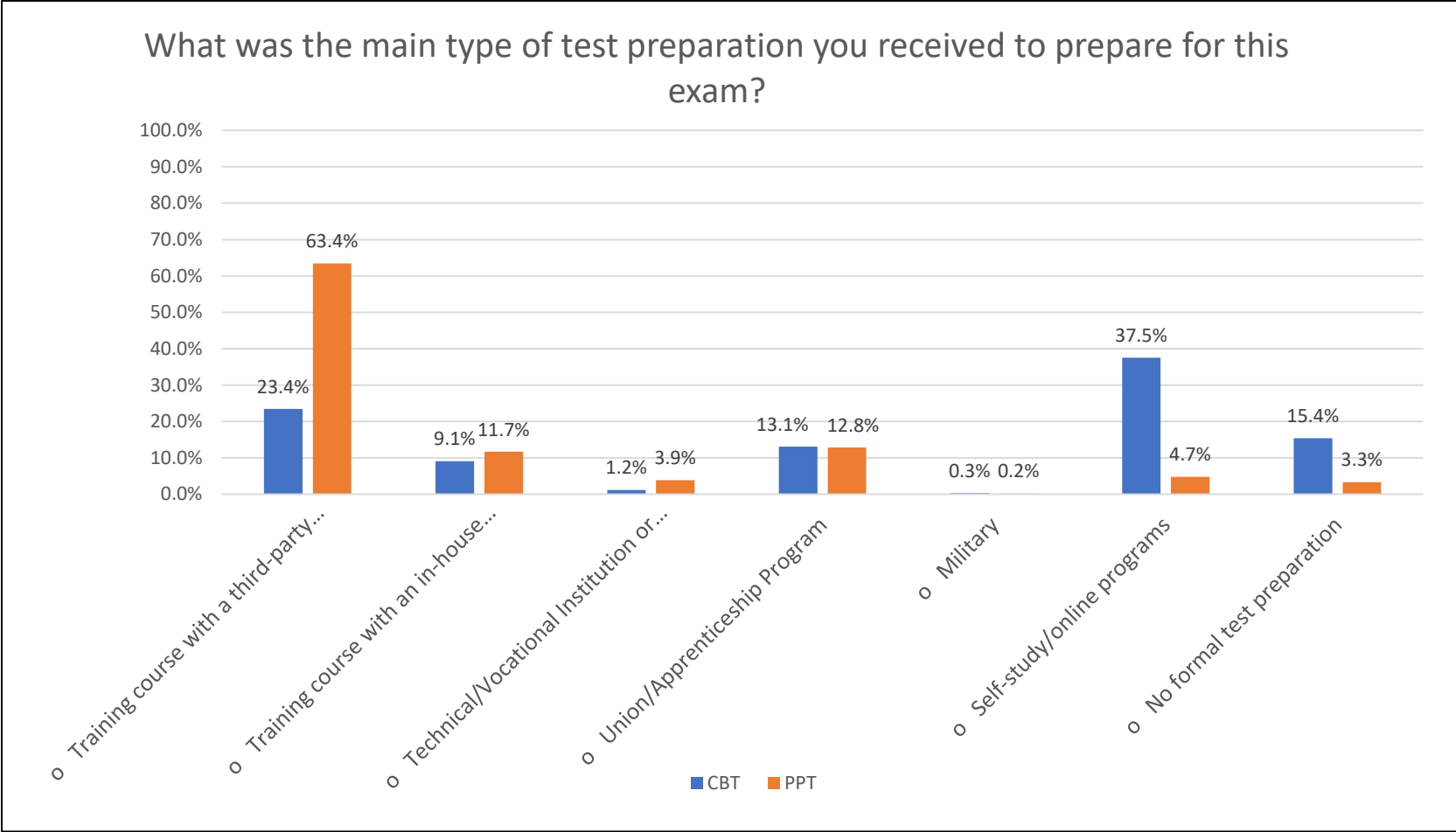
Type of Test Prep Received

What is the main type of test prep you received?	Training course / third party trainer	Training course / in house employer	Vocational instruction or Community College	Union/Apprenticeship Program	Military	Self-study/online program	no formal test preparation	
								Total
Average Test Scores	83	79	80	82	76	79	77	Avg 82
Percent Responding	64%	12%	4%	13%	0%	4%	3%	N=8860

Type of Test Prep Received

What is the main type of test prep you received?	Training course / third party trainer	Training course / in house employer	Vocational instruction or Community College	Union/Apprenticeship Program	Military	Self-study/online program	no formal test preparation		
									Total
Computer Based Testing	23%	9%	1%	13%	0%	28%	15%		11116
Paper Pencil Testing	63%	12%	4%	13%	0%	5%	3%		8396
Grand Total	41%	10%	2%	13%	0%	23%	10%		19512

Type of Test Prep Received

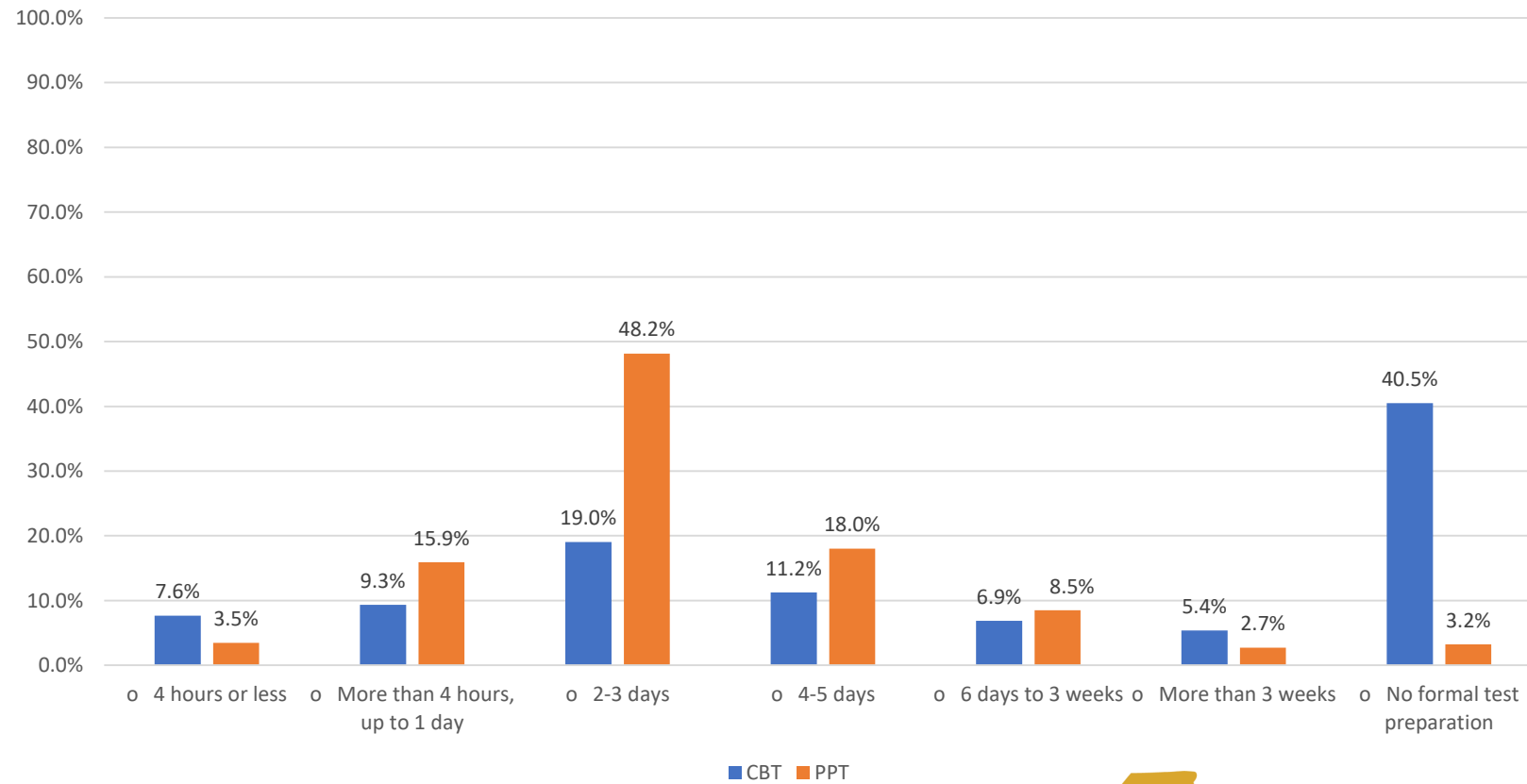


How Much Test Prep?

How much test preparation in the classroom did you receive?	4 hours or less	more than 4 hrs, up to 1 day	2-3 days	4-5 days	6 days to 3 weeks	More than 3 weeks	No formal test preparation		
Computer Based Testing	8%	9%	19%	11%	7%	5%	41%		11110
Paper Pencil Testing	4%	16%	48%	18%	9%	3%	3%		8474
Grand Total	6%	12%	32%	14%	8%	4%	24%		19584

How Much Test Prep?

How much test preparation in the classroom have you received?

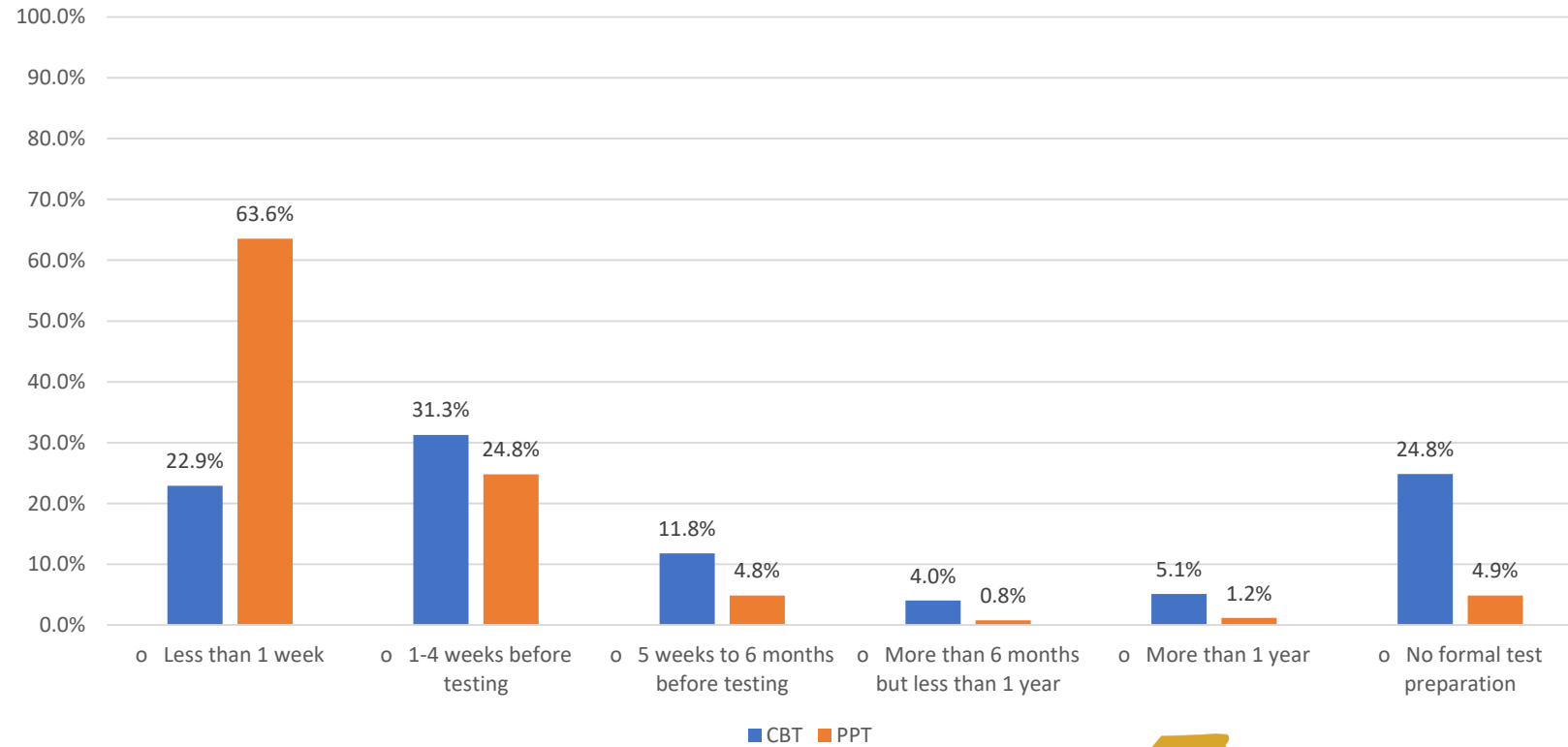


How Long Since Test Prep?

How long before taking this exam did you receive your test preparation	Less than 1 week	1-4 weeks before testing	5 weeks to 6 months before testing	More than 6 months but less than one year	More than 1 year	No formal test preparation	
							Grand Total
Computer Based Testing	23%	31%	12%	4%	5%	25%	11077
Paper Pencil Testing	64%	25%	5%	1%	1%	5%	8501
Grand Total	41%	29%	9%	3%	3%	16%	19578

How Long Since Test Prep?

How long before taking this exam did you receive your test preparation?



Final Decision

Evidence was provided that the difference in scores between CBT and PPT examinations could be due to the differences in test preparation among the candidates.

Therefore, CBT testing does not provide an unfair disadvantage to candidates.

Non-conformity was closed.



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THANK YOU FOR YOUR ATTENTION

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