

Colorado Student Assessment Program

Technical Report 2002

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Table 1. Scale Scores and Associated Standard Errors, Grade 3 Spanish Reading

Scale Score	Standard Error	Scale Score	Standard Error
300	134	504	14
344	89	508	14
374	59	512	14
393	42	516	14
406	33	520	14
416	28	525	15
425	24	529	15
432	22	534	15
438	20	539	15
444	18	544	15
449	17	549	16
454	16	555	16
458	15	561	16
462	15	567	17
466	14	574	17
470	14	581	18
474	14	589	19
478	14	599	21
481	14	610	24
485	14	625	28
489	14	646	35
493	14	682	49
496	14	740	88
500	14		

Table 2. Scale Scores and Associated Standard Errors, Grade 3 Writing

Scale Score	Standard Error	Scale Score	Standard Error
150	171	397	13
208	114	401	13
249	73	405	13
271	50	410	14
286	38	414	14
298	31	419	14
307	26	424	14
315	23	429	15
322	21	434	15
328	19	439	15
334	18	445	16
339	17	451	16
344	16	458	16
348	15	465	16
353	15	472	16
357	14	479	17
361	14	488	17
365	14	497	18
369	14	507	20
373	13	521	23
377	13	539	29
381	13	564	36
385	13	604	49
389	13	680	100
393	13		

Table 3. Scale Scores and Associated Standard Errors, Grade 4 Reading

Scale Score	Standard Error	Scale Score	Standard Error
180	250	543	14
266	164	546	14
320	110	549	14
349	81	552	14
368	62	556	14
384	50	559	15
396	42	562	15
406	37	565	15
415	33	569	15
422	30	572	15
429	27	576	15
436	25	579	15
441	23	583	15
447	22	587	16
452	21	591	16
456	20	595	16
460	19	599	16
465	18	603	17
468	17	607	17
472	17	612	17
476	16	616	18
479	16	621	18
482	16	626	18
486	15	631	19
489	15	637	20
492	15	643	20
495	15	649	21
498	14	656	22
501	14	663	23
504	14	671	24
507	14	679	26
510	14	689	27
513	14	700	30
516	14	712	32
519	14	727	36
522	14	745	41
525	14	767	48
528	14	798	59
531	14	844	78
534	14	931	125
537	14	940	131
540	14		

Table 4. Scale Scores and Associated Standard Errors, Grade 4 Spanish Reading

Scale Score	Standard Error	Scale Score	Standard Error
300	145	526	11
327	118	528	11
366	79	531	11
388	57	533	11
402	43	536	11
413	35	538	11
422	29	541	11
430	26	543	11
436	23	546	11
442	21	548	11
447	19	551	11
451	18	554	11
455	17	557	11
459	16	559	11
463	15	562	12
466	15	565	12
469	14	568	12
473	14	572	12
476	13	575	12
478	13	578	13
481	13	582	13
484	12	586	13
487	12	589	13
489	12	594	14
492	12	598	14
494	12	602	15
497	12	607	15
499	11	612	16
502	11	618	17
504	11	624	18
507	11	630	19
509	11	638	22
511	11	648	25
514	11	660	29
516	11	675	35
519	11	696	44
521	11	729	60
523	11	790	99

Table 5. Scale Scores and Associated Standard Errors, Grade 4 Writing

Scale Score	Standard Error	Scale Score	Standard Error
190	147	441	14
233	104	445	13
268	69	449	13
289	49	453	13
303	38	457	13
314	32	461	13
324	28	465	14
332	25	469	14
339	23	474	14
346	22	478	14
352	20	482	14
358	19	487	14
363	18	491	14
368	18	496	14
373	17	501	14
378	17	506	15
382	16	512	15
386	16	517	16
391	15	523	16
395	15	530	17
399	15	537	18
403	15	545	19
407	14	554	20
411	14	564	22
415	14	575	24
418	14	590	28
422	14	609	33
426	14	635	42
430	14	681	62
434	14	730	93
438	14		

Table 6. Scale Scores and Associated Standard Errors, Grade 4 Spanish Writing

Scale Score	Standard Error	Scale Score	Standard Error
300	121	524	14
329	92	528	13
358	63	532	13
376	45	536	13
388	36	540	13
399	30	543	13
407	27	547	13
415	24	551	13
421	22	555	13
427	21	559	13
433	20	564	13
439	19	568	13
444	19	572	14
449	18	577	14
454	18	581	14
458	17	586	14
463	17	592	15
467	17	597	15
472	16	603	16
476	16	609	17
480	16	616	18
485	16	624	19
489	15	633	20
493	15	643	22
497	15	655	25
501	15	669	28
505	14	687	32
509	14	712	39
513	14	755	61
517	14	790	86
520	14		

Table 7. Scale Scores and Associated Standard Errors, Grade 5 Reading

Scale Score	Standard Error	Scale Score	Standard Error
220	242	580	14
325	137	583	14
367	96	586	14
391	71	589	14
408	54	593	14
421	44	596	14
432	38	599	14
441	33	602	14
449	30	605	15
456	27	609	15
463	25	612	15
468	23	616	15
474	22	619	15
479	21	623	15
484	20	627	16
488	19	630	16
493	19	634	16
497	18	638	16
501	18	642	16
505	17	647	17
509	17	651	17
513	17	655	17
516	16	660	18
520	16	665	18
523	16	670	18
527	16	676	19
530	15	681	19
533	15	687	20
537	15	694	21
540	15	701	22
543	15	708	23
546	14	716	24
549	14	725	25
553	14	735	27
556	14	747	29
559	14	760	32
562	14	777	37
565	14	799	45
568	14	832	59
571	14	893	90
574	14	955	135
577	14		

Table 8. Scale Scores and Associated Standard Errors, Grade 5 Writing

Scale Score	Standard Error	Scale Score	Standard Error
220	119	464	15
249	89	468	15
277	62	472	14
296	47	477	14
310	38	481	15
322	33	485	15
332	29	490	15
341	26	494	15
349	24	499	15
356	23	503	15
362	22	508	15
369	21	513	15
374	20	518	16
380	19	523	16
385	18	529	16
390	18	534	17
395	18	540	17
400	17	547	18
405	17	553	18
409	16	561	19
414	16	568	20
418	16	576	21
423	16	586	22
427	15	596	23
431	15	607	25
435	15	620	27
439	15	635	30
444	15	655	35
448	15	682	44
452	15	729	67
456	15	780	106
460	15		

Table 9. Scale Scores and Associated Standard Errors, Grade 5 Mathematics

Scale Score	Standard Error	Scale Score	Standard Error
220	107	464	14
231	96	467	14
255	72	470	14
274	58	473	14
289	49	476	14
301	42	479	14
312	38	482	14
321	34	485	14
329	31	488	14
337	29	491	14
344	27	494	14
350	26	497	15
356	24	500	15
362	23	503	15
367	22	507	15
372	21	510	15
376	21	513	15
381	20	517	15
385	19	520	15
389	19	524	16
393	18	527	16
397	18	531	16
401	17	535	16
404	17	539	17
408	17	543	17
411	16	548	18
415	16	553	18
418	16	558	19
421	16	563	19
425	16	569	20
428	15	575	21
431	15	582	22
434	15	589	23
437	15	597	24
440	15	607	26
443	15	617	29
446	15	630	32
449	15	646	36
452	14	667	42
455	14	697	53
458	14	750	77
461	14	800	109

Table 10. Scale Scores and Associated Standard Errors, Grade 6 Reading

Scale Score	Standard Error	Scale Score	Standard Error
260	231	603	13
338	154	605	13
387	104	608	13
414	77	611	13
433	58	614	13
447	47	616	13
459	40	619	13
468	35	622	13
476	31	625	13
484	28	628	13
490	26	631	14
496	24	634	14
502	23	637	14
507	21	641	14
511	20	644	14
516	19	647	15
520	19	651	15
524	18	655	15
528	17	658	15
532	17	662	16
535	16	666	16
538	16	671	16
542	15	675	17
545	15	680	17
548	15	685	17
551	15	690	18
554	14	695	18
557	14	700	19
560	14	706	19
563	14	712	19
566	14	719	20
568	13	726	21
571	13	733	21
574	13	741	22
576	13	750	24
579	13	760	26
582	13	772	28
584	13	786	32
587	13	804	37
590	13	828	45
592	13	863	59
595	13	928	91
597	13	970	119
600	13		

Table 11. Scale Scores and Associated Standard Errors, Grade 6 Writing

Scale Score	Standard Error	Scale Score	Standard Error
230	109	492	16
248	91	497	16
276	68	502	16
297	55	506	16
313	46	511	16
328	40	516	16
340	36	521	16
351	33	526	16
360	30	532	16
369	28	537	17
377	26	543	17
385	24	548	17
392	23	554	17
398	22	560	17
405	21	567	18
410	20	573	18
416	19	580	18
421	19	587	19
427	18	594	19
432	18	602	20
437	17	611	20
442	17	620	21
446	17	630	22
451	17	641	24
456	16	653	25
460	16	667	27
465	16	684	30
469	16	704	34
474	16	731	40
478	16	773	55
483	16	840	97
488	16		

Table 12. Scale Scores and Associated Standard Errors, Grade 6 Mathematics

Scale Score	Standard Error	Scale Score	Standard Error
240	94	497	15
259	78	500	15
281	62	504	15
298	53	508	15
313	46	511	15
326	41	515	15
337	37	518	15
346	34	522	15
355	32	525	15
364	30	529	15
371	28	533	15
378	27	536	15
385	25	540	15
391	24	544	15
397	23	548	16
403	22	552	16
408	22	556	16
413	21	560	16
418	20	564	16
423	20	568	16
428	19	573	17
432	19	577	17
436	18	582	17
441	18	587	18
445	18	592	18
449	17	597	19
453	17	603	20
457	17	610	20
461	17	616	21
464	16	624	23
468	16	632	24
472	16	642	26
476	16	653	29
479	16	667	33
483	16	685	39
486	15	712	50
490	15	759	77
493	15	830	138

Table 13. Scale Scores and Associated Standard Errors, Grade 7 Reading

Scale Score	Standard Error	Scale Score	Standard Error
300	181	596	13
320	161	598	13
374	106	601	13
403	78	604	13
422	59	607	13
436	47	610	13
448	40	612	13
458	35	615	13
466	31	618	14
474	28	621	14
480	26	624	14
486	24	627	14
492	23	630	14
497	22	634	14
502	21	637	14
507	20	640	14
512	19	644	15
516	18	647	15
520	18	651	15
524	17	654	15
528	17	658	15
531	16	662	16
535	16	666	16
538	16	670	16
541	15	675	16
545	15	679	17
548	15	684	17
551	14	689	17
554	14	694	18
557	14	700	18
560	14	706	19
563	14	712	19
566	14	718	20
568	13	725	20
571	13	733	21
574	13	742	23
577	13	752	25
579	13	764	27
582	13	778	30
585	13	796	35
587	13	821	43
590	13	864	63
593	13	980	170

Table 14. Scale Scores and Associated Standard Errors, Grade 7 Writing

Scale Score	Standard Error	Scale Score	Standard Error
240	134	521	19
273	100	527	19
304	70	532	19
325	54	538	19
341	45	544	19
355	39	550	19
366	35	556	19
377	32	563	20
386	30	569	20
395	28	576	20
403	27	582	21
411	25	589	21
418	24	597	21
425	23	604	22
431	22	612	22
437	22	620	23
443	21	629	23
449	20	638	24
455	20	648	25
461	20	658	26
466	19	669	27
472	19	682	29
477	19	696	31
483	19	712	33
488	19	731	37
493	19	755	43
499	19	788	54
504	19	847	83
510	19	890	113
515	19		

Table 15. Scale Scores and Associated Standard Errors, Grade 7 Mathematics

Scale Score	Standard Error	Scale Score	Standard Error
280	113	555	14
306	87	558	13
332	69	561	13
351	57	564	13
368	49	567	13
382	44	570	13
394	39	573	13
405	36	576	13
415	33	579	13
424	31	582	13
432	29	584	13
440	27	587	13
447	26	590	13
454	25	593	13
460	24	596	13
466	23	599	14
472	22	602	14
477	21	606	14
482	20	609	14
487	20	612	14
492	19	616	15
496	18	620	15
501	18	624	16
505	17	628	16
509	17	632	17
513	17	637	18
516	16	642	18
520	16	648	20
524	16	655	21
527	15	662	22
530	15	670	24
534	15	680	27
537	15	692	31
540	14	707	36
543	14	729	44
546	14	761	60
550	14	829	109
553	14	860	139

Table 16. Scale Scores and Associated Standard Errors, Grade 8 Reading

Scale Score	Standard Error	Scale Score	Standard Error
330	180	614	13
351	160	617	13
411	99	621	13
439	71	624	13
458	53	627	14
471	42	630	14
482	35	633	14
491	30	637	14
498	27	640	14
505	24	643	14
511	22	647	14
517	21	650	14
522	19	654	14
527	18	657	14
531	18	661	14
535	17	664	14
539	16	668	14
543	16	672	14
547	15	676	14
550	15	680	15
554	15	684	15
557	15	688	15
561	14	692	15
564	14	697	16
567	14	702	16
571	14	707	16
574	14	712	17
577	14	718	18
580	14	724	18
583	13	731	19
586	13	738	20
589	13	746	21
593	13	756	23
596	13	766	25
599	13	780	28
602	13	797	34
605	13	823	46
608	13	873	74
611	13	990	170

Table 17. Scale Scores and Associated Standard Errors, Grade 8 Writing

Scale Score	Standard Error	Scale Score	Standard Error
250	89	493	18
265	74	498	18
288	55	504	18
305	45	509	18
320	39	514	18
332	35	520	19
343	32	526	19
352	30	532	19
361	28	538	20
370	27	545	20
377	26	551	21
385	24	558	22
392	23	566	22
398	23	574	23
405	22	582	24
411	21	591	24
417	21	600	25
422	20	610	26
428	20	620	27
433	19	631	28
439	19	643	29
444	18	656	30
449	18	669	31
454	18	684	32
459	18	700	34
464	18	717	36
469	18	738	38
474	17	762	43
478	17	795	52
483	17	852	84
488	17	910	134

Table 18. Scale Scores and Associated Standard Errors, Grade 8 Mathematics

Scale Score	Standard Error	Scale Score	Standard Error
310	132	579	12
323	118	581	12
358	84	584	12
382	64	587	12
401	53	589	12
416	45	592	12
429	39	595	12
440	35	598	12
450	31	600	12
458	29	603	12
466	27	606	12
473	25	609	12
480	23	612	13
486	22	615	13
491	21	618	13
497	20	621	13
502	19	625	13
506	18	628	14
511	18	632	14
515	17	636	15
519	16	640	15
523	16	644	16
527	15	649	16
530	15	654	17
534	15	659	18
537	14	665	19
540	14	671	19
544	14	678	20
547	14	685	21
550	13	694	23
553	13	703	24
556	13	714	26
559	13	726	29
562	13	742	34
565	13	763	42
567	13	797	58
570	13	865	101
573	12	890	121
576	12		

Table 19. Scale Scores and Associated Standard Errors, Grade 8 Science

Scale Score	Standard Error	Scale Score	Standard Error
300	67	497	13
302	65	501	13
317	53	504	13
330	46	507	13
341	40	510	13
350	36	513	13
358	33	516	13
366	30	519	13
373	28	523	13
379	27	526	13
385	25	529	14
391	24	533	14
396	23	536	14
401	22	540	14
406	21	543	14
410	20	547	14
414	20	551	14
419	19	554	14
423	18	558	14
427	18	562	15
430	17	567	15
434	17	571	15
438	17	576	16
441	16	580	16
445	16	585	16
448	16	591	17
451	15	596	17
454	15	603	18
458	15	609	19
461	15	616	20
464	15	624	21
467	14	633	22
470	14	643	24
473	14	654	26
476	14	668	29
479	14	684	33
482	14	705	38
485	14	736	48
488	14	787	71
491	14	790	72

Table 20. Scale Scores and Associated Standard Errors, Grade 9 Reading

Scale Score	Standard Error	Scale Score	Standard Error
350	189	641	12
390	148	644	12
439	99	646	12
466	73	649	12
484	55	651	12
498	44	654	12
509	37	657	12
518	32	659	12
526	29	662	12
533	26	665	12
539	24	667	12
545	22	670	12
550	21	673	12
555	20	676	12
560	19	679	13
564	18	682	13
568	17	685	13
572	17	688	13
576	16	691	13
579	16	694	13
583	15	698	14
586	15	702	14
589	14	705	14
592	14	709	15
595	14	713	15
598	14	718	15
601	13	722	16
604	13	727	16
607	13	732	17
610	13	738	18
613	13	744	18
615	13	750	19
618	12	757	20
621	12	766	22
623	12	775	23
626	12	786	26
628	12	799	29
631	12	817	35
633	12	842	44
636	12	887	66
639	12	995	157

Table 21. Scale Scores and Associated Standard Errors, Grade 9 Writing

Scale Score	Standard Error	Scale Score	Standard Error
260	71	515	19
271	64	520	19
291	54	526	20
308	47	532	20
323	42	538	20
336	38	544	20
348	35	550	20
358	33	556	21
368	31	563	21
377	30	570	22
386	28	577	22
394	27	584	22
402	26	592	23
409	25	600	23
416	24	608	24
423	23	617	25
429	23	626	25
436	22	636	26
442	22	646	27
448	21	657	27
454	21	668	28
459	20	680	29
465	20	693	30
471	20	707	31
476	20	722	33
482	19	739	35
487	19	759	38
492	19	783	43
498	19	816	53
503	19	871	77
509	19	930	118

Table 22. Scale Scores and Associated Standard Errors, Grade 9 Mathematics

Scale Score	Standard Error	Scale Score	Standard Error
340	138	612	13
385	93	615	13
412	66	619	13
431	51	622	13
446	42	625	13
458	35	628	13
469	31	631	13
477	28	634	13
485	26	638	13
493	24	641	13
499	22	644	13
505	21	647	13
511	20	650	13
516	19	654	13
522	18	657	13
526	18	661	14
531	17	664	14
536	17	668	14
540	16	671	14
544	16	675	14
548	16	679	15
552	16	683	15
556	15	687	15
560	15	692	16
564	15	696	16
568	15	701	17
571	15	706	17
575	14	712	18
579	14	718	19
582	14	724	20
586	14	732	21
589	14	740	22
592	14	750	25
596	14	762	28
599	13	777	32
602	13	799	41
606	13	836	60
609	13	920	130

Table 23. Scale Scores and Associated Standard Errors, Grade 10 Reading

Scale Score	Standard Error	Scale Score	Standard Error
370	206	666	11
443	133	668	11
486	90	670	11
509	66	673	11
525	50	675	11
537	41	677	11
547	35	680	11
555	30	682	11
563	27	685	11
569	25	688	11
574	23	690	12
580	21	693	12
584	20	696	12
589	19	699	12
593	18	701	12
597	17	704	12
600	16	708	12
604	16	711	13
607	15	714	13
610	15	718	13
613	14	721	13
616	14	725	14
619	14	729	14
622	13	733	15
625	13	737	15
627	13	742	16
630	13	747	16
632	12	753	17
635	12	759	18
637	12	765	19
640	12	772	20
642	12	780	21
645	12	789	23
647	12	800	25
649	11	812	28
652	11	827	31
654	11	846	36
656	11	873	45
659	11	918	64
661	11	999	120
663	11		

Table 24. Scale Scores and Associated Standard Errors, Grade 10 Writing

Scale Score	Standard Error	Scale Score	Standard Error
270	83	526	20
293	67	532	20
314	56	538	20
331	49	544	20
346	43	550	21
359	39	556	21
370	36	563	21
381	34	569	22
390	32	576	22
399	30	583	22
407	28	590	23
415	27	598	23
422	26	606	24
429	25	614	24
436	24	622	25
443	23	631	25
449	23	641	26
455	22	651	27
461	21	661	28
466	21	673	29
472	21	685	30
477	20	698	32
483	20	712	33
488	20	729	36
494	20	747	39
499	20	769	43
504	20	797	49
510	20	834	60
515	20	897	88
521	20	950	123

Table 25. Scale Scores and Associated Standard Errors, Grade 10 Mathematics

Scale Score	Standard Error	Scale Score	Standard Error
370	147	637	12
414	102	639	12
444	72	642	12
464	53	645	12
479	43	648	12
491	36	651	12
501	32	653	12
510	28	656	12
518	26	659	12
525	24	662	12
531	22	665	12
538	21	668	12
543	20	671	12
548	19	674	12
553	18	677	13
558	18	680	13
563	17	683	13
567	17	687	13
571	16	690	13
576	16	694	13
579	15	697	14
583	15	701	14
587	15	705	14
591	14	709	15
594	14	714	15
598	14	719	16
601	14	724	17
604	13	729	17
607	13	735	18
610	13	742	20
614	13	750	21
617	13	759	24
620	13	770	27
622	12	785	32
625	12	805	40
628	12	838	57
631	12	915	124
634	12	950	168

**Table 1. Item Parameter and Fit Summary, Multiple-Choice Items,
Grade 4 Writing (N=3542)**

Item	A	b	c	Fit-Z	Item	a	b	c	Fit-Z
59	.80	-2.29	.20	-.6	80	1.19	-1.32	.20	.2
60	.69	-2.53	.20	1.4	81	.89	-.23	.18	2.0
61	.58	-2.03	.20	2.1	82	.67	-1.89	.20	1.2
62	.73	-2.44	.20	-1.1	83	1.34	-.35	.25	1.1
63	.84	-2.11	.20	3.6	84	1.03	.08	.27	-.7
64	.90	-2.69	.20	.3	85	.76	-.60	.19	-.3
65	1.03	.34	.12	1.1	86	.77	-.07	.15	4.6
66	.61	-.90	.19	2.6	87	.88	1.03	.22	.6
67	.87	-1.40	.17	.9	88	1.18	-1.29	.19	.8
68	.65	-.80	.20	-.6	89	.85	.08	.20	.3
69	.48	-1.71	.20	2.1	90	.87	-1.14	.20	.6
70	.60	-2.46	.20	1.5	91	.84	-1.99	.20	1.2
71	.66	-1.01	.00	.1	92	.82	-.84	.14	.5
72	1.22	.05	.31	-.2	93	1.09	-2.00	.20	-.4
73	.92	.33	.26	1.0	94	.89	-1.22	.15	1.9
74	.69	-.12	.19	-.4	95	.94	-1.85	.20	3.7
75	.88	-1.22	.19	.9	96	.66	-.74	.33	.2
76	.80	-.32	.17	.7	97	.79	-1.30	.20	-.3
78	.57	-1.29	.20	2.6	98	.56	-2.64	.20	.1
79	.68	.13	.21	.7	99	.58	-2.15	.20	1.1

**Table 2. Item Parameter and Fit Summary, Constructed-
Response Items Grade 4 Writing (N=3542)**

Item	Part	f	g1	g2	g3	g4	Fit-Z
1		.60	-5.53				-1.7
2	A	1.03	-1.73				.7
2	B	1.29	-2.51				.3
2	C	.93	-.90				2.9
2	D	.62	.02				.4
2	E	.30	-1.32				-1.2
2	F	1.20	-1.44				-.2
3	A	1.30	-2.79	-3.04	-.41	1.24	39.8
3	B	1.57	-5.49	-3.17	-.37	1.58	-1.2
3	C	1.72	-5.74	-1.62			-1.7
27		.88	-2.56	-2.37	.33	2.09	2.1
77		.82	-1.85	-1.93	.41	1.96	11.3
100		.77	-1.51	-1.58	.44	1.88	3.2

Table 3. Item Parameter and Fit Summary, Multiple-Choice Items, Grade 4 Spanish Writing (N=1001)

Item	a	b	c	Fit-Z	Item	a	b	c	Fit-Z
50	1.03	-.22	.19	-.3	71	1.12	1.22	.29	.9
51	.28	-1.12	.20	1.0	72	.86	.85	.17	.3
52	.84	.16	.00	1.7	73	.66	.14	.18	-.3
53	.87	-.15	.20	-.8	74	.65	1.50	.20	-.1
54	.84	.65	.16	.1	75	.81	1.53	.21	.1
55	.75	-1.32	.20	-1.0	76	1.12	1.51	.19	-1.1
56	.74	-1.05	.20	-1.0	77	.99	1.64	.20	-.8
57	.81	-1.45	.20	-.3	78	1.00	4.11	.25	2.8
58	.71	-1.71	.20	.3	79	.43	-.98	.20	.9
59	.79	-2.52	.20	.5	80	.62	-.54	.20	.4
60	.71	-.21	.20	-1.0	81	.44	2.97	.19	-.7
61	.96	.59	.19	.2	82	.23	1.18	.20	1.9
62	.79	-.77	.20	.0	83	.69	-.21	.20	.0
63	.63	-.01	.20	.1	84	.37	1.64	.20	.6
64	.92	.55	.19	4.5	85	.88	1.13	.21	-1.0
65	.76	-.43	.20	-1.0	86	.68	.92	.21	2.2
66	.67	.73	.21	-.6	87	.26	2.13	.20	2.9
68	.96	.12	.22	1.0	88	.59	1.13	.18	-1.1
69	.47	.29	.20	-.7	89	.74	1.23	.24	.3
70	.73	.09	.24	.1	90	.87	.67	.24	-1.4

Table 4. Item Parameter and Fit Summary, Constructed-Response Items, Grade 4 Spanish Writing (N=1001)

Item Part	f	g1	g2	g3	g4	Fit-Z
1	.59	-3.51				-.8
2 A	1.40	-2.79				-.9
2 B	1.11	-.58				-.2
2 C	.85	-1.11				-.1
2 D	.54	-.75				-.1
2 E	1.21	-.81				.2
2 F	1.25	.74				-.5
3 A	.74	-.65	-1.76	-.50	1.93	2.9
3 B	1.24	-3.56	-2.39	.09	3.00	-1.0
3 C	1.83	-4.34	4.30			.2
49	.72	-.73	-.87	.52	2.62	1.6
67	.99	-1.70	-2.18	.29	1.87	1.2
91	.55	-.45	-1.76	.54	1.59	6.1

**Table 5. Item Parameter and Fit Summary, Multiple-Choice Items,
Grade 5 Reading (N=3723)**

Item	a	b	c	Fit-Z	Item	a	b	c	Fit-Z
4	1.04	-.34	.31	1.4	44	.95	-.69	.22	1.6
5	.63	-.31	.35	3.3	45	1.13	-1.31	.19	-1.0
6	.60	.10	.17	1.2	46	1.02	1.79	.12	9.1
8	1.15	.20	.28	-.4	90	.61	-1.54	.20	.5
9	.91	-.35	.17	-.9	91	1.29	-1.61	.19	2.8
10	.86	-.20	.21	2.0	92	.72	-1.75	.20	5.0
12	.91	-1.48	.20	1.6	93	.61	-1.25	.20	8.6
13	1.76	1.19	.20	22.4	94	1.10	-.39	.31	-.1
14	.44	-1.41	.00	2.5	95	.39	-.37	.20	1.3
15	.90	-.98	.22	-.4	96	.53	-.10	.20	1.0
18	.78	-1.58	.20	.0	97	1.06	-1.50	.20	.9
20	.82	1.09	.26	.4	99	1.11	-1.30	.16	.7
21	.85	-.06	.31	1.2	100	.50	.77	.19	.6
22	.77	-1.95	.20	-.7	102	1.61	-.89	.16	-.6
23	.40	-1.21	.20	3.2	103	.42	1.19	.48	1.4
26	.93	-1.68	.20	1.4	104	1.03	.04	.19	4.8
27	.66	.58	.24	-.6	105	.89	.53	.21	1.0
28	1.10	.52	.16	2.2	106	.52	-.07	.15	2.0
29	1.10	-1.67	.20	-.4	107	.51	.04	.20	-.8
31	.87	-1.36	.20	1.2	109	1.01	-.23	.16	-.3
32	1.18	-.57	.31	-.5	110	.85	-.37	.12	.3
33	.89	-1.09	.20	-.5	111	.72	1.60	.21	3.5
34	1.52	-2.17	.20	-1.0	112	1.09	-1.20	.16	.3
35	1.36	-2.15	.20	-.3	113	1.00	-1.80	.20	.2
36	.90	-1.88	.20	-.1	114	1.06	-2.34	.20	1.9
37	1.06	-.55	.22	2.6	117	1.15	-.65	.31	-.2
38	1.22	-.68	.19	-.6	118	1.05	.25	.28	-.1
41	.97	-1.37	.15	1.8	119	.87	.08	.10	1.8
42	1.12	-.92	.22	2.3	120	.92	-1.62	.18	.4
43	1.01	-.68	.19	-.3	121	1.64	2.09	.43	-.6

**Table 6. Item Parameter and Fit Summary,
Constructed-Response Items, Grade 5 Reading
(N=3723)**

Item	f	g1	g2	g3	g4	Fit-Z
7	.87	-.61	.35	.90		.1
11	.68	-.73	-.27	.57		2.8
16	.74	-.90	1.51			5.7
17	.89	-1.68	-1.16	-.19		.3
24	.39	-.19	.01			.4
25	.57	.31	-1.02			5.0
30	1.04	-2.08	-2.52	.76		3.0
39	.77	-.21	.04			2.6
40	.82	-.22	.31	.41		.0
98	.46	.06	.22			2.1
101	.60	-1.05	-.75	-.07		7.2
108	.72	1.04	-1.12	.48		.2
115	1.23	-.75	-.53			-.3
116	1.44	-1.41	.54			6.2

Table 7. Item Parameter and Fit Summary, Multiple-Choice Items, Grade 5 Writing (N=3726)

Item	a	b	c	Fit-Z	Item	a	b	c	Fit-Z
47	.88	-.25	.25	1.9	69	.79	-.14	.15	.3
48	.78	-1.23	.20	.0	70	.81	-.13	.15	1.5
49	.67	-1.75	.20	1.0	71	.91	-.74	.12	2.7
50	.57	1.23	.13	1.7	72	.72	-1.04	.13	1.7
51	1.41	-2.65	.20	-.4	73	1.30	-1.52	.13	-.2
52	.61	-2.59	.20	.3	74	.71	-1.01	.20	5.5
53	.35	.18	.20	-1.4	75	.65	-.19	.22	-.8
54	.59	-.58	.20	-1.0	76	.93	-1.11	.13	-.4
55	1.31	-.03	.18	1.9	77	.85	-.53	.19	-.7
56	.59	-1.17	.20	3.5	78	1.07	-.29	.21	-.8
58	.70	-1.03	.20	2.1	79	.42	-.47	.00	1.1
59	.62	-1.93	.20	-.6	80	.69	.93	.27	1.4
60	.75	-2.15	.20	.3	81	.80	-.44	.18	1.6
61	.94	1.02	.22	.2	82	.91	-.14	.24	-1.0
62	.43	-.85	.00	2.4	83	.90	-.56	.17	-.8
63	.60	-1.76	.20	7.2	84	.59	-.98	.00	.9
64	1.16	-1.21	.14	1.0	85	.80	-1.41	.20	1.3
65	1.03	-1.48	.20	6.5	86	.77	-1.49	.20	.3
66	.84	-.83	.13	1.2	87	.63	1.11	.17	.8
67	1.29	-.26	.23	1.6	88	.70	-1.26	.20	2.3
68	.90	-.04	.23	-.9					

Table 8. Item Parameter and Fit Summary, Constructed-Response Items, Grade 5 Writing (N=3726)

Item	Part	f	g1	g2	g3	g4	Fit-Z
1		1.31	-6.23				-1.7
2	A	.92	.42				.0
2	B	.63	-1.74				-.3
2	C	1.49	-2.50				1.9
2	D	1.09	-.67				1.7
2	E	.40	.74				1.0
2	F	1.28	2.69				.0
3	A	1.26	-2.77	-2.81	-.21	1.52	41.7
3	B	1.59	-5.20	-2.87	-.20	1.77	1.4
3	C	1.80	-5.43	-1.87			2.1
19		1.08	-2.38	-2.28	.06	2.01	5.9
57		.99	-2.32	-1.78	.23	2.08	10.8
89		1.05	-2.16	-1.47	.49	1.97	65.2

**Table 9. Item Parameter and Fit Summary, Multiple-Choice Items,
Grade 5 Mathematics (N=2671)**

Item	a	b	c	Fit-Z	Item	a	b	c	Fit-Z
1	.88	-1.03	.18	.9	34	.86	-.44	.17	-.4
2	.78	-2.23	.20	-1.3	35	.61	-1.10	.15	-1.3
3	.75	-.06	.16	.6	36	.51	-2.11	.20	3.9
4	.65	-.70	.20	3.0	38	.57	-1.93	.20	-.3
5	.77	-1.00	.15	-.1	39	.99	-.20	.18	1.7
7	.65	-1.31	.20	.4	40	.47	-.56	.20	3.7
8	.55	-1.03	.20	2.5	41	.86	-1.09	.20	.3
9	.70	-.13	.28	.4	43	.60	-1.48	.20	6.1
10	.64	-.92	.20	1.8	44	.87	.80	.15	-.4
12	.70	-1.16	.20	.7	47	.79	-.74	.46	3.0
13	.93	-.56	.22	1.4	48	.60	-1.09	.20	-1.1
14	.47	.94	.19	-1.0	49	1.23	-.34	.28	-.7
15	.81	-1.60	.20	-.1	50	.91	-.48	.18	-.5
16	1.13	.25	.17	.4	52	.69	-.28	.17	.2
18	.95	-.62	.15	3.4	53	.90	-.20	.27	-.4
19	.82	-.05	.17	.6	54	1.44	-1.47	.17	-.8
21	.46	-3.06	.20	.0	55	.79	.88	.26	2.6
22	.57	-1.47	.20	1.1	56	.46	-.43	.20	1.2
24	1.08	-1.56	.21	-.5	57	1.02	.22	.11	-.7
25	.79	-1.31	.20	.2	59	1.15	-.83	.23	-.1
26	.97	-.33	.39	-.2	60	.92	-.72	.18	.7
27	1.21	-.58	.24	.0	62	.71	.51	.31	-.8
28	.82	-1.27	.20	1.8	63	1.42	-1.22	.33	-.4
30	.82	-1.50	.20	.5	64	1.15	-1.21	.32	-.9
31	.50	-1.26	.15	1.5	65	.91	-.41	.16	-.2
32	.34	-1.44	.20	1.3	67	.75	-1.14	.20	4.2
33	.72	-.98	.20	.2	68	.92	-1.77	.20	-.9

**Table 10. Item Parameter and Fit Summary,
Constructed-Response Items, Grade 5
Mathematics (N=2671)**

Item	f	g1	g2	g3	g4	Fit-Z
6	.96	-1.18	.16			4.6
11	.78	-1.85	-.77	.01		-.1
17	.65	1.55	-1.56			2.2
20	.77	-1.47	-1.01	-.56		.2
23	.70	1.18	-.39	.58	-1.27	1.6
29	.91	.29	-1.76			2.2
37	.84	-1.10	-1.64	.13		2.8
42	.92	-1.00	-1.66			3.4
45	1.11	-3.29	-2.23	.07		6.3
46	.70	-1.11	-1.38	-.63	-1.75	3.0
51	.75	-1.23	-.65			1.5
58	.62	-.78	.03	-.47		1.9
61	.96	1.10	-.79			3.4
66	.74	-1.10	-.23	.41		4.9
69	.79	-2.47	-.38	-.27	1.61	2.7

**Table 11. Item Parameter and Fit Summary, Multiple-Choice Items,
Grade 6 Reading (N=2361)**

Item	a	b	c	Fit-Z	Item	a	b	c	Fit-Z
4	.31	-3.58	.20	2.0	47	1.09	1.70	.12	.3
5	.72	-1.86	.20	-1.0	92	.79	.45	.31	2.6
6	.75	-1.57	.20	-.1	93	.99	-1.30	.26	-1.2
8	1.10	-.30	.24	-.5	94	1.16	-.54	.21	.1
9	.75	1.52	.18	.4	95	1.22	-.50	.35	-1.5
10	1.12	1.15	.26	-.6	96	.81	-1.23	.20	1.2
15	.91	-2.16	.20	-.2	97	1.42	-1.46	.26	-.4
16	1.28	-.70	.35	.2	98	1.03	-1.53	.20	1.6
17	1.03	-.80	.28	-.1	99	.75	-.11	.23	3.7
18	.60	-.23	.19	.6	100	.68	-.79	.20	-.9
19	.99	-.16	.26	1.5	101	.51	-.06	.20	.4
20	.83	-.82	.18	.9	102	.76	-.61	.20	2.1
21	.59	-1.41	.20	3.7	103	.63	.17	.20	-.1
22	.60	-.68	.20	.5	104	1.09	-.16	.25	.5
23	.40	-.39	.22	.6	105	1.16	-.42	.23	2.0
24	.44	-1.55	.20	1.9	106	.99	.66	.27	1.4
25	.60	2.17	.13	.9	107	1.18	2.21	.36	.2
28	.93	.89	.28	.2	108	1.48	1.83	.26	1.5
29	.87	-.23	.36	2.7	109	.80	-.55	.18	1.3
30	.89	-2.00	.20	-.4	110	.67	.55	.25	.2
33	.86	-1.37	.20	2.6	111	.79	-.58	.23	1.3
34	.69	-.44	.26	-.4	112	.45	1.46	.20	-.7
35	1.01	-.90	.21	-.2	113	1.46	-.26	.28	.1
39	.76	-1.09	.20	-.9	114	1.20	1.44	.20	3.0
40	1.30	-1.09	.18	-.1	115	1.31	-.51	.20	1.4
43	1.01	-1.52	.20	1.8	116	1.03	-.19	.24	-.7
44	.90	-1.16	.18	-.1	117	1.04	-.21	.22	2.4
45	.74	-1.21	.20	1.1	118	1.27	-.16	.23	-.1
46	1.03	-1.78	.20	-1.1					

**Table 12. Item Parameter and Fit Summary,
Constructed-Response Items, Grade 6 Reading
(N=2361)**

Item	f	g1	g2	g3	g4	Fit-Z
7	.79	-1.59	-.61			3.9
11	1.04	-.71	-2.09			1.3
12	1.14	-2.29	-.95	.27		2.5
13	.77	-.42	-.90	.54		8.2
14	.97	-1.02	-.79	-.75		-.5
26	.58	-.81	.38	1.63		.3
27	.59	.00	-1.11	-1.04		3.4
31	.80	-.32	-1.70			.7
32	.88	-.67	1.40			.7
36	.43	.26	-.19	1.58		1.5
37	.79	-1.60	1.91			1.9
38	.67	.80	.00	-.07	1.05	1.5
41	.85	-.60	-.40			2.5
42	.85	-.64	-.19	-.14		.7
119	.81	-.94	-1.20			2.0
120	.84	-.88	.04	1.33		-1.1

**Table 13. Item Parameter and Fit Summary, Multiple-Choice Items,
Grade 6 Writing (N=2588)**

Item	c	b	c	Fit-Z	Item	c	b	c	Fit-Z
48	.83	-.90	.20	.1	70	1.10	.76	.26	3.8
49	.65	-1.67	.20	.4	71	.63	-.70	.15	.5
50	.58	-2.22	.20	-.3	72	.62	-1.88	.20	1.4
51	.60	.97	.14	.7	73	1.01	-1.47	.20	1.0
52	.90	-.66	.19	2.6	74	1.12	-1.63	.20	1.6
53	.61	.39	.18	-.7	75	.47	-.89	.00	2.0
54	.82	.99	.24	1.7	76	.69	.41	.24	-1.1
55	.89	-.38	.25	1.4	77	.83	-.70	.16	-.8
56	.84	-.68	.15	1.9	78	1.49	-1.65	.15	-.9
57	.66	-.59	.14	2.4	79	1.07	-.57	.13	.0
58	.86	-.37	.27	.9	80	.71	-1.02	.20	1.6
59	.40	-.22	.20	.6	81	1.05	-1.28	.14	4.1
60	.70	-.92	.20	2.5	82	1.09	-.82	.23	1.7
61	1.01	.96	.24	.3	83	.96	-.84	.20	-.6
62	.90	-1.43	.20	1.0	84	.75	-.35	.14	1.4
64	.88	.13	.14	-.5	85	1.00	.10	.24	.9
65	.76	.55	.22	1.3	86	1.05	1.38	.18	-1.0
66	.61	1.42	.11	.9	87	.70	.44	.18	.8
67	.90	.52	.20	2.0	88	.63	-1.75	.20	2.6
68	.99	-.44	.19	.5	89	1.05	-.91	.14	-.8
69	.66	-1.42	.16	.0	90	.90	-.88	.14	-.7

**Table 14. Item Parameter and Fit Summary,
Constructed-Response Items, Grade 6 Writing (N=2588)**

Item	Part	f	g1	g2	g3	g4	Fit-Z
1		1.07	-5.73				-1.5
2	A	.72	-2.75				-1.6
2	B	1.45	-3.68				.5
2	C	.99	-.74				-.2
2	D	1.13	-.97				-.4
2	E	1.30	-2.19				.6
2	F	1.34	.78				.8
3	A	1.10	-3.38	-2.63	.03	2.14	7.1
3	B	1.29	-5.38	-2.83	.34	2.46	-2.2
3	C	1.53	-4.92	-2.29			-1.8
63		1.02	-4.00	-1.26	1.64	3.35	1.2
91		1.15	-2.59	-1.49	1.47	3.30	2.5
121		1.23	-2.75	-1.15	1.82	4.16	1.3

**Table 15. Item Parameter and Fit Summary, Multiple-Choice Items,
Grade 6 Mathematics (N=3752)**

Item	a	b	c	Fit-Z	Item	a	b	c	Fit-Z
1	.51	-1.06	.15	.1	31	1.03	-.80	.44	.6
2	.76	-2.87	.20	-.9	32	.74	-1.50	.00	2.0
3	.56	-1.59	.20	.9	33	.90	.18	.21	.1
4	.80	-.65	.30	-.7	35	1.00	-1.38	.26	-.4
6	.79	-.43	.26	-.6	36	.74	-1.47	.20	.6
7	.77	-1.52	.15	-.7	37	.90	-.71	.10	-.2
8	1.02	-.83	.28	-1.1	39	.55	-1.95	.20	5.3
9	1.40	-.31	.21	1.1	41	1.30	-.07	.21	.7
11	1.00	-1.05	.32	-.6	42	.61	-1.22	.15	.3
12	1.03	-1.34	.15	.1	43	.86	.48	.19	2.7
14	.96	-.60	.22	.6	45	.62	-.84	.20	1.5
15	1.05	.67	.09	.8	46	.74	-.38	.28	-1.0
16	.60	.69	.24	1.6	47	.63	-.18	.18	.8
18	.83	-1.55	.20	-1.1	48	.58	-.73	.20	-.5
19	.87	-1.21	.13	2.1	49	.68	-.16	.21	1.1
21	.84	-.38	.30	1.6	51	.58	-.74	.20	.6
22	.65	-.54	.14	.5	53	.99	-.37	.36	-1.0
23	1.15	.31	.39	-.4	54	.86	-1.75	.20	-.3
24	.61	-.70	.16	-.1	55	.57	-1.37	.00	-.9
26	.61	-1.72	.20	1.3	56	1.00	-.74	.10	1.9
27	.62	-1.55	.20	2.4	58	.87	-.79	.13	-1.1
28	.67	.36	.20	-.8	59	.69	-1.34	.20	.3
29	.98	.79	.10	-.4					

**Table 16. Item Parameter and Fit Summary,
Constructed-Response Items, Grade 6
Mathematics (N=3752)**

Item	f	g1	g2	g3	g4	Fit-Z
5	1.02	-1.10	.01			5.6
10	.82	-2.68	-.90	-.52		1.5
13	1.22	-.46	1.13			-.3
17	.92	-.16	2.71	-1.49		1.2
20	.66	-2.01	-1.42	-.87	-1.15	4.6
25	.78	-4.47	-1.44			-1.7
30	.76	-1.61	-.98	-.06		7.3
34	.79	-1.08	.06			2.8
38	.91	-.72	1.82	-.18		1.2
40	.97	-2.91	-1.73	-.34	-.36	2.2
44	.82	-1.98	-.84			8.4
50	.92	-3.21	-2.13	-.05		22.8
52	.80	1.17	-1.59			5.7
57	.38	-1.93	2.14	-1.43		2.0
60	1.11	-1.02	.10	.62	.95	3.9

**Table 17. Item Parameter and Fit Summary, Multiple-Choice Items,
Grade 7 Reading (N=4586)**

Item	a	b	c	Fit-Z	Item	a	b	c	Fit-Z
4	.39	-2.06	.20	4.1	43	.76	-.08	.21	.9
5	.81	-2.33	.20	2.3	44	1.10	-1.48	.20	-.8
6	.75	-.48	.20	-.9	45	1.15	.52	.21	4.2
7	.53	-1.69	.20	-1.0	46	1.04	-1.90	.20	-.1
8	.87	-2.55	.20	-.2	48	.50	-.21	.20	-.4
9	.98	-2.72	.20	-.4	49	1.26	-1.28	.29	-1.2
10	.71	-1.58	.20	.7	50	1.30	-.82	.21	.8
11	.67	-.72	.30	-.1	51	1.39	.11	.28	1.0
12	.66	-2.25	.20	-.2	52	.65	-.11	.18	.8
13	.98	-2.16	.20	.9	53	.94	-.16	.17	-.7
15	1.15	-.72	.26	-.4	54	.37	-.06	.20	3.5
16	.71	1.03	.17	.1	95	.63	.33	.23	.7
17	.95	.82	.24	3.1	96	.89	-1.68	.20	-.9
18	1.21	-1.23	.16	-.1	97	.99	-.76	.18	-.1
19	1.18	1.09	.27	1.3	98	1.09	-.82	.33	1.3
20	1.02	.04	.27	1.0	99	.85	-2.21	.20	2.0
21	.96	-.72	.15	.4	100	1.18	-2.34	.20	.3
22	.54	-1.05	.21	1.5	104	1.71	1.44	.29	5.9
25	1.44	-1.18	.34	-.5	105	.57	2.09	.35	.1
26	.66	1.11	.19	.4	106	.99	.46	.27	1.9
27	.90	.50	.25	.3	107	.71	.00	.20	7.0
34	.58	-2.59	.20	2.2	108	.60	.54	.24	-.1
35	.90	-2.29	.20	.2	109	.71	.48	.21	-.4
36	.74	-.43	.21	1.3	110	1.66	-1.51	.29	.8
37	.86	1.38	.19	-1.0	111	1.37	-.91	.23	.0
38	.56	-2.18	.20	1.5	112	.90	-.64	.21	1.2
39	.73	-1.71	.20	-1.2	113	.69	-1.56	.20	-.6
40	.70	-.65	.21	2.0	114	1.10	-.52	.24	1.8
41	1.26	-2.10	.20	-1.0	115	1.20	-.83	.19	-.3
42	.67	-.98	.20	3.9	118	.68	-.25	.17	-1.0

**Table 18. Item Parameter and Fit Summary,
Constructed-Response Items, Grade 7 Reading
(N=4586)**

Item	f	g1	g2	g3	g4	Fit-Z
14	.69	-1.94	-.90			11.7
23	.59	-.22	-.27	.11		4.3
24	.79	-.49	-.49			-.9
28	1.16	-.64	-2.32			4.5
29	1.05	-1.79	-1.11	-.13		1.5
30	1.57	-1.13	3.91			12.9
31	.82	-.39	-1.48	-.23		12.9
32	.71	-1.01	-1.05			11.3
33	.82	-.34	-.57	-1.42		9.2
47	.76	-1.70	1.18	-.15		9.4
101	.71	-.15	-.39	-.21		6.2
102	1.17	-3.00	-1.32			.8
103	.70	.67	-.72	-.47		12.5
116	.92	-.95	-2.45			2.7
117	.79	-1.34	-.13	.91		2.5

Table 19. Item Parameter and Fit Summary, Multiple-Choice Items, Grade 7 Writing (N=4556)

Item	a	b	c	Fit-Z	Item	a	b	c	Fit-Z
55	.84	-1.09	.30	.5	75	.74	-.97	.20	.5
56	1.10	-.55	.35	-.1	76	.60	.06	.17	-.4
57	.88	-.99	.22	-.5	77	.70	-1.28	.20	.9
58	.37	1.80	.21	1.3	78	.61	.57	.48	.7
59	.84	.96	.26	.9	79	.84	-2.72	.20	-.7
60	.30	1.31	.20	.6	80	.59	-2.15	.20	2.0
61	.77	-1.89	.20	.6	81	.89	-.97	.11	1.0
62	.69	.82	.35	1.0	82	1.30	-1.70	.24	-.3
63	.64	-.25	.30	.0	83	.90	-1.11	.13	1.1
64	1.17	-1.75	.20	1.0	84	.89	-.47	.26	1.4
65	.90	.94	.27	.3	85	.92	1.00	.19	.5
66	.89	-.10	.38	-.9	86	.99	-1.24	.13	2.7
67	.84	2.40	.23	-.6	87	.60	-1.45	.00	3.9
69	.93	-.13	.16	.2	88	1.11	-1.27	.26	1.1
70	.63	.03	.15	-1.0	89	.66	-.06	.10	1.8
71	.55	1.46	.11	.5	90	1.15	-1.40	.39	-.4
72	.93	.07	.20	-.1	91	.84	-.68	.13	2.3
73	1.20	-.59	.26	-.4	92	.76	.10	.13	2.2
74	.80	-1.57	.20	.3	93	.82	1.29	.15	.3

Table 20. Item Parameter and Fit Summary, Constructed-Response Items, Grade 7 Writing (N=4556)

Item	Part	f	g1	g2	g3	g4	Fit-Z
1		1.16	-5.15				3.3
2	A	.72	.44				-1.3
2	B	.53	.17				2.1
2	C	.77	.54				-.1
2	D	1.10	.24				4.5
2	E	.67	-.70				1.1
2	F	.42	.67				4.9
3	A	.85	-1.87	-2.22	.22	1.70	43.3
3	B	1.33	-4.21	-3.05	-.08	2.06	2.1
3	C	1.75	-5.49	-2.52			1.1
68		1.08	-3.55	-2.33	.36	3.09	.9
94		1.22	-2.67	-2.08	.23	2.44	5.5
119		.94	-2.08	-1.17	.66	2.57	12.8

**Table 21. Item Parameter and Fit Summary, Multiple-Choice Items,
Grade 7 Mathematics (N=5435)**

Item	a	b	c	Fit-Z	Item	a	b	c	Fit-Z
1	.57	-1.78	.20	.2	31	1.15	.52	.11	-.3
2	.64	-.32	.20	.1	32	.92	-1.14	.24	-1.1
3	1.02	-.39	.10	-.6	33	.85	.12	.19	.7
4	.13	2.38	.20	4.3	35	.58	-.43	.17	3.9
5	.47	-1.71	.15	2.0	37	.90	-2.01	.20	1.8
7	.68	-2.61	.20	2.9	38	.37	-3.98	.20	-.6
8	.71	.10	.23	.9	39	1.45	-.29	.13	3.7
9	.67	-2.75	.20	.7	41	.95	-.71	.17	2.3
11	.82	-1.60	.20	2.4	43	.49	-1.66	.15	.7
12	.72	-.86	.31	.0	44	.68	-1.10	.20	1.6
13	.91	.70	.20	-.3	45	1.09	.45	.13	3.0
15	1.20	.95	.24	.4	47	.46	-1.27	.20	2.4
16	.82	.46	.08	.8	48	.63	-.38	.20	-.4
18	.48	-2.13	.20	1.5	49	.55	-.99	.20	4.7
19	1.32	.27	.23	.6	51	1.66	.10	.31	-.7
21	.85	-.59	.28	-1.1	52	.76	-.39	.14	1.5
22	.48	-1.38	.15	.3	53	1.19	-.39	.16	-1.1
24	.97	-.35	.30	1.5	55	.98	-1.20	.17	-.9
25	.58	.64	.36	-.2	56	1.17	-.09	.28	.4
26	.70	-.44	.20	-1.4	57	1.46	.85	.39	-.1
27	1.32	-.03	.41	1.3	58	.95	1.02	.18	-.3
28	1.09	.32	.31	-.2	59	.64	-.31	.13	1.5
30	.60	-2.55	.20	.1					

**Table 22. Item Parameter and Fit Summary,
Constructed-Response Items, Grade 7
Mathematics (N=5435)**

Item	f	g1	g2	g3	g4	Fit-Z
6	.69	.63	.03	.08		4.6
10	1.94	1.43	1.47			.3
14	.50	.46	.09	-.06		8.0
17	1.06	-.49	-.49			7.0
20	.40	.75	-.12	-.60	.38	6.5
23	.66	-3.77	-1.78			.3
29	1.06	.84	.96	1.57		4.1
34	.88	-.56	.21	.84		.4
36	.90	-1.70	-.03			1.8
40	1.06	.95	.67	.86	1.02	2.7
42	.99	.75	-.06			.5
46	.97	-.66	1.73	-.31		.3
50	.58	-.59	-.37			.5
54	1.10	.16	.44	-.36		5.3
60	1.15	1.00	.90	.98	2.29	5.6

**Table 23. Item Parameter and Fit Summary, Multiple-Choice Items,
Grade 8 Reading (N=4405)**

Item	a	b	c	Fit-Z	Item	a	b	c	Fit-Z
4	.28	-.88	.20	2.0	41	1.17	-2.01	.20	.4
5	.48	.73	.23	-.5	43	.47	-.63	.16	-.4
6	.87	-1.63	.20	-.4	44	.87	-1.21	.13	2.1
8	.72	-1.28	.16	.0	45	.88	-2.21	.00	-.7
10	.65	-1.12	.20	3.0	46	1.25	-1.55	.18	-.2
11	1.10	.95	.27	-.6	47	1.26	-1.10	.13	-.2
12	.70	.43	.20	2.7	48	1.42	-.27	.26	-1.1
13	.85	-2.52	.20	-.9	49	.65	-.35	.20	5.7
14	1.15	-2.09	.20	.7	50	.97	-.41	.21	1.1
15	1.14	-2.23	.00	.1	51	1.02	1.09	.45	.6
16	.88	.37	.14	1.4	52	1.24	.85	.21	.9
18	.78	-.81	.19	.5	95	.42	-1.09	.20	4.5
19	1.36	.15	.22	.8	96	.84	-1.52	.20	1.3
20	1.12	-1.41	.18	.0	97	.96	-.89	.18	-.6
21	.90	-1.01	.26	2.6	98	.97	-2.36	.00	1.7
22	.97	-1.36	.16	2.2	102	1.02	-2.03	.20	-1.2
24	1.02	-1.55	.21	-1.3	103	.77	-1.47	.20	3.7
25	.45	-1.12	.20	.1	104	.35	-.34	.20	.5
26	.49	-1.81	.20	3.2	107	1.43	.25	.24	6.2
29	.88	-1.98	.20	-1.3	108	1.54	.45	.31	1.7
30	.86	-2.63	.20	.9	109	1.00	1.27	.24	-1.3
31	1.16	-2.07	.14	1.2	110	1.45	-.70	.47	-.2
34	.65	-2.45	.20	.7	111	.63	-.88	.20	4.3
35	.88	-1.90	.20	.5	113	1.22	.58	.26	.6
36	1.53	-2.37	.20	-1.0	114	1.58	1.92	.15	8.2
37	.61	-2.07	.00	2.8	115	1.29	-1.94	.17	1.5
38	.73	-.38	.18	1.6	116	1.32	-1.38	.20	1.0
39	1.17	-1.78	.20	.3	117	.94	-1.00	.24	-1.0
40	1.11	.12	.20	-.2	118	.72	-2.02	.20	.5

**Table 24. Item Parameter and Fit Summary,
Constructed-Response Items, Grade 8 Reading
(N=4405)**

Item	f	g1	g2	g3	g4	Fit-Z
7	.63	-.30	1.47			9.7
9	1.34	-1.44	-.08			1.3
17	.95	.05	.13			1.4
23	.92	-.34	-1.72			1.3
28	1.05	-.39	-.62			3.7
32	.71	-1.05	-1.01			1.3
33	.57	-.26	-.54	-.03		4.6
42	.77	-1.22	.71	-.96		-.1
99	.59	-1.27	-.55			15.7
100	1.01	-2.36	-1.55			-.1
101	1.11	-2.36	.10			-.7
105	.71	-.77	-.02			-.3
106	.79	.24	.49			1.1
112	1.15	.26	.63			4.1

Table 25. Item Parameter and Fit Summary, Multiple-Choice Items, Grade 8 Writing (N=4281)

Item	a	b	c	Fit-Z	Item	a	b	c	Fit-Z
53	.67	-1.06	.13	-1.1	74	.61	-.90	.20	3.4
54	.32	1.02	.14	1.2	75	.70	-.86	.12	1.0
55	1.22	2.77	.29	-.6	76	1.00	-1.65	.20	1.8
56	.56	-.56	.20	.7	77	.85	-.68	.11	-.9
57	.82	1.31	.18	3.9	78	.48	-1.76	.20	.0
58	.85	-.51	.28	.7	79	1.04	-1.01	.24	-.6
59	.81	1.78	.28	.0	80	1.13	-1.76	.20	-.3
60	1.27	-.96	.18	-.9	81	1.05	-.66	.15	.2
61	1.09	-1.55	.20	-.6	82	.45	-.51	.00	6.0
62	.90	-1.26	.12	-.4	83	.29	.51	.20	10.0
63	.55	-.86	.20	-.3	84	.54	-.25	.12	6.2
65	1.01	-2.07	.20	1.0	85	.63	-1.88	.00	6.3
66	.82	-1.78	.20	-1.3	86	.48	-.07	.15	-.2
67	.83	-.81	.11	-.1	87	.68	-1.29	.20	4.6
68	1.44	-1.30	.13	1.0	88	.41	-1.01	.20	4.1
69	1.41	-1.60	.24	-.6	89	1.17	-2.36	.20	.2
70	.40	.26	.15	1.0	90	.70	-1.99	.20	.9
71	1.17	-1.06	.17	3.2	91	.61	-1.49	.00	2.4
72	.97	-1.24	.09	5.6	92	1.29	-1.42	.20	.0
73	1.34	-1.11	.16	-.9	93	.86	-.46	.13	-.5

Table 26. Item Parameter and Fit Summary, Constructed-Response Items, Grade 8 Writing (N=4281)

Item Part	f	g1	g2	g3	g4	Fit-Z
1	1.63	-6.21				-.9
2 A	.92	-.90				.0
2 B	.77	-1.85				.1
2 C	1.27	-2.93				1.7
2 D	.92	-1.55				-.2
2 E	.75	-.01				1.1
2 F	.49	.70				-.2
3 A	1.22	-2.76	-2.80	-1.02	1.34	12.1
3 B	1.58	-5.66	-3.51	-.91	1.72	.9
3 C	2.24	-7.37	-3.74			-.9
27	1.47	-4.39	-3.14	.03	2.74	4.2
64	1.49	-4.87	-2.87	.10	2.75	3.6
94	1.31	-3.88	-2.92	.17	2.72	16.0

**Table 27. Item Parameter and Fit Summary, Multiple-Choice Items,
Grade 8 Mathematics (N=4659)**

Item	a	b	c	Fit-Z	Item	a	b	c	Fit-Z
1	.68	-.34	.22	-.8	32	.41	-4.17	.20	2.7
3	.14	1.48	.20	.8	33	1.12	.18	.24	1.2
4	.72	-.83	.26	.8	35	.86	-.53	.11	5.1
6	1.32	.16	.16	.9	36	.54	-.56	.18	2.5
7	1.04	-.25	.22	.5	37	.52	-1.72	.20	3.5
8	.22	-.09	.20	.1	38	1.34	.66	.11	6.2
9	.50	-.30	.17	2.5	39	.97	2.35	.10	-.1
10	.86	.22	.16	1.2	41	.61	1.31	.07	.3
12	.83	-1.76	.20	1.0	42	.27	-1.58	.20	5.4
13	1.19	-.37	.21	1.5	43	.78	.56	.16	.0
14	.57	-1.07	.17	-.2	44	.94	.12	.23	1.8
15	1.03	-.16	.19	-.9	45	.97	.48	.23	2.6
18	.83	-.86	.38	-.3	47	.70	-1.64	.20	-.6
19	.76	.18	.18	-1.0	48	1.00	-.46	.23	.4
21	.67	-1.93	.20	.9	50	1.14	1.03	.03	3.4
22	1.12	1.67	.28	3.0	51	1.31	-.31	.32	.3
24	1.13	.41	.21	-1.0	54	1.13	-.54	.33	-.5
25	.55	-.42	.20	1.1	55	.81	-.37	.17	.5
26	.82	-.94	.20	.5	56	.34	.27	.20	-.7
29	.77	-.16	.24	.3	57	1.22	.24	.13	2.4
30	.82	-.21	.20	.0	58	.48	-.91	.00	-.1
31	1.11	-.12	.24	-.4	59	.68	.13	.36	1.3

**Table 28. Item Parameter and Fit Summary,
Constructed-Response Items, Grade 8
Mathematics (N=4659)**

Item	f	g1	g2	g3	g4	Fit-Z
5	.69	.60	-.10	-.05		2.5
11	1.82	.84	1.02			.7
16	.59	.00	.20	-.03		9.6
17	1.05	-1.11	-.49			1.8
20	.86	-2.97	-.37	.65	1.81	13.2
23	.66	-.15	2.33			15.2
27	.97	-.49	1.10	1.72		17.6
28	1.23	3.76	1.85			-.3
34	1.00	-.90	.05	.74		1.6
40	1.10	.58	.70	.76	1.09	5.6
46	.86	.82	-.47			4.9
49	1.64	1.79	1.36	1.11		9.2
52	.54	-.22	-.77			7.1
53	1.21	.60	.05	1.33		.1
60	.95	-.30	-.44	.34	.03	7.5

**Table 29. Item Parameter and Fit Summary, Multiple-Choice Items,
Grade 8 Science (N=9060)**

Item	a	b	c	Fit-Z	Item	a	b	c	Fit-Z
1	.51	1.81	.29	6.8	46	1.16	.50	.44	2.7
2	1.14	-.30	.50	.6	47	.80	-.85	.09	.4
3	.82	1.52	.18	.3	48	.75	-.18	.18	1.4
4	.70	1.51	.30	.3	49	.86	.15	.16	3.4
5	.33	-.42	.20	1.0	50	1.02	-1.97	.20	4.6
6	.42	.73	.12	.4	51	.75	.35	.24	-1.2
8	1.03	1.16	.30	-.3	54	1.31	-1.00	.13	-.3
9	.91	.40	.37	-.1	55	.61	-1.93	.20	3.4
10	.90	.10	.25	2.9	56	.80	-.15	.36	1.1
11	.79	-.43	.30	3.7	57	.78	.83	.32	.7
12	.45	-.82	.20	2.0	58	.46	-1.31	.20	8.2
13	.98	-.33	.31	.1	60	.97	-.58	.14	.9
14	.82	.50	.31	1.3	61	.54	-1.51	.20	.0
15	.94	.47	.18	1.1	62	.69	-.27	.42	1.8
16	.91	.43	.28	.6	63	.48	-2.07	.20	-.3
17	.38	-1.03	.20	.2	64	.97	1.41	.22	2.3
18	.68	.54	.29	-.1	65	.58	-1.48	.20	2.9
26	.93	.59	.50	-.4	66	.81	.00	.40	1.4
27	1.10	-.32	.28	.9	69	.71	-.60	.31	-.4
28	.60	-1.11	.00	5.1	70	.76	.18	.26	-.6
30	.93	.69	.11	.0	72	1.03	-1.07	.19	1.4
31	.43	-1.72	.20	.0	73	.64	.14	.28	1.3
32	.91	.56	.14	1.9	74	1.19	.15	.27	2.7
33	.68	-1.82	.20	.1	76	.92	-.85	.16	-.7
35	.78	-.17	.49	2.1	77	.66	-1.39	.17	.0
38	.88	-1.04	.31	.0	78	1.03	-.85	.15	3.0
39	1.18	1.07	.33	-.5	79	.56	-2.17	.20	2.9
40	.99	-.41	.27	.2	80	.66	-1.42	.15	1.3
41	.89	-.13	.16	.2	81	.62	-.92	.20	.3
42	.80	-1.18	.10	3.1	83	.71	-1.36	.20	-.7
44	1.13	-.59	.17	.0	84	.70	-1.70	.20	1.5
45	.77	.49	.16	.0					

**Table 30. Item Parameter and Fit Summary,
Constructed-Response Items, Grade 8 Science
(N=9060)**

Item	f	g1	g2	g3	g4	Fit-Z
7	1.02	-.95	3.61			14.8
19	.81	-1.47				2.6
20	.47	-.56	-.93	-.95	-.01	8.3
21	.48	.47	-.39			1.8
22	.80	-.93				8.9
23	.77	-.94				19.8
24	.80	-.04				1.2
25	.71	-1.98	.49			9.4
29	.87	-.56				5.1
34	1.10	2.80				2.5
36	1.58	1.67				1.7
37	.77	-1.87	-.67			8.2
43	.96	-1.34	1.26			1.8
52	1.04	-1.08	.11			8.8
53	.70	2.91				2.6
59	.55	.53	-1.59			19.6
67	.67	-.48				16.8
68	.77	-.21	-1.50	-.01		2.6
71	1.08	-2.56	1.27	1.45		6.7
75	1.35	2.81				-.6
82	1.23	2.92				.3

Table 31. Item Parameter and Fit Summary, Multiple-Choice Items, Grade 9 Reading (N=5917)

Item	a	b	c	Fit-Z	Item	a	b	c	Fit-Z
4	.71	-1.47	.17	.3	38	.87	-2.03	.20	.5
5	.91	.93	.38	1.1	39	.63	-1.37	.17	1.9
6	.58	-1.13	.20	2.5	40	.88	-.60	.17	3.2
7	.59	-1.52	.00	3.1	41	.91	-.61	.25	.3
8	.99	-.59	.25	-.8	42	.76	-.63	.22	2.3
9	.84	-.72	.15	-.3	43	.41	-1.28	.20	-.1
10	.50	.16	.14	2.0	44	.89	-.65	.20	-.3
11	.94	-.96	.25	-.3	47	.73	-.89	.20	5.5
12	.54	-1.75	.20	8.1	49	1.03	-1.42	.11	-.6
13	.82	-2.80	.20	1.0	50	.58	-1.83	.20	2.3
14	1.30	-1.01	.34	4.6	96	1.03	-.07	.21	6.9
15	1.14	-2.04	.20	-.4	97	1.14	.20	.30	.1
16	1.06	-2.14	.18	.5	98	1.07	.95	.22	1.4
17	.83	.38	.12	.3	99	.43	-1.24	.00	.2
19	1.22	-.13	.22	.5	100	1.20	-1.16	.39	-1.3
20	1.04	1.01	.33	1.0	101	.48	-.52	.18	1.5
21	.87	-1.01	.30	.5	103	1.25	-1.55	.14	-1.2
22	.66	-.29	.23	2.9	104	.66	-2.18	.20	-.6
23	.73	.39	.29	.4	105	.94	-1.17	.26	1.6
24	1.12	-.38	.26	-.4	106	.48	-.09	.20	.9
25	.44	-.10	.20	2.0	107	.84	.06	.30	.7
26	1.18	-1.41	.17	1.2	108	1.17	-.69	.24	-.3
27	.89	-1.47	.19	.0	110	.40	.18	.20	1.0
29	.47	-1.26	.20	1.6	111	1.25	.06	.35	4.5
30	.54	-1.60	.20	.4	112	.92	-.17	.34	-.7
33	.97	-2.14	.20	-.4	113	1.15	-.23	.19	1.4
36	.79	-2.23	.20	.5	117	.70	1.81	.22	1.2
37	1.24	-1.76	.25	-.4	118	1.17	1.65	.17	3.5

Table 32. Item Parameter and Fit Summary, Constructed-Response Items, Grade 9 Reading (N=5917)

Item	f	g1	g2	g3	g4	Fit-Z
18	.92	-.44	-.45			2.3
28	.92	-.53	-1.59			1.2
32	.96	-.53	-.99			3.0
34	.93	-1.37	-1.78			1.7
35	.61	-.60	-.97	-.36		6.0
45	.86	-.69	1.00			8.9
46	1.02	.12	.25			-.7
48	.63	-.70	.22	1.49		1.1
51	1.19	-1.15	.48			11.5
52	.72	.31	-1.70	.37		5.3
102	1.00	.05	.34			.1
109	.84	-.13	-.10	1.07		2.1
114	1.07	-.75	-.44	-.04		2.7
115	1.10	-.90	-.82			1.1
116	.42	-.75	-2.09	6.95	-7.25	13.0

**Table 33. Item Parameter and Fit Summary, Multiple-Choice Items,
Grade 9 Writing (N=5892)**

Item	a	b	c	Fit-Z	Item	a	b	c	Fit-Z
53	.89	-.09	.20	-.2	75	1.03	-1.35	.10	11.8
54	.65	-1.01	.20	.0	76	.86	-.98	.09	1.3
55	.76	2.04	.28	2.0	77	.68	-.14	.15	3.4
56	1.05	-.52	.39	1.0	78	.78	-.33	.28	.6
57	.80	1.33	.14	.4	79	.88	-1.11	.08	6.9
58	.57	-.24	.11	-.6	80	.90	-2.39	.20	2.2
59	.55	-.84	.20	-.4	81	.33	-.27	.20	3.9
60	.49	.30	.20	.6	82	.63	-.36	.21	.8
61	.78	1.04	.11	3.8	83	.82	-1.60	.20	.5
62	.96	-1.07	.18	1.4	84	.58	-2.31	.20	6.2
63	1.25	-.92	.19	-.3	85	.62	.20	.14	.8
64	1.04	-1.57	.20	2.7	86	1.22	-1.75	.22	-1.2
65	.72	-1.38	.00	1.5	87	.83	1.56	.16	7.2
66	.50	-1.51	.00	.0	88	1.17	-.48	.24	1.2
68	.85	-2.35	.20	2.3	89	.81	-.77	.10	-.3
69	.92	-1.30	.00	6.9	90	1.01	.25	.32	3.1
70	.86	-.70	.12	-.5	91	.44	-.12	.20	21.6
71	1.53	-1.35	.16	14.5	92	.73	-.17	.10	.2
72	1.13	-1.79	.20	4.0	93	1.37	-.80	.20	2.5
73	.36	.08	.00	-.5	94	.59	-.53	.00	1.8
74	1.18	-1.19	.15	1.0					

**Table 34. Item Parameter and Fit Summary,
Constructed-Response Items, Grade 9 Writing (N=5892)**

Item Part	f	g1	g2	g3	g4	Fit-Z
1	1.34	-5.39				-1.2
2 A	1.19	-.13				1.4
2 B	1.16	-2.00				-.2
2 C	.60	.66				-.6
2 D	.92	-1.01				2.8
2 E	.96	-2.12				-.9
2 F	.54	-1.02				.1
3 A	1.35	-4.00	-3.11	-.43	2.72	14.3
3 B	1.39	-5.54	-3.16	-.33	2.72	2.6
3 C	1.61	-6.03	-3.22			-.7
31	1.06	-2.56	-1.87	.31	2.15	14.2
67	1.28	-3.87	-2.40	.20	2.65	6.5
95	1.09	-3.39	-1.99	.49	2.54	11.2

**Table 35. Item Parameter and Fit Summary, Multiple-Choice Items,
Grade 9 Mathematics (N=4308)**

Item	a	b	c	Fit-Z	Item	a	b	c	Fit-Z
1	.67	-1.95	.20	1.0	31	.75	-.24	.13	1.8
2	.45	-.53	.16	2.4	32	1.22	1.31	.20	1.2
3	.87	-.45	.21	.8	33	1.32	.11	.23	.3
4	1.00	-.80	.30	-.6	36	1.35	-.75	.22	.2
6	.86	.08	.48	1.3	37	1.25	-1.16	.19	1.9
8	.52	1.22	.10	.6	38	1.13	.60	.26	.6
9	1.09	.60	.36	.4	39	1.07	-.07	.25	.1
10	.83	-.81	.11	-.7	41	.47	-.81	.20	1.6
11	1.21	-.44	.17	.1	42	1.11	-1.29	.21	1.5
12	.43	.36	.19	4.6	43	.96	-.83	.19	1.2
13	.62	-.26	.15	1.5	45	.89	-.23	.13	-1.1
15	1.09	.19	.11	.7	46	.87	-.44	.18	-1.1
17	1.47	.23	.24	-.4	47	1.36	1.03	.11	1.1
18	1.39	2.41	.25	3.4	49	.53	.43	.18	1.6
19	1.30	-.97	.06	.9	50	1.17	.81	.03	3.8
21	1.10	2.19	.07	1.1	52	.77	.22	.18	.1
22	.76	.22	.26	-.2	54	.84	.28	.18	2.0
24	.63	-1.11	.20	-.7	55	1.04	.47	.33	1.3
25	.73	-1.64	.20	.3	56	.50	-2.60	.20	3.9
26	1.08	-.82	.14	-1.4	57	.34	-.74	.20	1.7
27	.93	1.34	.26	3.6	58	1.00	-.36	.19	.9
28	.83	-1.04	.20	-1.2	59	1.31	1.02	.13	1.7
30	.77	-.15	.38	2.4					

**Table 36. Item Parameter and Fit Summary,
Constructed-Response Items, Grade 9
Mathematics (N=4308)**

Item	f	g1	g2	g3	g4	Fit-Z
5	1.61	1.31	1.47			3.3
7	.97	-.53	-.07	.30		3.8
14	1.50	2.86	1.96			-.6
16	.83	.69	.40	-.25		6.9
20	1.31	-.78	.52	1.66	2.54	1.2
23	1.10	.00	2.10			15.8
29	1.18	-2.35	4.09	.34		6.1
34	1.22	2.25	-.01			.1
35	1.25	-.34	-.83	.66		2.8
40	.79	.05	2.88	.97	.24	8.8
44	.28	3.15	2.61			.7
48	1.19	1.49	2.01	-.40		3.5
51	1.13	1.98	.43			.7
53	1.28	.01	1.03	2.14		1.6
60	.85	-.37	-.10	1.91	2.66	7.6

**Table 37. Item Parameter and Fit Summary, Multiple-Choice Items,
Grade 10 Reading (N=2915)**

Item	a	b	c	Fit-Z	Item	a	b	c	Fit-Z
4	.44	-1.17	.00	2.5	37	1.44	-.07	.37	.7
5	1.62	-.46	.34	.0	41	.86	-.69	.39	.1
6	.63	-1.66	.20	2.1	42	1.00	-.49	.27	1.0
7	.66	-1.61	.20	-.5	43	.30	-1.78	.20	1.4
8	.83	-1.20	.23	-1.0	44	.69	-.70	.20	.5
9	1.20	.69	.35	2.4	89	.74	-1.23	.21	-1.2
10	.85	-1.89	.20	.4	90	.94	-.16	.31	-.6
11	.80	-.14	.16	4.0	92	1.07	-1.88	.20	-.4
12	.71	.04	.26	.6	93	.68	-2.31	.20	1.3
15	1.14	.65	.36	.0	94	.40	-1.77	.20	.5
16	.88	-1.12	.20	.8	95	.81	-.21	.37	1.7
17	.50	-.26	.20	-.6	96	1.23	-.82	.35	1.0
18	.95	-1.08	.31	-.2	98	.35	-.26	.20	-.3
19	.77	-.34	.36	.2	99	.73	.53	.17	.6
20	.80	.13	.34	-.7	100	.99	-.04	.29	.2
21	1.18	-.67	.35	-.7	101	.82	-.96	.25	.7
23	.70	-1.63	.20	3.1	103	.60	-.83	.20	-.1
24	.67	-.01	.20	1.7	105	.41	1.68	.20	1.8
25	.39	-1.10	.20	.8	106	.78	-.31	.14	-1.4
26	.33	-1.14	.20	.6	107	.65	-1.12	.20	1.2
27	.61	-.74	.19	-.6	108	.83	1.39	.29	.1
28	1.01	.22	.34	.3	109	1.15	-.42	.31	.6
29	.62	.91	.31	1.0	110	.79	.00	.22	-.7
30	.41	2.64	.19	.7	111	.95	-1.18	.15	2.0
31	.60	.05	.22	1.4	112	.30	-.82	.20	3.1
32	.85	.07	.21	-.6	113	1.08	-.69	.13	1.3
33	.62	-2.00	.20	-.4	114	1.35	-.79	.35	.2
34	.71	-1.61	.20	-.3	116	.67	.85	.25	-.1
35	.91	-1.06	.17	.4	117	.38	.54	.20	-.5
36	.44	1.35	.19	-.3					

**Table 38. Item Parameter and Fit Summary,
Constructed-Response Items, Grade 10 Reading
(N=2915)**

Item	f	g1	g2	g3	g4	Fit-Z
13	1.10	-2.03	-1.25			.0
14	.92	-1.78	-1.39			1.6
38	.88	-1.57	-.97			-.4
39	.54	3.92	-5.02	-.75		3.5
40	.52	1.27	-1.43	-.76		3.2
45	.72	-.61	.84			5.4
46	1.02	-.23	.23			1.2
91	.76	.31	1.94			8.8
97	.79	-.81	.08	.57		1.5
102	.70	-1.55	-1.30	.11	1.63	2.8
104	.78	-1.21	.84	1.77		9.6
115	.79	-.23	-1.53	-1.20		-.6
118	.82	-.45	-1.05	-.82	.44	4.1

**Table 39. Item Parameter and Fit Summary, Multiple-Choice Items,
Grade 10 Writing (N=3057)**

Item	a	b	c	Fit-Z	Item	a	b	c	Fit-Z
47	0.78	-0.25	0.27	-0.1	68	0.69	-0.21	0.15	-0.8
48	0.39	0.28	0.20	0.5	69	0.70	-0.92	0.20	-0.7
49	0.72	1.12	0.15	0.8	70	0.89	-1.14	0.20	3.0
50	0.49	-0.90	0.00	1.4	71	0.95	-2.55	0.20	-1.4
51	0.20	0.13	0.20	4.2	72	0.36	-0.64	0.20	1.5
52	0.68	-1.59	0.00	1.5	73	0.75	-0.51	0.26	-0.8
53	1.00	-1.99	0.20	0.3	74	0.76	-1.86	0.20	-0.6
54	1.15	-1.55	0.18	0.3	75	0.61	-2.40	0.20	0.0
55	1.21	-1.36	0.23	-0.3	76	1.04	-1.11	0.33	0.4
56	0.43	-1.13	0.00	-0.2	77	0.92	-1.04	0.12	1.0
57	0.34	-0.57	0.20	-1.2	78	0.75	-2.14	0.20	5.5
58	0.55	-0.80	0.20	2.5	79	0.92	-0.02	0.21	0.7
59	0.43	-1.41	0.20	-0.2	80	0.60	0.03	0.18	2.1
60	0.42	0.71	0.20	4.7	81	1.46	-1.72	0.19	-0.4
61	0.67	0.96	0.24	0.3	82	0.67	1.34	0.14	-0.1
62	0.86	-1.46	0.00	7.6	83	1.30	-0.76	0.23	0.0
63	1.66	-1.42	0.24	0.2	84	0.81	-0.88	0.14	-0.9
65	0.54	-0.31	0.20	-0.2	85	1.06	0.04	0.38	1.8
66	0.68	-0.81	0.20	-0.8	86	0.68	-0.15	0.21	1.2
67	1.02	-1.17	0.13	2.2	87	1.18	-1.17	0.25	-0.7

**Table 40. Item Parameter and Fit Summary,
Constructed-Response Items, Grade 10 Writing
(N=3057)**

Item	Part	f	g1	g2	g3	g4	Fit-Z
1		1.27	-5.71				-8
2	A	1.32	-2.13				1.7
2	B	.80	-1.12				2.7
2	C	.81	.02				.7
2	D	1.39	.20				-.7
2	E	1.26	-3.11				-.3
2	F	.77	-2.29				.2
3	A	.94	-1.14	-2.60	-.28	1.36	23.0
3	B	1.34	-4.92	-2.98	-.23	1.81	1.4
3	C	1.46	-5.82	-1.45			.8
22		.96	-2.39	-2.71	.22	2.46	7.9
64		.95	-1.61	-2.47	.12	2.07	7.9
88		1.07	-3.28	-2.46	.67	2.67	1.7

**Table 41. Item Parameter and Fit Summary, Multiple-Choice Items,
Grade 10 Mathematics (N=4178)**

Item	a	b	c	Fit-Z	Item	a	b	c	Fit-Z
1	1.37	-.06	.19	1.1	31	.57	-.01	.22	-.9
2	1.13	-.54	.40	-.5	32	.56	-1.39	.20	-.2
3	1.26	1.13	.19	9.5	34	.61	.54	.10	.9
4	.94	-.87	.29	1.3	35	1.14	-.08	.19	1.2
5	.71	.56	.07	5.2	37	1.13	1.14	.18	1.0
7	.57	-.45	.21	-.1	38	1.45	.97	.16	.9
8	1.00	.76	.27	.2	39	.83	-.04	.32	3.4
9	.96	.12	.34	.5	41	.93	.00	.14	-.6
11	1.12	.01	.24	.5	42	.92	.70	.05	.1
12	.67	-.08	.23	-1.4	44	.99	.71	.05	-.7
14	.50	.71	.28	.1	45	.97	1.49	.39	-.3
15	.76	-.17	.19	1.1	46	1.63	.97	.36	1.5
16	1.20	-.75	.29	-.6	48	.75	-.72	.18	.7
18	.82	-1.09	.20	.8	49	.41	-1.79	.20	.2
19	.83	.93	.50	1.1	50	.90	.53	.05	.4
21	.74	.34	.16	.9	52	.86	.21	.33	-1.0
22	1.22	-1.17	.09	1.1	53	.56	.24	.23	.1
24	.78	.20	.21	-.2	54	1.28	-.27	.31	.2
25	.73	.69	.29	.1	55	1.45	.45	.28	.9
26	1.12	-1.56	.20	1.7	57	.25	-.75	.20	4.5
27	.73	-1.75	.20	.5	58	1.12	.80	.24	1.8
28	1.00	.13	.36	-.3	59	.88	-.62	.27	-.9
29	1.09	-.82	.19	1.6					

**Table 42. Item Parameter and Fit Summary,
Constructed-Response Items, Grade 10
Mathematics (N=4178)**

Item	f	g1	g2	g3	g4	Fit-Z
6	1.49	3.47	1.59			2.4
10	.93	-.82	-.45	.38		3.2
13	1.05	-1.50	1.24			13.3
17	.73	1.78	-1.37	1.08		2.2
20	1.54	2.12	2.86	3.45	4.29	-2.1
23	.20	2.02	2.48			12.2
30	.67	-.95	1.46	-.08		7.6
33	.78	1.22	.55			1.3
36	1.49	.99	2.03	1.83		-.1
40	.79	.83	.48	1.09	2.38	2.9
43	.62	2.71	-1.16			6.8
47	1.60	1.09	.99	1.75		.5
51	1.06	3.09	.00			.0
56	1.08	.77	1.22	-.31		2.2
60	1.09	-.99	1.73	2.19	2.41	1.4

Table 43. Overall Estimates of Standard Error of Measurement

Assessment	Standard Error Of Measurement
Grade 3 Reading	30.27
Grade 4 Reading	18.10
Grade 5 Reading	18.16
Grade 6 Reading	18.20
Grade 7 Reading	16.73
Grade 8 Reading	15.38
Grade 9 Reading	16.19
Grade 10 Reading	19.14
Grade 3 Spanish Reading	15.37
Grade 4 Spanish Reading	14.35
Grade 3 Writing	19.05
Grade 4 Writing	16.10
Grade 5 Writing	16.38
Grade 6 Writing	17.12
Grade 7 Writing	19.37
Grade 8 Writing	21.51
Grade 9 Writing	22.31
Grade 10 Writing	23.56
Grade 4 Spanish Writing	14.24
Grade 5 Mathematics	19.00
Grade 6 Mathematics	18.70
Grade 7 Mathematics	18.83
Grade 8 Mathematics	18.35
Grade 9 Mathematics	21.66
Grade 10 Mathematics	24.68
Grade 8 Science	15.14

Table 44. Scale Scores and Associated Standard Errors, Grade 3, Reading

Scale Score	Standard Error	Scale Score	Standard Error
150	228	485	19
213	165	491	19
280	98	497	19
312	66	502	19
334	50	508	19
350	41	514	20
363	36	520	20
374	32	526	20
384	29	533	21
393	27	539	22
401	26	547	22
408	24	554	23
415	23	562	24
422	23	571	25
428	22	580	26
435	21	591	28
441	21	602	30
446	20	616	32
452	20	631	35
458	20	649	39
463	19	673	46
469	19	705	56
474	19	761	83
480	19	795	106

Table 1. Multiple-Choice Item Analyses, Grade 5 Writing

Item #	Session	CS	SA	R_ITT	Omit %	p-Value	Item #	Session	CS	SA	R_ITT	Omit %	p-Value
47	S5	3	7	.41	.1	.66	69	S5	3	8	.41	1.9	.60
48	S5	3	7	.40	.2	.80	70	S5	3	8	.43	.4	.59
49	S5	3	7	.35	.2	.86	71	S5	3	8	.47	1.3	.70
50	S5	2	5	.27	.3	.35	72	S5	3	7	.39	.6	.74
51	S5	3	7	.28	.2	.97	73	S5	3	7	.47	.8	.88
52	S5	3	7	.28	.3	.92	74	S5	2	5	.41	.3	.77
53	S5	3	7	.21	.5	.58	75	S5	2	5	.35	.3	.61
54	S5	3	7	.36	.7	.69	76	S5	2	5	.49	.3	.79
55	S5	2		.52	.2	.57	77	S5	2	5	.43	.4	.68
56	S5	2		.36	.2	.75	78	S5	2	5	.46	.5	.64
58	S5	3	8	.37	.3	.78	79	S5	2	5	.33	.5	.56
59	S5	3	8	.29	.3	.86	80	S5	2	5	.26	.5	.47
60	S5	3	8	.29	.5	.91	81	S5	2	5	.43	.6	.67
61	S5	3	7	.28	.3	.39	82	S5	3	7	.40	.4	.63
62	S5	2	8	.32	.4	.63	83	S5	2	8	.46	3.1	.68
63	S5	3	7	.30	.4	.84	84	S5	2	8	.41	.6	.67
64	S5	3	7	.48	.5	.83	85	S5	2		.40	.8	.82
65	S5	3	7	.42	1.6	.87	86	S5	2		.40	1.1	.84
66	S5	3	8	.45	.3	.72	87	S5	2		.28	1.1	.38
67	S5	3	8	.50	.4	.66	88	S5	2		.36	1.3	.79
68	S5	3	8	.41	1.4	.60							

Mean R_ITT: .38

Mean p-value: .70

Table 2. Constructed-Response Item Analyses, Grade 5 Writing

Item #	Session	CS	SA	R_ITT	Percent of Students Obtaining Score Level					Omit %	p-Value	
					0	1	2	3	4			
1	S1	2	6	.06	.5	99.5					.0	1.00
2 A	S2	3	7	.36	58.7	40.2					1.1	.40
2 B	S2	3	8	.22	16.0	82.9					1.1	.83
2 C	S2	3	8	.44	13.0	85.8					1.1	.86
2 D	S2	3	7	.45	38.1	60.8					1.1	.61
2 E	S2	3	8	.20	66.7	32.2					1.1	.32
2 F	S2	3	8	.27	89.6	9.3					1.1	.09
3 A	S2	2	6	.56	2.6	6.4	39.7	38.0	13.3		.1	.63
3 B	S2	2	6	.65	.6	7.4	38.0	38.7	15.1		.1	.65
3 C	S2	3	6	.51	1.3	20.2	78.4				.1	.88
19	S3	2	5	.55	2.5	5.4	38.4	45.8	6.7		1.1	.62
57	S5	2	5	.54	3.8	8.9	39.4	41.7	5.6		.5	.59
89	S5	2	5	.57	4.9	11.5	39.2	36.8	6.5		1.1	.57

Mean R_ITT: .43

Mean p-value: .62

Table 3. Multiple-Choice Item Analyses, Grade 5 Mathematics

Item #	Session	CS	SA	R	ITT	Omit %	p-Value	Item #	Session	CS	SA	R	ITT	Omit %	p-Value
1	S1	2		.51	.2	.78		34	S2	1	1	.48	.6	.66	
2	S1	1	1	.33	.1	.92		35	S2	6		.38	.5	.75	
3	S1	6		.40	.2	.56		36	S2	3	3	.33	.2	.85	
4	S1	4/5		.38	.3	.68		38	S2	6		.31	.3	.83	
5	S1	6		.44	.6	.74		39	S2	3		.47	.2	.59	
7	S1	3		.38	.2	.79		40	S2	6		.31	.8	.67	
8	S1	1		.35	.3	.73		41	S2	2		.49	.3	.77	
9	S1	4/5		.36	.7	.62		43	S2	2	2	.38	.2	.80	
10	S1	6		.40	.8	.73		44	S2	1		.36	.3	.38	
12	S1	3		.44	.4	.78		47	S3	1		.31	.1	.81	
13	S1	2	2	.46	.6	.69		48	S3	4/5		.34	.1	.76	
14	S1	4/5		.25	.5	.47		49	S3	6		.50	.2	.69	
15	S1	4/5		.40	.3	.84		50	S3	4/5		.45	.3	.67	
16	S1	1		.45	.5	.50		52	S3	1	1	.40	.3	.62	
18	S1	3	3	.50	.4	.68		53	S3	2		.41	.3	.67	
19	S1	6		.41	.6	.56		54	S3	3	3	.52	.3	.87	
21	S1	1		.23	.6	.92		55	S3	4/5		.28	.3	.49	
22	S1	6		.36	.6	.80		56	S3	4/5		.28	.2	.64	
24	S2	1	1	.47	.1	.86		57	S3	6		.49	.6	.48	
25	S2	2		.45	.2	.79		59	S3	1	1	.51	.2	.75	
26	S2	2		.37	.1	.73		60	S3	6		.49	.2	.71	
27	S2	1	1	.53	.3	.71		62	S3	1	1	.33	.2	.56	
28	S2	4/5		.46	.2	.79		63	S3	6		.47	.2	.85	
30	S2	2	3	.40	.4	.82		64	S3	3		.47	.4	.84	
31	S2	6		.35	.7	.74		65	S3	4/5		.49	.3	.63	
32	S2	4/5		.21	.3	.75		67	S3	1		.48	.8	.76	
33	S2	1	1	.39	.3	.73		68	S3	6	1	.41	.4	.90	

Mean R_ITT: .41

Mean p-value: .72

Table 4. Constructed-Response Item Analyses, Grade 5 Mathematics

Item #	Session	CS	SA	R	ITT	Percent of Students Obtaining Score Level					Omit %	p-Value
						0	1	2	3	4		
6	S1	4/5		.57	.21.9	38.8	38.5				.8	.58
11	S1	3	3	.53	5.7	19.7	36.6	36.9			1.2	.68
17	S1	2		.50	49.1	7.7	42.7				.6	.46
20	S1	6	1	.57	9.2	16.3	25.0	48.7			.8	.71
23	S1	2	2	.65	41.8	5.5	10.8	5.7	34.4		1.8	.45
29	S2	2	2	.60	28.0	9.9	61.6				.5	.67
37	S2	2	2	.58	8.1	11.7	41.2	38.8			.2	.70
42	S2	1	1	.53	13.3	16.3	70.0				.5	.78
45	S2	4/5		.57	2.0	10.2	46.0	41.6			.2	.76
46	S2	3	3	.56	4.4	5.2	11.2	13.1	65.8		.3	.83
51	S3	3		.49	14.7	28.8	55.9				.6	.70
58	S3	1	1	.54	18.0	27.1	18.9	34.9			1.1	.57
61	S3	6		.56	55.7	7.3	36.4				.6	.40
66	S3	3	3	.56	15.8	25.7	31.6	26.3			.6	.56
69	S3	4/5		.55	3.8	24.1	22.8	37.9	11.1		.3	.57

Mean R_ITT: .56

Mean p-value: .63

Table 5. Multiple-Choice Item Analyses, Grade 6 Reading

Item #	Session	CS	SA	R	ITT	Omit %	p-Value	Item #	Session	CS	SA	R	ITT	Omit %	p-Value
4	S3	1	1/4	.15	.1	.89		47	S4	5		.22	1.4	.22	

5	S3	4	1/4	.34	.1	.88	92	S6	1	2	.30	.1	.57
6	S3	1	3	.40	4.1	.85	93	S6	5		.46	.4	.85
8	S3	5		.46	.4	.68	94	S6	5	2	.53	.1	.72
9	S3	5		.25	.2	.32	95	S6	1	1/4	.46	.1	.75
10	S3	5		.24	.3	.40	96	S6	1	1/4	.42	.3	.80
15	S3	1	3	.39	1.4	.91	97	S6	6	1/4	.52	.3	.89
16	S3	1	3	.52	1.6	.77	98	S6	4	1/4	.45	.7	.87
17	S3	1	1/4	.47	.9	.76	99	S6	5	1/4	.38	.2	.63
18	S3	5	1/4	.33	2.1	.63	100	S6	6	1/4	.40	.5	.72
19	S3	1	1/4	.46	1.0	.63	101	S6	1	1/4	.30	.5	.59
20	S3	1	1/4	.47	.9	.73	102	S6	6	1/4	.45	1.1	.70
21	S3	1	1/4	.39	1.1	.78	103	S6	5	1/4	.34	.2	.54
22	S3	4	1/4	.37	1.3	.68	104	S6	1	1/4	.44	.5	.63
23	S3	6	1/4	.23	1.5	.65	105	S6	1	3	.49	1.3	.67
24	S3	6	1/4	.26	1.6	.77	106	S6	1	3	.31	.5	.47
25	S3	4	1/4	.18	2.2	.25	107	S6	1	3	.06	.5	.39
28	S4	6	1/4	.25	.1	.46	108	S6	1	3	.11	.7	.32
29	S4	6	1/4	.41	.2	.70	109	S6	1	3	.45	1.0	.68
30	S4	5	1/4	.39	.1	.91	110	S6	5		.32	.6	.53
33	S4	4	2	.45	.7	.83	111	S6	5		.44	.9	.72
34	S4	4	2	.37	.2	.67	112	S6	5		.18	1.3	.39
35	S4	4	2	.48	.3	.76	113	S6	1	1/4	.51	.3	.68
39	S4	1	2	.44	1.2	.78	114	S6	1	1/4	.16	.4	.29
40	S4	4	2	.55	.4	.80	115	S6	1	1/4	.54	.8	.70
43	S4	1	2	.46	1.2	.87	116	S6	6	1/4	.46	.5	.64
44	S4	5	2	.48	1.0	.78	117	S6	4	1/4	.49	1.0	.64
45	S4	6	2	.46	1.1	.79	118	S6	1	1/4	.48	1.3	.64
46	S4	4	2	.47	1.3	.89							

Mean R_ITT: .39

Mean p-value: .67

Table 6. Constructed-Response Item Analyses, Grade 6 Reading

Item #	Session	CS	SA	R_ITT	Percent of Students Obtaining Score Level					Omit %	p-Value
					0	1	2	3	4		
7	S3	1	1/4	.43	8.4	30.3	60.2			1.0	.75
11	S3	5		.58	14.2	10.3	74.8			.7	.80
12	S3	5	2	.64	7.8	21.9	34.5	35.0		.8	.65
13	S3	1	2	.60	15.7	16.2	34.8	31.1		2.1	.60
14	S3	1	2	.65	9.5	13.1	16.8	58.3		2.3	.74
26	S3	1	1/4	.43	17.4	37.8	31.5	9.1		4.2	.43
27	S3	1	1/4	.53	11.1	8.5	18.2	58.1		4.1	.73
31	S4	6	1/4	.48	19.1	9.2	70.1			1.6	.75
32	S4	1	2	.48	31.1	50.0	17.7			1.2	.43
36	S4	1	2	.39	34.5	25.1	31.8	6.5		2.1	.36
37	S4	6	2	.41	16.3	69.8	11.7			2.1	.47
38	S4	6	2	.56	35.2	13.9	14.5	21.8	9.0	5.5	.36
41	S4	4	2	.54	23.7	22.6	51.1			2.6	.62
42	S4	5	2	.63	20.2	22.4	22.5	32.7		2.2	.55
119	S6	1	1/4	.52	12.6	17.6	67.3			2.5	.76
120	S6	4	1/4	.56	19.6	32.5	30.3	14.6		2.9	.46

Mean R_ITT: .53

Mean p-value: .59

Table 7. Multiple-Choice Item Analyses, Grade 6 Writing

Item #	Session	CS	SA	R ITT	Omit %	p-Value	Item #	Session	CS	SA	R ITT	Omit %	p-Value
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48	S5	3	7	.42	.1	.74	70	S5	3	7	.35	.3	.44
49	S5	3	7	.37	.1	.82	71	S5	2	8	.38	.4	.66
50	S5	3	7	.32	.1	.88	72	S5	3	7	.30	.4	.84
51	S5	2	5	.30	.2	.39	73	S5	3	7	.47	.5	.84
52	S5	3	7	.46	.3	.69	74	S5	3	7	.44	.6	.87
53	S5	3	7	.31	.4	.47	75	S5	2	5	.32	.3	.62
54	S5	3	7	.25	.8	.40	76	S5	2	5	.31	.3	.51
55	S5	3	7	.44	1.5	.66	77	S5	2	5	.48	.3	.69
56	S5	3	7	.47	2.2	.69	78	S5	2	5	.47	.4	.89
57	S5	3	7	.41	2.0	.64	79	S5	2	5	.51	.4	.66
58	S5	3	7	.38	.2	.65	80	S5	2	5	.37	.5	.75
59	S5	3	7	.26	.3	.61	81	S5	2	5	.50	.4	.81
60	S5	3	7	.40	.3	.72	82	S5	2	5	.48	.4	.75
61	S5	3	7	.26	1.9	.37	83	S5	2	5	.46	.6	.73
62	S5	2	5	.45	.2	.83	84	S5	3	8	.47	.5	.62
64	S5	3	8	.42	.3	.49	85	S5	3	8	.42	.9	.54
65	S5	3	8	.33	.4	.50	86	S5	3	8	.24	1.2	.31
66	S5	3	8	.23	.5	.30	87	S5	2		.33	.7	.47
67	S5	3	8	.38	1.1	.47	88	S5	2		.35	.7	.81
68	S5	3	8	.50	1.6	.63	89	S5	2	8	.53	1.0	.73
69	S5	3	8	.39	1.9	.80	90	S5	2	8	.46	1.2	.70

Mean R_ITT: .39

Mean p-value: .64

Table 8. Constructed-Response Item Analyses, Grade 6 Writing

Item #	Session	CS	SA	R ITT	Percent of Students Obtaining Score Level					Omit %	p-Value
					0	1	2	3	4		
1	S1	2	6	.09	.7	99.3				.0	.99
2 A	S2	3	7	.20	7.5	91.1				1.4	.91
2 B	S2	3	7	.31	6.5	92.2				1.4	.92
2 C	S2	3	8	.41	36.1	62.5				1.4	.63
2 D	S2	3	8	.45	33.8	64.9				1.4	.65
2 E	S2	3	8	.42	15.7	82.9				1.4	.83
2 F	S2	3	8	.47	67.3	31.4				1.4	.31
3 A	S2	2	6	.55	1.1	5.6	44.0	43.0	6.2	.1	.62
3 B	S2	2	6	.59	.4	8.1	50.6	35.3	5.6	.1	.59
3 C	S2	3	6	.47	.8	13.3	85.7			.1	.92
63	S5	2	5	.52	1.1	24.1	54.7	18.1	1.4	.7	.48
91	S5	2	5	.59	3.1	20.1	52.7	19.7	2.3	2.0	.48
121	S6	2	5	.62	6.0	22.7	49.6	17.1	1.4	3.1	.45

Mean R_ITT: .45

Mean p-value: .68

Table 9. Multiple-Choice Item Analyses, Grade 6 Mathematics

Item #	Session	CS	SA	R ITT	Omit %	p-Value	Item #	Session	CS	SA	R ITT	Omit %	p-Value
1	S1	6		.33	.2	.69	31	S2	2		.40	.3	.80

2	S1	1	.30	.1	.94	32	S2	6	.46	1.2	.76		
3	S1	3	.36	.2	.79	33	S2	3	.41	.4	.52		
4	S1	4/5	.39	.2	.71	35	S2	4/5	.46	.2	.83		
6	S1	4/5	3	.39	.9	.67	36	S2	3	.44	.5	.78	
7	S1	6	.42	.5	.80	37	S2	3	.50	.4	.65		
8	S1	2	.45	.3	.77	39	S2	2	2	.33	.2	.83	
9	S1	1	1	.54	.4	.62	41	S3	6	.50	.2	.57	
11	S1	2	2	.44	.9	.80	42	S3	6	.38	.3	.73	
12	S1	6	.49	.2	.81	43	S3	1	.38	.4	.45		
14	S1	6	.46	.3	.67	45	S3	4/5	.40	.3	.71		
15	S1	2	2	.44	.4	.34	46	S3	1	.40	.3	.66	
16	S1	4/5	3	.29	.4	.48	47	S3	4/5	.38	.3	.56	
18	S1	1	1	.42	.6	.81	48	S3	1	1	.36	.3	.68
19	S1	3	.49	.4	.76	49	S3	4/5	3	.37	.6	.59	
21	S2	1	.39	.2	.69	51	S3	1	1	.34	.3	.68	
22	S2	1	.44	.2	.61	53	S3	2	2	.43	.5	.71	
23	S2	4/5	3	.36	.3	.57	54	S3	2	.42	.4	.86	
24	S2	4/5	.39	.2	.66	55	S3	6	1	.40	.0	.70	
26	S2	3	.37	.3	.81	56	S3	4/5	.55	.0	.67		
27	S2	1	.37	.3	.79	58	S3	4/5	.49	.0	.67		
28	S2	3	.33	.6	.50	59	S3	4/5	.38	.0	.78		
29	S2	6	1	.40	1.0	.30							

Mean R_ITT: .41

Mean p-value: .68

Table 10. Constructed-Response Item Analyses, Grade 6 Mathematics

Item #	Session	CS	SA	R ITT	Percent of Students Obtaining Score Level					Omit %	p-Value
					0	1	2	3	4		
5	S1	4/5	3	.57	23.7	36.3	38.9			1.1	.57
10	S1	3	.57	4.1	18.6	28.8	47.5			1.0	.73
13	S1	6	1	.58	4.5	38.6	19.8			1.1	.39
17	S1	1	.58	39.4	34.6	2.0	20.9			3.1	.34
20	S1	2	2	.55	2.1	6.3	13.3	18.8	59.0	.5	.81
25	S2	3	.37	.8	23.1	75.8				.3	.87
30	S2	4/5	3	.54	7.8	17.6	35.2	38.6		.8	.68
34	S2	4/5	.50	15.1	43.9	40.5				.4	.63
38	S2	2	.58	34.7	42.9	6.2	15.5			.8	.34
40	S2	3	.66	2.2	10.4	25.4	22.4	39.0		.5	.71
44	S3	3	.45	8.9	26.8	63.6				.7	.77
50	S3	4/5	3	.53	1.6	10.5	44.6	42.9		.4	.76
52	S3	6	.57	43.7	8.4	47.1				.7	.51
57	S3	2	2	.37	1.0	55.9	5.3	28.4		.5	.51
60	S3	1	1	.70	25.5	27.7	19.4	14.6	12.3	.5	.40

Mean R_ITT: .55

Mean p-value: .60

Table 11. Multiple-Choice Item Analyses, Grade 7 Reading

Item #	Session	CS	SA	R ITT	Omit %	p-Value	Item #	Session	CS	SA	R ITT	Omit %	p-Value
4	S3	4	2	.25	.2	.79	43	S4	1	1	.40	.1	.60
5	S3	5	2	.35	.5	.92	44	S4	6	1	.50	.1	.86

6	S3	4	2	.42	.3	.65	45	S4	4	1	.38	.3	.46
7	S3	4	2	.33	.3	.81	46	S4	1	1	.45	.3	.90
8	S3	5	2	.33	.2	.94	48	S4	1	2	.28	.2	.61
9	S3	6	1	.35	.1	.96	49	S4	4	2	.52	.4	.86
10	S3	1	1	.40	.1	.84	50	S4	4	2	.56	.6	.75
11	S3	6	1	.35	.2	.74	51	S4	5		.44	.3	.60
12	S3	4	1	.35	.3	.89	52	S4	5		.36	.3	.58
13	S3	1	3	.41	.2	.92	53	S4	5		.46	.4	.58
15	S3	5		.51	.4	.76	54	S4	5		.21	.6	.58
16	S3	5		.30	.2	.37	95	S6	1	2	.33	.1	.55
17	S3	5		.29	1.5	.43	96	S6	5		.46	.4	.86
18	S3	5		.55	.2	.83	97	S6	5	2	.52	.1	.73
19	S3	6	4	.22	.2	.42	98	S6	4	2	.46	.2	.78
20	S3	4	4	.43	.3	.60	99	S6	4	2	.40	.1	.92
21	S3	5		.51	2.6	.71	100	S6	5		.42	.1	.95
22	S3	5		.34	3.8	.74	104	S6	1	3	.14	.9	.36
25	S3	1	3	.50	.5	.87	105	S6	1	3	.09	.8	.45
26	S3	1	3	.26	.7	.39	106	S6	1	3	.33	1.3	.52
27	S3	1	3	.33	.8	.50	107	S6	1	3	.38	1.2	.57
34	S4	6	4	.30	.1	.91	108	S6	6	4	.31	.4	.54
35	S4	4	4	.40	.2	.92	109	S6	6	4	.32	.6	.51
36	S4	6	4	.41	.3	.66	110	S6	1	2	.53	.3	.90
37	S4	6	4	.24	.6	.34	111	S6	1	2	.56	.4	.79
38	S4	1	2	.34	.1	.86	112	S6	1	2	.44	.7	.71
39	S4	1	2	.40	.1	.86	113	S6	5		.41	1.6	.83
40	S4	4	2	.40	.2	.69	114	S6	6	1	.50	.4	.71
41	S4	1	2	.45	.2	.93	115	S6	4	1	.54	.6	.75
42	S4	4	2	.42	.3	.74	118	S6	5		.38	.8	.60

Mean R_ITT: .39

Mean p-value: .71

Table 12. Constructed-Response Item Analyses, Grade 7 Reading

Item #	Session	CS	SA	R ITT	Percent of Students Obtaining Score Level					Omit %	p-Value
					0	1	2	3	4		
14	S3	1	1	.44	7.0	28.4	62.9			1.7	.77
23	S3	6	4	.51	19.5	21.6	27.4	26.8		4.7	.52
24	S3	6	4	.52	19.5	26.4	49.1			5.0	.62
28	S3	5		.61	13.6	9.7	74.3			2.3	.79
29	S3	5	2	.67	7.2	18.0	31.9	40.0		2.9	.67
30	S3	6	2	.56	31.1	60.7	3.2			5.0	.34
31	S3	1	2	.65	9.7	10.2	32.8	42.0		5.4	.67
32	S3	4	2	.49	8.9	24.2	60.9			5.9	.73
33	S3	1	2	.66	7.7	9.9	13.3	60.7		8.4	.73
47	S4	1	2	.51	9.9	49.0	14.2	23.9		3.0	.50
101	S6	1	2	.61	19.1	14.2	22.5	39.7		4.5	.59
102	S6	5	2	.54	2.5	26.8	67.9			2.7	.81
103	S6	5	2	.56	22.9	11.2	19.4	37.6		8.9	.54
116	S6	1	1	.51	7.2	10.4	79.3			3.1	.84
117	S6	4	1	.56	11.1	29.5	33.2	21.2		5.0	.53

Mean R_ITT: .56

Mean p-value: .64

Table 13. Multiple-Choice Item Analyses, Grade 7 Writing

Item #	Session	CS	SA	R ITT	Omit %	p-Value	Item #	Session	CS	SA	R ITT	Omit %	p-Value
55	S5	3	7	.39	.2	.81	75	S5	3	8	.40	.3	.75

56	S5	3	7	.45	.2	.75	76	S5	3	8	.37	.4	.56
57	S5	3	7	.42	1.1	.76	77	S5	3	8	.38	.4	.80
58	S5	3	7	.20	1.8	.41	78	S5	3	8	.22	1.0	.65
59	S5	3	7	.28	2.5	.44	79	S5	3	8	.29	1.0	.95
60	S5	3	8	.19	.2	.48	80	S5	3	8	.30	1.2	.88
61	S5	2	5	.38	.2	.87	81	S5	2	5	.46	.2	.74
62	S5	3	7	.29	.4	.52	82	S5	2	5	.44	.2	.90
63	S5	3	7	.31	.5	.67	83	S5	2	5	.45	2.1	.77
64	S5	2	5	.42	.2	.90	84	S5	3	8	.40	.3	.69
65	S5	2	8	.28	.3	.45	85	S5	3	8	.27	.5	.37
66	S5	3	7	.37	.5	.67	86	S5	2	8	.49	2.9	.80
67	S5	2		.10	1.1	.29	87	S5	2		.40	.3	.73
69	S5	3	8	.44	.2	.59	88	S5	2		.47	.3	.83
70	S5	3	8	.38	.3	.55	89	S5	2		.41	.3	.52
71	S5	3	8	.25	.4	.35	90	S5	2		.40	.2	.88
72	S5	3	8	.42	.3	.53	91	S5	2		.45	.3	.68
73	S5	3	8	.50	.7	.72	92	S5	2		.41	.4	.52
74	S5	3	8	.40	.8	.85	93	S5	2		.27	.4	.31

Mean R_ITT: .36

Mean p-value: .66

Table 14. Constructed-Response Item Analyses, Grade 7 Writing

Item #	Session	CS	SA	R ITT	Percent of Students Obtaining Score Level					Omit %	p-Value
					0	1	2	3	4		
1	S1	2	6	.11	1.2	98.8				.0	.99
2 A	S2	3	8	.32	61.1	37.2				1.6	.37
2 B	S2	3	8	.28	56.1	42.2				1.6	.42
2 C	S2	3	8	.31	64.0	34.4				1.6	.34
2 D	S2	3	7	.46	56.9	41.5				1.6	.41
2 E	S2	3	8	.28	32.9	65.5				1.6	.65
2 F	S2	3	7	.19	66.2	32.2				1.6	.32
3 A	S2	2	6	.52	2.5	5.9	48.4	35.2	7.7	.2	.60
3 B	S2	2	6	.58	.5	6.5	46.4	37.9	8.4	.2	.62
3 C	S2	3	6	.45	.6	11.3	87.8			.2	.93
68	S5	2	5	.54	.4	1.2	51.1	35.3	2.2	.9	.57
94	S5	2	5	.62	1.9	11.6	44.3	35.6	4.1	2.5	.56
119	S6	2	5	.57	1.5	20.3	44.3	26.9	2.8	4.1	.50

Mean R_ITT: .42

Mean p-value: .56

Table 15. Multiple-Choice Item Analyses, Grade 7 Mathematics

Item #	Session	CS	SA	R ITT	Omit %	p-Value	Item #	Session	CS	SA	R ITT	Omit %	p-Value
1	S1	3		.30	.1	.83	31	S2	1/6	1	.50	.5	.37
2	S1	4/5		.40	.3	.62	32	S2	2		.43	.3	.79

3	S1	1/6	1	.54	.5	.58	33	S2	4/5	.42	.3	.54	
4	S1	4/5		.09	.2	.51	35	S2	4/5	.37	.3	.62	
5	S1	1/6		.30	.4	.76	37	S2	2	.37	.5	.89	
7	S1	1/6		.29	.2	.92	38	S2	4/5	.17	.4	.92	
8	S1	3		.35	.5	.57	39	S2	3	1	.59	.4	.61
9	S1	3		.26	.2	.93	41	S3	4/5	.50	.2	.70	
11	S1	1/6		.41	1.8	.83	43	S3	1/6	.32	.5	.75	
12	S1	4/5		.34	.3	.76	44	S3	4/5	.38	.5	.75	
13	S1	1/6		.34	.5	.44	45	S3	2	.49	.4	.42	
15	S1	3		.31	.7	.40	47	S3	1/6	.33	.3	.73	
16	S1	2		.46	.6	.39	48	S3	4/5	.38	.4	.62	
18	S1	2	2	.28	.4	.83	49	S3	1/6	1	.35	.3	.71
19	S1	4/5		.46	.8	.52	51	S3	2	.47	.5	.61	
21	S2	1/6		.40	.4	.72	52	S3	1/6	1	.43	.6	.60
22	S2	1/6		.34	.4	.72	53	S3	1/6		.53	1.4	.64
24	S2	2		.42	.5	.69	55	S3	2	.47	.4	.78	
25	S2	2		.26	.2	.55	56	S3	3	.47	.7	.63	
26	S2	1/6		.40	.3	.63	57	S3	3	.29	.4	.53	
27	S2	4/5	2	.42	.5	.68	58	S3	4/5	2	.33	.5	.36
28	S2	3		.40	.5	.56	59	S3	3	.42	.4	.58	
30	S2	1/6		.33	.8	.87							

Mean R_ITT: .38

Mean p-value: .66

Table 16. Constructed-Response Item Analyses, Grade 7 Mathematics

Item #	Session	CS	SA	R ITT	Percent of Students Obtaining Score Level					Omit %	p-Value
					0	1	2	3	4		
6	S1	4/5	2	.58	37.1	16.1	16.3	23.7		6.8	.40
10	S1	1/6	1	.64	63.7	17.3	14.3			4.8	.23
14	S1	2		.48	38.0	17.8	20.6	21.4		2.2	.41
17	S1	4/5		.61	26.3	26.9	44.1			2.7	.58
20	S1	3		.51	33.4	8.7	10.0	26.8	18.5	2.6	.46
23	S2	3		.30	.5	15.3	83.7			.6	.91
29	S2	4/5	2	.56	63.3	13.5	10.4	7.2		5.7	.19
34	S2	3		.63	25.6	30.7	23.2	17.0		3.5	.43
36	S2	4/5		.49	12.5	44.8	41.9			.8	.64
40	S2	1/6	1	.68	52.8	14.3	11.9	8.6	9.6	2.8	.26
42	S3	2		.59	50.3	19.8	28.3			1.6	.38
46	S3	2		.62	32.4	40.0	7.1	19.6		.8	.38
50	S3	1/6	1	.38	22.7	24.3	51.5			1.5	.64
54	S3	1/6	1	.70	38.1	18.1	11.3	29.3		3.2	.43
60	S3	4/5	2	.64	59.1	16.4	10.2	7.9	3.8	2.6	.19

Mean R_ITT: .57

Mean p-value: .43

Table 17. Multiple-Choice Item Analyses, Grade 8 Reading

Item #	Session	CS	SA	R ITT	Omit %	p-Value	Item #	Session	CS	SA	R ITT	Omit %	p-Value
4	S3	6	1	.21	.1	.66	41	S4	1	1	.44	.4	.92
5	S3	6	1	.24	.2	.53	43	S4	1	2	.31	.3	.65
6	S3	6	1	.43	.1	.86	44	S4	1	3	.48	.2	.78

8	S3	6	1	.42	.1	.78	45	S4	4	2	.46	.4	.89
10	S3	5		.39	.2	.76	46	S4	4	2	.53	1.1	.87
11	S3	5		.24	.3	.43	47	S4	4	2	.56	1.8	.79
12	S3	5		.32	.3	.50	48	S4	5		.47	.5	.69
13	S3	1	2	.37	.5	.93	49	S4	5		.36	.4	.62
14	S3	1	2	.44	.5	.92	50	S4	5		.46	.6	.64
15	S3	4	2	.43	.6	.93	51	S4	5		.16	.9	.54
16	S3	5		.36	.2	.47	52	S4	1	3	.31	1.0	.38
18	S3	1	3	.44	.2	.72	95	S6	1	2	.30	.1	.71
19	S3	1	3	.45	.3	.54	96	S6	1	2	.44	.2	.84
20	S3	6	4	.50	.2	.85	97	S6	1	2	.49	.2	.74
21	S3	4	4	.45	.3	.79	98	S6	1	3	.45	.5	.91
22	S3	6	4	.49	.3	.82	102	S6	5		.44	.3	.91
24	S3	4	4	.49	.2	.87	103	S6	6	4	.43	.1	.83
25	S3	4	4	.28	.2	.72	104	S6	6	4	.24	1.4	.60
26	S3	6	4	.35	.2	.80	107	S6	4	2	.42	.2	.53
29	S4	6	1	.43	.1	.90	108	S6	4	2	.33	.3	.53
30	S4	4	1	.40	.1	.94	109	S6	1	3	.20	.6	.37
31	S4	1	3	.49	.2	.92	110	S6	5	2	.46	.3	.82
34	S4	1	2	.34	.1	.90	111	S6	5	2	.41	.4	.71
35	S4	1	2	.41	.1	.89	113	S6	1	3	.35	.3	.48
36	S4	1	2	.43	.1	.95	114	S6	1	3	.03	.4	.18
37	S4	4	2	.40	1.0	.83	115	S6	1	2	.51	.3	.91
38	S4	1	1	.39	.2	.63	116	S6	1	2	.56	.3	.84
39	S4	6	1	.51	.1	.89	117	S6	1	2	.46	.5	.77
40	S4	4	1	.42	.3	.53	118	S6	5		.41	.6	.88

Mean R_ITT: .40
Mean p-value: .73

Table 18. Constructed-Response Item Analyses, Grade 8 Reading

Item #	Session	CS	SA	R ITT	Percent of Students Obtaining Score Level					Omit %	p-Value
					0	1	2	3	4		
7	S3	6	1	.37	36.3	46.2	13.1			4.4	.36
9	S3	6	1	.64	18.8	34.4	43.8			3.1	.61
17	S3	1	2	.52	37.6	28.0	32.8			1.7	.47
23	S3	1	4	.58	19.7	13.2	66.6			.5	.73
28	S4	1	1	.60	25.9	24.4	47.1			2.6	.59
32	S4	5	1	.51	13.9	25.7	59.0			1.3	.72
33	S4	6	1	.51	19.4	17.7	26.9	33.7		2.3	.58
42	S4	1	2	.55	12.0	36.1	16.2	32.8		2.9	.56
99	S6	4	2	.44	12.4	31.7	54.5			1.3	.70
100	S6	1	2	.53	5.7	18.3	74.0			2.0	.83
101	S6	4	2	.52	7.4	50.6	38.7			3.3	.64
105	S6	6	4	.43	26.6	37.3	33.1			3.0	.52
106	S6	6	4	.45	40.0	31.3	21.4			7.4	.37
112	S6	5		.52	50.3	26.5	20.4			2.9	.34

Mean R_ITT: .51
Mean p-value: .57

Table 19. Multiple-Choice Item Analyses, Grade 8 Writing

Item #	Session	CS	SA	R ITT	Omit %	p-Value	Item #	Session	CS	SA	R ITT	Omit %	p-Value
53	S5	3	8	.39	.1	.73	74	S5	2	5	.35	.4	.71
54	S5	3	8	.18	.1	.45	75	S5	2	8	.42	.3	.69

55	S5	3	7	.01	.2	.29	76	S5	3	7	.44	.5	.88
56	S5	3	7	.29	.1	.66	77	S5	3	7	.48	.2	.67
57	S5	3	7	.23	1.0	.31	78	S5	3	7	.28	.7	.80
58	S5	2		.36	.8	.69	79	S5	3	7	.47	.3	.79
59	S5	2		.12	.9	.36	80	S5	2	5	.46	.3	.90
60	S5	3	7	.53	.1	.77	81	S5	2	5	.51	.4	.70
61	S5	2	8	.47	.2	.86	82	S5	2	5	.33	.5	.57
62	S5	3	7	.46	.6	.80	83	S5	2	5	.18	.3	.53
63	S5	2	5	.32	.5	.72	84	S5	2	5	.34	.3	.58
65	S5	3	7	.37	.1	.92	85	S5	3	8	.40	.3	.82
66	S5	2	5	.40	.2	.88	86	S5	3	8	.31	.4	.56
67	S5	2	8	.47	.3	.70	87	S5	3	8	.38	.6	.78
68	S5	3	7	.56	.2	.85	88	S5	3	8	.23	.4	.70
69	S5	3	7	.48	.4	.90	89	S5	3	8	.33	.7	.96
70	S5	2	5	.26	1.3	.50	90	S5	3	8	.36	.6	.89
71	S5	3	7	.52	.2	.80	91	S5	2		.40	.3	.76
72	S5	3	7	.50	2.2	.79	92	S5	2		.50	.3	.87
73	S5	3	7	.56	.2	.80	93	S5	2		.44	.4	.62

Mean R_ITT: .38

Mean p-value: .71

Table 20. Constructed-Response Item Analyses, Grade 8 Writing

Item #	Session	CS	SA	R_ITT	Percent of Students Obtaining Score Level					Omit %	p-Value
					0	1	2	3	4		
1	S1	2	6	.15	1.1	98.9				.0	.99
2 A	S2	3	8	.38	34.6	64.0				1.5	.64
2 B	S2	3	8	.32	16.0	82.5				1.5	.82
2 C	S2	3	8	.37	8.7	89.9				1.5	.90
2 D	S2	3	8	.38	20.0	78.5				1.5	.79
2 E	S2	3	8	.35	54.3	44.2				1.5	.44
2 F	S2	3	7	.23	66.5	32.0				1.5	.32
3 A	S2	2	6	.57	2.1	3.9	23.5	55.6	14.6	.3	.69
3 B	S2	2	6	.63	.2	4.0	25.5	56.7	13.3	.3	.70
3 C	S2	3	6	.48	.3	7.5	91.9			.3	.96
27	S3	2	5	.60	.3	8.8	48.2	34.4	7.1	1.2	.59
64	S5	2	5	.61	.5	10.1	48.8	33.9	6.0	.8	.58
94	S5	2	5	.58	.3	10.5	52.5	30.6	4.7	1.4	.57

Mean R_ITT: .45

Mean p-value: .69

Table 21. Multiple-Choice Item Analyses, Grade 8 Mathematics

Item #	Session	CS	SA	R_ITT	Omit %	p-Value	Item #	Session	CS	SA	R_ITT	Omit %	p-Value
1	S1	2		.37	.3	.66	32	S2	4/5	3	.16	.3	.94
2	S1	3		-.03	.4	.28	33	S2	1/6		.46	.6	.55

3	S1	4/5	2	.09	.2	.53	35	S2	3	2	.50	1.0	.64
4	S1	1/6		.43	.3	.72	36	S2	4/5	2	.35	.4	.66
6	S1	1/6		.54	.5	.51	37	S2	2	1	.31	.5	.81
7	S1	3		.50	.3	.63	38	S2	1/6		.48	.5	.36
8	S1	2		.16	.2	.59	39	S2	3		.17	.9	.14
9	S1	1/6		.33	.6	.62	41	S3	2	2	.33	.2	.28
10	S1	3		.46	.9	.52	42	S3	2	2	.18	.3	.71
12	S1	1/6		.38	.9	.86	43	S3	1/6		.40	.7	.43
13	S1	2	1	.53	.6	.66	44	S3	4/5	2	.43	.3	.57
14	S1	4/5	3	.35	.3	.71	45	S3	4/5		.42	.3	.50
15	S1	4/5		.49	.4	.62	47	S3	3		.37	.4	.83
18	S1	4/5		.34	.5	.80	48	S3	1/6		.49	.6	.66
19	S1	2		.40	.6	.55	50	S3	4/5		.51	.3	.27
21	S2	4/5	3	.34	.1	.86	51	S3	2	1	.50	.3	.70
22	S2	2	1	.16	.2	.36	54	S3	1/6	2	.45	.3	.74
24	S2	4/5		.46	.4	.49	55	S3	4/5	3	.41	.4	.64
25	S2	1/6	2	.35	.5	.64	56	S3	3		.24	.3	.56
26	S2	2		.41	.4	.77	57	S3	2	1	.52	.4	.47
29	S2	3		.39	.7	.63	58	S3	3		.39	.3	.62
30	S2	4/5	3	.44	.3	.62	59	S3	4/5	3	.32	.5	.66
31	S2	1/6		.51	.6	.59							

Mean R_ITT (item 2 excluded): .38

Mean p-value (item 2 excluded): .59

Table 22. Constructed-Response Item Analyses, Grade 8 Mathematics

Item #	Session	CS	SA	R ITT	Percent of Students Obtaining Score Level					Omit %	p-Value
					0	1	2	3	4		
5	S1	4/5	3	.60	29.6	15.5	20.0	27.2		7.7	.46
11	S1	1/6		.70	53.0	20.5	21.8			4.8	.32
16	S1	2	1	.52	31.1	21.3	20.5	25.1		1.9	.46
17	S1	4/5		.57	21.4	26.7	50.3			1.6	.64
20	S1	2	1	.54	2.5	3.4	37.5	21.8	6.8	1.0	.50
23	S2	2	1	.34	33.3	54.1	5.8			6.7	.33
27	S2	4/5	3	.62	26.1	42.1	20.5	8.7		2.7	.36
28	S2	3		.36	89.7	5.0	3.3			2.1	.06
34	S2	3		.65	20.1	28.0	26.2	23.4		2.3	.50
40	S2	1/6		.71	44.6	18.0	11.7	11.2	11.4	2.9	.30
46	S3	2	1	.57	44.8	18.0	35.8			1.4	.45
49	S3	1/6		.66	65.7	10.9	6.4	13.8		3.2	.22
52	S3	1/6		.40	20.9	26.5	51.1			1.5	.64
53	S3	3	2	.69	43.6	20.2	17.1	16.0		3.2	.34
60	S3	4/5		.68	20.6	13.0	21.8	18.5	24.5	1.5	.53

Mean R_ITT: .58

Mean p-value: .41

Table 23. Multiple-Choice Item Analyses, Grade 8 Science

Item #	Session	CS	SA	R ITT	Omit %	p-Value	Item #	Session	CS	SA	R ITT	Omit %	p-Value
1	S1	3		.19	.1	.44	46	S2	2	3	.30	.7	.64
2	S1	3		.38	.1	.80	47	S2	4	5	.49	.2	.70
3	S1	3		.22	.1	.31	48	S2	4		.41	.2	.61

4	S1	3		.18	.2	.45	49	S2	4	5	.42	.2	.54
5	S1	3		.24	.1	.64	50	S2	5/6		.41	.2	.92
6	S1	1	2	.27	.1	.46	51	S2	3		.35	.2	.54
8	S1	2	4	.26	.2	.46	54	S2	1	2	.56	.5	.80
9	S1	4	5	.31	.2	.61	55	S2	1	1	.36	3.4	.85
10	S1	2	3	.41	.2	.59	56	S3	3		.37	.1	.69
11	S1	2	3	.40	.1	.70	57	S3	3		.29	.1	.53
12	S1	4		.30	.2	.70	58	S3	3		.31	.2	.76
13	S1	4		.43	.2	.71	60	S3	3		.52	.2	.68
14	S1	4	5	.32	.1	.56	61	S3	2	4	.34	.6	.80
15	S1	4	5	.41	.3	.48	62	S3	5/6		.32	.1	.75
16	S1	4	5	.35	.3	.54	63	S3	4	5	.30	.2	.84
17	S1	2	4	.25	.2	.69	64	S3	2	4	.18	.3	.33
18	S1	5/6		.30	.2	.55	65	S3	2	3	.35	.2	.80
26	S2	1	1	.25	.2	.67	66	S3	4	5	.32	.8	.69
27	S2	1	2	.47	.7	.71	69	S3	4		.38	.2	.75
28	S2	1	2	.43	.4	.70	70	S3	4	5	.35	.4	.59
30	S2	3		.41	.3	.40	72	S3	4	5	.49	.4	.80
31	S2	2	3	.27	.2	.80	73	S3	5/6		.33	4.5	.62
32	S2	4	5	.40	.5	.42	74	S3	5/6		.43	.3	.58
33	S2	3		.36	.4	.86	76	S3	2	4	.48	.3	.74
35	S2	2	3	.30	.2	.77	77	S3	1	1	.39	.1	.80
38	S2	2	4	.43	.5	.82	78	S3	5/6		.52	.1	.75
39	S2	2	4	.28	.2	.47	79	S3	1	2	.34	.2	.87
40	S2	2	3	.45	.3	.71	80	S3	2	3	.41	.1	.79
41	S2	2	3	.45	.5	.60	81	S3	1	1	.38	.1	.74
42	S2	3		.47	.2	.77	83	S3	1	2	.39	.2	.81
44	S2	1	2	.54	.2	.71	84	S3	1	2	.39	.4	.85
45	S2	4	5	.37	.3	.48							

Mean R_ITT: .37
Mean p-value: .66

Table 24. Constructed-Response Item Analyses, Grade 8 Science

Item #	Session	CS	SA	R ITT	Percent of Students Obtaining Score Level					Omit %	p-Value
					0	1	2	3	4		
7	S1	2	4	.47	29.2	64.8	4.2			1.8	.37
19	S1	1	1	.36	23.0	76.2				.7	.76

20	S1	1	2	.49	6.6	7.0	13.5	34.2	37.7	1.0	.72
21	S1	1	2	.39	39.6	21.2	37.5			1.8	.48
22	S1	1	1	.37	31.1	67.0				1.9	.67
23	S1	1	2	.37	29.9	68.4				1.7	.68
24	S1	1	1	.34	49.3	48.0				2.7	.48
25	S2	5/6		.42	10.0	53.0	35.7			1.3	.62
29	S2	1	2	.41	37.0	61.3				1.7	.61
34	S2	4		.23	89.2	7.8				3.0	.08
36	S2	2	3	.44	75.8	22.6				1.6	.23
37	S2	3		.46	8.1	30.9	59.4			1.6	.75
43	S2	3		.51	20.7	55.1	22.6			1.6	.50
52	S2	3		.57	22.1	37.4	39.1			1.4	.58
53	S2	3		.17	91.5	7.2				1.3	.07
59	S3	3		.43	27.3	11.2	60.3			1.2	.66
67	S3	1	1	.32	39.6	58.8				1.6	.59
68	S3	1	1	.60	15.1	9.4	33.1	40.2		2.2	.65
71	S3	4	5	.56	10.0	58.1	19.5	11.5		.9	.44
75	S3	2	4	.29	83.3	10.4				6.2	.10
82	S3	5/6		.25	88.7	7.6				3.8	.08

Mean R_ITT: .40

Mean p-value: .48

Table 25. Multiple-Choice Item Analyses, Grade 9 Reading

Item #	Session	CS	SA	R ITT	Omit %	p-Value	Item #	Session	CS	SA	R ITT	Omit %	p-Value
4	S3	1	1	.43	.4	.81	38	S4	1	1	.43	.1	.89
5	S3	6	1	.22	1.8	.52	39	S4	4	1	.40	.2	.78
6	S3	5	1	.39	3.0	.74	40	S4	6	1	.46	.2	.67
7	S3	6	1	.42	.2	.75	41	S4	6	4	.45	.2	.72

8	S3	4	1	.48	.5	.71	42	S4	6	4	.42	.2	.69
9	S3	6	1	.47	.2	.70	43	S4	1	3	.27	.2	.73
10	S3	5	1	.31	.1	.53	44	S4	4	4	.46	.3	.69
11	S3	5	1	.47	.5	.78	47	S4	1	2	.42	1.0	.72
12	S3	5	1	.37	1.2	.81	49	S4	1	3	.55	1.1	.82
13	S3	1	2	.34	.3	.94	50	S4	5		.37	2.2	.82
14	S3	1	2	.50	.3	.82	96	S6	4	2	.47	.1	.59
15	S3	1	2	.46	.4	.92	97	S6	4	2	.38	.1	.59
16	S3	4	2	.44	.6	.93	98	S6	1	3	.27	.3	.40
17	S3	5		.39	.3	.46	99	S6	4	2	.36	.6	.66
19	S3	1	3	.50	.3	.61	100	S6	5	2	.45	.3	.86
20	S3	1	3	.22	.3	.47	101	S6	5	2	.33	.5	.64
21	S3	5		.43	.3	.80	103	S6	5		.57	.2	.85
22	S3	5		.36	.7	.63	104	S6	5		.37	.3	.87
23	S3	5		.29	.4	.56	105	S6	1	4	.47	.1	.81
24	S3	5		.49	.3	.68	106	S6	6	4	.31	.1	.57
25	S3	5		.30	.6	.60	107	S6	6	4	.35	.2	.62
26	S3	6	4	.54	.3	.85	108	S6	1	3	.52	.2	.74
27	S3	6	4	.48	.4	.84	110	S6	1	3	.25	.3	.55
29	S3	4	4	.33	.5	.74	111	S6	1	3	.40	.4	.64
30	S3	6	4	.37	.7	.80	112	S6	6	1	.36	.2	.66
33	S4	6	1	.44	.3	.91	113	S6	6	1	.47	.2	.61
36	S4	6	1	.40	.3	.90	117	S6	1	3	.17	.4	.32
37	S4	1	1	.49	.1	.90	118	S6	1	3	.15	.4	.24

Mean R_ITT: .40
Mean p-value: .70

Table 26. Constructed-Response Item Analyses, Grade 9 Reading

Item #	Session	CS	SA	R ITT	Percent of Students Obtaining Score Level					Omit %	p-Value
					0	1	2	3	4		
18	S3	1	2	.56	27.8	26.3	43.6			2.2	.57
28	S3	1	4	.59	19.0	13.9	66.2			.8	.73
32	S4	1	1	.61	21.4	20.5	55.4			2.7	.66
34	S4	5	1	.53	9.7	15.4	73.1			1.8	.81
35	S4	6	1	.52	12.8	15.4	28.2	40.8		2.9	.65
45	S4	6	4	.49	24.0	44.8	24.2			7.1	.47
46	S4	4	4	.55	35.2	29.2	25.4			1.3	.40
48	S4	4	2	.47	17.2	35.7	31.9	9.4		5.9	.43
51	S4	4	2	.61	18.6	40.8	30.6			1.0	.51
52	S4	1	2	.59	13.4	8.7	39.0	28.8		1.0	.58
102	S6	5		.56	40.8	28.7	27.1			3.4	.41
109	S6	4	4	.56	28.5	23.7	27.7	14.8		5.4	.41
114	S6	6	1	.69	12.5	20.1	24.2	34.7		8.4	.58
115	S6	6	1	.62	15.0	23.5	53.0			8.5	.65
116	S6	1	1	.47	4.4	7.3	38.8	.1	48.5	.9	.70

Mean R_ITT: .57
Mean p-value: .57

Table 27. Multiple-Choice Item Analyses, Grade 9 Writing

Item #	Session	CS	SA	R ITT	Omit %	p-Value	Item #	Session	CS	SA	R ITT	Omit %	p-Value
53	S5	2		.40	.1	.58	75	S5	3	7	.51	.4	.82
54	S5	3	8	.39	.1	.75	76	S5	2	8	.50	.3	.73
55	S5	3	7	.07	.2	.33	77	S5	3	7	.38	.3	.58
56	S5	2		.42	.8	.76	78	S5	2	7	.39	.2	.67
57	S5	3	8	.25	.1	.30	79	S5	2	5	.49	.5	.76

58	S5	3	8	.37	.4	.61	80	S5	3	8	.36	.2	.94
59	S5	3	7	.34	.1	.70	81	S5	3	8	.23	.4	.63
60	S5	3	7	.28	.2	.54	82	S5	3	8	.36	.4	.64
61	S5	3	7	.30	.4	.34	83	S5	3	8	.39	3.0	.85
62	S5	3	7	.49	.3	.78	84	S5	3	8	.32	3.7	.89
63	S5	3	7	.53	.1	.78	85	S5	2		.35	.3	.51
64	S5	2	8	.46	.1	.87	86	S5	2		.46	.3	.91
65	S5	3	7	.43	.3	.76	87	S5	2		.22	.4	.28
66	S5	2	5	.33	.2	.73	88	S5	2		.49	.4	.68
68	S5	3	7	.38	.2	.92	89	S5	2		.47	.3	.68
69	S5	2	5	.51	.3	.78	90	S5	2	5	.34	.4	.59
70	S5	2	8	.48	.3	.69	91	S5	2	5	.29	.4	.59
71	S5	3	7	.55	.2	.85	92	S5	2	5	.43	.4	.57
72	S5	3	7	.46	.9	.90	93	S5	2	5	.53	.5	.76
73	S5	2	5	.27	1.9	.47	94	S5	2	5	.41	.5	.60
74	S5	3	7	.52	.2	.81							

Mean R_ITT: .40

Mean p-value: .68

Table 28. Constructed-Response Item Analyses, Grade 9 Writing

Item #	Session	CS	SA	R_ITT	Percent of Students Obtaining Score Level					Omit %	p-Value
					0	1	2	3	4		
1	S1	2	6	.19	1.7	98.3				.0	.98
2 A	S2	3	8	.48	49.1	49.2				1.7	.49
2 B	S2	3	7	.44	18.5	79.7				1.8	.80
2 C	S2	3	8	.25	67.1	31.1				1.8	.31
2 D	S2	3	7	.40	30.6	67.6				1.8	.68
2 E	S2	3	8	.35	13.5	84.7				1.8	.85
2 F	S2	3	8	.26	27.1	71.1				1.8	.71
3 A	S2	2	6	.62	1.2	5.6	36.1	49.3	7.6	.3	.64
3 B	S2	2	6	.64	.4	6.1	38.2	48.1	6.9	.3	.64
3 C	S2	3	6	.49	.6	10.0	89.1			.3	.94
31	S3	2	5	.59	.9	12.5	44.1	30.7	7.8	4.4	.56
67	S5	2	5	.60	.9	11.6	47.9	31.8	6.5	1.3	.57
95	S5	2	5	.57	.6	14.1	51.8	27.2	4.5	1.9	.54

Mean R_ITT: .46

Mean p-value: .67

Table 29. Multiple-Choice Item Analyses, Grade 9 Mathematics

Item #	Session	CS	SA	R_ITT	Omit %	p-Value	Item #	Session	CS	SA	R_ITT	Omit %	p-Value
1	S1	3		.31	.1	.86	31	S2	3		.42	.2	.57
2	S1	4/5		.28	.3	.62	32	S2	3		.27	1.2	.30
3	S1	1/6		.45	.3	.66	33	S2	4/5		.47	.9	.55
4	S1	1/6	2	.41	.7	.78	36	S2	2	1	.52	.4	.73
6	S1	4/5		.31	1.0	.71	37	S2	2		.47	.4	.81
8	S1	2	2	.30	.2	.34	38	S2	4/5		.40	.3	.48

9	S1	4/5		.32	.4	.54	39	S2	4/5	2	.46	.4	.60
10	S1	3		.46	.2	.69	41	S3	4/5		.28	.5	.68
11	S1	2	1	.52	.4	.63	42	S3	2	1	.43	.2	.82
12	S1	2		.25	5.1	.51	43	S3	1/6		.45	.3	.72
13	S1	3		.38	.3	.58	45	S3	1/6		.47	.7	.58
15	S1	4/5	2	.51	.3	.47	46	S3	4/5		.42	.4	.65
17	S1	2		.48	.9	.54	47	S3	1/6		.39	.5	.26
18	S1	3		.03	.7	.27	49	S3	3		.32	.7	.49
19	S1	3		.54	.5	.74	50	S3	4/5		.52	.2	.27
21	S2	3		.16	.2	.11	52	S3	1/6		.42	.4	.46
22	S2	3		.36	.2	.57	54	S3	2		.42	.7	.49
24	S2	1/6		.35	.2	.74	55	S3	4/5		.34	.5	.55
25	S2	1/6		.39	.3	.82	56	S3	2		.26	.4	.88
26	S2	2	1	.48	.2	.72	57	S3	4/5		.20	.7	.65
27	S2	2	1	.22	.4	.39	58	S3	2		.44	.7	.62
28	S2	3		.42	.4	.75	59	S3	1/6		.36	1.0	.28
30	S2	1/6	2	.34	.2	.69							

Mean R_ITT: .38

Mean p-value: .57

Table 30. Constructed-Response Item Analyses, Grade 9 Mathematics

Item #	Session	CS	SA	R ITT	Percent of Students Obtaining Score Level					Omit %	p-Value
					0	1	2	3	4		
5	S1	1/6	2	.61	66.3	16.1	13.7			3.9	.22
7	S1	2	1	.63	20.9	28.2	22.1	23.4		5.3	.48
14	S1	3		.45	85.7	7.0	5.0			2.3	.08
16	S1	4/5		.61	44.4	15.7	11.3	23.7		5.0	.36
20	S1	2	1	.68	29.6	31.6	23.9	8.1	2.3	4.4	.28
23	S2	2	1	.48	36.8	46.7	8.6			7.9	.32
29	S2	1/6	2	.48	13.0	79.3	2.0	4.3		1.4	.32
34	S2	2		.56	69.0	6.5	17.5			7.0	.21
35	S2	2	1	.70	30.9	14.0	27.8	24.2		3.1	.47
40	S2	4/5		.49	54.7	34.1	2.5	2.0	3.7	3.0	.15
44	S3	3		.13	83.5	4.3	.8			11.3	.03
48	S3	4/5		.62	60.9	17.0	3.5	12.8		5.7	.21
51	S3	1/6	2	.53	69.1	10.3	13.0			7.6	.18
53	S3	3		.65	50.6	25.2	13.8	5.4		5.0	.23
60	S3	3	1	.57	33.1	23.8	32.6	6.3	1.0	3.1	.28

Mean R_ITT: .56

Mean p-value: .26

Table 31. Multiple-Choice Item Analyses, Grade 10 Reading

Item #	Session	CS	SA	R ITT	Omit %	p-Value	Item #	Session	CS	SA	R ITT	Omit %	p-Value
4	S3	1	1	.33	.1	.65	37	S4	6	1	.43	.3	.66
5	S3	6	1	.50	.4	.73	41	S4	6	4	.43	.3	.77
6	S3	1	1	.39	.1	.82	42	S4	6	4	.45	.3	.71
7	S3	6	1	.39	.7	.83	43	S4	1	3	.27	.3	.75
8	S3	1	3	.48	.1	.79	44	S4	4	4	.45	.4	.69
9	S3	1	3	.29	.2	.49	89	S6	1	2	.47	.2	.77
10	S3	1	2	.45	.1	.87	90	S6	1	2	.40	.3	.66

11	S3	4	2	.46	.1	.58	92	S6	5		.51	.3	.89
12	S3	6	2	.36	.2	.57	93	S6	5		.36	.3	.90
15	S3	6	1	.24	.5	.53	94	S6	6	4	.33	.1	.76
16	S3	4	1	.48	1.0	.78	95	S6	6	4	.36	.2	.68
17	S3	5	1	.33	.2	.59	96	S6	1	3	.51	.4	.77
18	S3	5	1	.49	.2	.81	98	S6	5	2	.29	.3	.62
19	S3	5		.37	.3	.70	99	S6	1	2	.36	.2	.45
20	S3	5		.33	.3	.62	100	S6	4	2	.43	.2	.63
21	S3	5		.50	.3	.77	101	S6	1	2	.49	.2	.75
23	S4	4	2	.45	.1	.82	103	S6	5	2	.34	.5	.70
24	S4	4	2	.36	.1	.56	105	S6	5		.20	.4	.39
25	S4	1	2	.31	.1	.70	106	S6	5		.45	.5	.61
26	S4	4	2	.26	.1	.69	107	S6	1	3	.41	.7	.73
27	S4	1	3	.42	.1	.69	108	S6	1	3	.21	.9	.40
28	S4	1	3	.37	.2	.61	109	S6	1	3	.44	.8	.70
29	S4	5		.26	.4	.50	110	S6	6	1	.41	.4	.56
30	S4	5		.13	.4	.30	111	S6	4	1	.54	.4	.78
31	S4	5		.33	.3	.57	112	S6	6	1	.22	.9	.66
32	S4	5		.42	.1	.54	113	S6	6	1	.55	1.8	.70
33	S4	5		.38	.3	.85	114	S6	4	1	.53	.6	.79
34	S4	6	1	.42	.4	.81	116	S6	6	1	.26	1.5	.47
35	S4	4	1	.55	.3	.75	117	S6	1	3	.22	1.6	.51
36	S4	6	1	.22	.5	.41							

Mean R_ITT: .39

Mean p-value: .67

Table 32. Constructed-Response Item Analyses, Grade 10 Reading

Item #	Session	CS	SA	R_ITT	Percent of Students Obtaining Score Level					Omit %	p-Value
					0	1	2	3	4		
13	S3	6	2	.60	6.0	22.0	65.0			6.9	.76
14	S3	1	2	.58	8.8	21.5	67.0			2.7	.78
38	S4	6	1	.56	10.4	25.0	61.5			3.1	.74
39	S4	4	1	.55	10.1	.2	27.9	57.6		4.2	.76
40	S4	1	1	.56	23.2	6.2	21.6	41.9		7.1	.58
45	S4	6	4	.47	28.8	41.6	22.4			7.3	.43
46	S4	4	4	.58	29.4	31.5	29.4			9.7	.45
91	S6	4	2	.39	52.1	35.2	6.6			6.1	.24
97	S6	4	4	.58	20.7	26.9	25.1	22.6		4.7	.48
102	S6	1	2	.59	7.0	12.0	34.3	33.7	1.3	2.6	.56
104	S6	5	2	.52	17.2	45.5	22.8	7.0		7.5	.37
115	S6	4	1	.65	7.3	6.7	19.0	58.5		8.4	.73
118	S6	6	1	.70	8.7	8.4	15.9	31.0	27.3	8.7	.61

Mean R_ITT: .57

Mean p-value: .58

Table 33. Multiple-Choice Item Analyses, Grade 10 Writing

Item #	Session	CS	SA	R_ITT	Omit %	p-Value	Item #	Session	CS	SA	R_ITT	Omit %	p-Value
47	S5	2		.42	.1	.65	68	S5	3	7	.37	.2	.59
48	S5	3	7	.25	.1	.53	69	S5	2	7	.40	.2	.72
49	S5	3	8	.29	.1	.34	70	S5	2	5	.48	.3	.78
50	S5	3	8	.34	.7	.63	71	S5	3	8	.33	.1	.95
51	S5	2	5	.15	.2	.57	72	S5	3	8	.22	.3	.66
52	S5	2	5	.43	.2	.79	73	S5	3	8	.37	.3	.68
53	S5	3	7	.41	.2	.91	74	S5	3	8	.38	2.5	.87
54	S5	3	7	.49	.2	.86	75	S5	3	8	.31	2.9	.90

55	S5	3	7	.47	.2	.86	76	S5	2	.41	.2	.83	
56	S5	3	7	.36	.1	.66	77	S5	2	.51	.3	.74	
57	S5	3	7	.23	.2	.63	78	S5	2	.37	.2	.89	
58	S5	2	8	.35	.2	.69	79	S5	2	.45	.2	.57	
59	S5	2	8	.31	.3	.74	80	S5	2	.39	.2	.57	
60	S5	3	7	.27	.1	.48	81	S5	2	.45	.2	.91	
61	S5	3	7	.28	.2	.44	82	S5	2	.27	.4	.34	
62	S5	2	8	.47	.2	.79	83	S5	2	.53	.3	.74	
63	S5	3	7	.50	.4	.89	84	S5	2	.48	.3	.72	
65	S5	2	5	.33	.2	.63	85	S5	2	5	.39	.3	.65
66	S5	3	7	.38	.2	.71	86	S5	2	5	.41	.3	.59
67	S5	2	8	.50	.2	.79	87	S5	2	5	.49	.3	.82

Mean R_ITT: .38

Mean p-value: .70

Table 34. Constructed-Response Item Analyses, Grade 10 Writing

Item #	Session	CS	SA	R ITT	Percent of Students Obtaining Score Level					Omit %	p-Value
					0	1	2	3	4		
1	S1	2	6	.15	1.3	98.7				.0	.99
2 A	S2	3	8	.44	20.4	78.3				1.3	.78
2 B	S2	3	8	.36	30.8	67.9				1.3	.68
2 C	S2	3	8	.34	52.0	46.7				1.3	.47
2 D	S2	3	8	.48	56.8	41.9				1.3	.42
2 E	S2	3	7	.42	9.1	89.7				1.3	.90
2 F	S2	3	7	.27	12.5	86.2				1.3	.86
3 A	S2	2	6	.56	5.6	4.5	28.1	46.4	14.9	.4	.65
3 B	S2	2	6	.63	.3	5.8	34.4	45.9	13.1	.4	.66
3 C	S2	3	6	.50	.5	37.0	62.1			.4	.81
22	S3	2	5	.56	.3	7.9	40.8	44.8	4.2	2.0	.60
64	S5	2	5	.57	.9	8.6	37.3	44.1	4.8	4.2	.59
88	S5	2	5	.54	.3	11.0	46.8	36.9	3.2	1.8	.57

Mean R_ITT: .46

Mean p-value: .69

Table 35. Multiple-Choice Item Analyses, Grade 10 Mathematics

Item #	Session	CS	SA	R ITT	Omit %	p-Value	Item #	Session	CS	SA	R ITT	Omit %	p-Value
1	S1	1/6		.55	.3	.57	31	S2	1/6		.36	.2	.56
2	S1	1/6		.42	.2	.76	32	S2	3		.33	.1	.78
3	S1	2		.30	.4	.33	34	S2	1/6		.37	.3	.42
4	S1	1/6		.42	.2	.76	35	S2	2	1	.51	.3	.57
5	S1	3		.41	.2	.39	37	S2	3		.32	.8	.33
7	S1	3		.36	.2	.62	38	S2	1/6		.38	.3	.31
8	S1	3		.37	.2	.47	39	S2	1/6		.42	.3	.60
9	S1	4/5		.38	.4	.62	41	S3	1/6		.45	.2	.53

11	S1	2	1	.48	.5	.60	42	S3	4/5	.48	.4	.29
12	S1	3		.38	.3	.60	44	S3	1/6	.48	.5	.31
14	S1	2		.26	.5	.54	45	S3	4/5	.17	1.1	.47
15	S1	1/6		.42	.6	.59	46	S3	2	.31	.4	.45
16	S1	2	1	.45	.4	.76	48	S3	4/5	.40	.5	.69
18	S1	3	2	.42	.8	.74	49	S3	4/5	.27	.3	.77
19	S1	2	1	.24	.9	.61	50	S3	1/6	.51	.3	.34
21	S2	2		.40	.3	.48	52	S3	4/5	.35	.3	.61
22	S2	3	2	.50	.1	.78	53	S3	3	.31	.5	.54
24	S2	4/5		.39	.2	.54	54	S3	2	.46	.5	.67
25	S2	4/5		.30	.2	.50	55	S3	1/6	.40	.4	.50
26	S2	2		.41	.4	.86	57	S3	4/5	.17	.7	.65
27	S2	3		.34	.4	.84	58	S3	4/5	.37	.7	.42
28	S2	3	2	.38	.4	.63	59	S3	2	.43	.9	.69
29	S2	2	1	.49	.5	.72						

Mean R_ITT: .38

Mean p-value: .57

Table 36. Constructed-Response Item Analyses, Grade 10 Mathematics

Item #	Session	CS	SA	R ITT	Percent of Students Obtaining Score Level					Omit %	p-Value
					0	1	2	3	4		
6	S1	4/5		.43	82.4	3.6	4.9			9.1	.07
10	S1	2	1	.61	16.9	22.2	28.5	27.3		5.2	.54
13	S1	3		.55	28.4	50.5	19.8			1.3	.45
17	S1	1/6		.60	45.3	9.1	29.4	13.9		2.4	.37
20	S1	4/5		.53	71.3	14.6	4.1	1.0	.4	8.6	.07
23	S2	3		.11	78.4	11.6	1.2			8.8	.07
30	S2	3	2	.52	25.0	43.4	11.4	17.8		2.3	.40
33	S2	2	1	.45	63.4	19.6	14.6			2.4	.24
36	S2	2	1	.64	61.8	19.6	7.4	6.3		4.8	.18
40	S2	3	2	.56	55.1	18.3	13.5	8.7	2.0	2.3	.20
43	S3	1/6		.42	72.5	3.2	18.9			5.5	.20
47	S3	4/5		.71	61.7	13.9	11.9	10.4		2.2	.23
51	S3	2	1	.44	82.1	3.1	9.4			5.4	.11
56	S3	4/5		.65	49.9	16.7	6.9	19.0		7.5	.29
60	S3	2	1	.58	26.5	51.2	12.9	3.9	1.5	3.9	.24

Mean R_ITT: .53

Mean p-value: .24

Table 37. Item Parameter and Fit Summary, Multiple-Choice Items, Grade 3 Reading (N=53,304)

Item	a	b	c	Fit-Z	Item	a	b	c	Fit-Z
1	.91	-.74	.46	4.5	23	.84	-1.83	.00	3.0
2	1.00	-2.32	.28	47.8	24	.77	-.17	.12	4.9
6	.71	-1.62	.00	28.1	25	.95	-1.01	.18	6.8
7	.52	-1.54	.20	46.6	26	.82	-.10	.07	26.6
8	1.00	-1.18	.24	3.6	27	1.76	-.84	.16	18.5
9	1.33	-1.46	.19	6.1	28	.96	-.51	.21	15.5
10	1.31	-1.50	.27	3.9	29	.93	1.52	.16	42.9

11	.57	-2.22	.00	4.7	30	1.40	-.70	.30	13.3
12	1.19	-2.17	.05	14.8	31	1.34	-1.57	.11	8.6
13	1.17	-2.32	.08	8.9	32	1.30	-1.03	.20	6.7
14	.90	-1.27	.22	1.8	33	.66	-2.07	.20	8.1
15	.89	-.57	.18	3.9	34	.89	-1.27	.06	1.7
16	1.01	-1.69	.14	3.9	35	.91	-1.83	.05	8.3
17	1.25	-1.29	.20	4.9	37	.78	-1.91	.00	3.2
18	.90	.13	.12	16.6	38	1.24	.30	.22	55.5
19	1.13	-1.15	.12	6.2	40	1.17	-.90	.12	15.8
20	.93	-1.16	.13	.7	41	.99	-.04	.27	17.1

**Table 38. Item Parameter and Fit Summary,
Constructed-Response Items, Grade 3 Reading
(N=53,304)**

Item	f	g1	g2	g3	g4	Fit-Z
3	1.30	-2.16	-3.47			53.6
4	.69	-1.11	.17			43.5
5	.79	-1.11	-.11	-.35		78.2
21	.81	-.92	-2.67			44.8
22	.92	-2.07				2.5
36	.81	-.38	-.43			99.3
39	.68	.58	.42			141.5
42	.54	-.23	-1.11	.08	-.65	56.4

**Table 39. Item Parameter and Fit Summary, Multiple-Choice Items,
Grade 3 Spanish Reading (N=1430)**

Item	a	b	c	Fit-Z	Item	a	b	c	Fit-Z
1	.68	-2.18	.20	-1.4	22	1.61	-1.54	.20	-.8
2	.99	1.36	.20	-.1	23	.58	-.34	.18	.5
5	.65	-1.11	.20	-.9	24	1.29	-1.27	.20	-1.2
6	.62	-.65	.28	-.9	28	.51	2.12	.30	.4
7	.94	-.40	.21	.7	29	.67	-1.87	.20	.6
8	.91	-1.40	.28	-1.5	30	.63	3.65	.43	-.6
9	.60	.19	.16	.2	31	1.46	1.78	.18	3.5
10	.98	.27	.36	2.5	32	.50	.18	.20	.4
11	.72	.64	.48	1.7	33	.95	-.92	.15	-.1

12	.60	-.76	.28	-1.3	36	.83	-.02	.18	-1.0
14	1.30	.78	.23	2.1	37	.85	-.76	.20	3.1
16	.74	-1.43	.20	2.0	38	.68	1.27	.15	-.1
18	.66	-1.11	.20	-.5	39	.77	-.45	.20	.3
19	.78	-.88	.20	.6	40	.63	1.23	.21	-.1
21	1.09	-1.12	.20	-.2					

**Table 40. Item Parameter and Fit Summary,
Constructed-Response Items, Grade 3 Spanish
Reading (N=1430)**

Item	f	g1	g2	g3	g4	Fit-Z
3	.53	.22	-.82	-1.11		.7
4	.64	.20	1.39			.5
13	.81	-.74	-1.31			11.7
15	.59	.44	-.74			-1.4
17	.88	-1.01	-2.09			-.3
20	.72	-1.32				-.2
25	.71	-3.15	.27			4.6
26	.79	-1.45	-.34			.1
27	.65	.29	.31			4.8
34	.71	-1.42	-1.20	.24	-.58	-.4
35	.76	-.22	.55			8.0

**Table 41. Item Parameter and Fit Summary, Multiple-Choice Items,
Grade 3 Writing (N=4093)**

Item	a	b	c	Fit-Z	Item	a	b	c	Fit-Z
1	1.44	.72	.49	5.1	21	.74	-2.80	.20	.4
2	1.75	.36	.48	4.4	22	.93	-.15	.39	3.3
3	.76	-1.64	.28	1.1	23	1.21	.39	.30	4.3
4	1.11	-1.62	.16	2.9	24	.97	-1.22	.31	.5
5	1.33	-2.12	.28	-.5	25	.99	-1.81	.20	1.6
7	.44	-1.77	.20	2.3	26	.77	-.38	.17	.5
8	.99	-1.49	.29	.6	28	.83	-.68	.25	.8
9	.93	-1.22	.27	-.9	29	.81	.52	.32	.9
10	.79	-1.71	.20	-.7	30	.90	-2.08	.20	.1
11	.91	-1.98	.20	1.0	31	.79	-.64	.13	1.3

12	.78	-1.70	.20	-.5	32	.75	-1.74	.00	1.9
14	1.23	-.56	.28	5.8	33	.99	-1.60	.20	.0
15	1.47	.30	.35	4.4	34	.55	-1.63	.00	3.9
16	.80	-.16	.17	2.1	35	.54	-2.13	.20	.2
17	.78	-2.30	.20	-.5	36	.69	-1.76	.20	1.8
18	.83	-3.31	.20	1.4	37	.72	-1.93	.20	1.3
19	.69	-1.91	.20	-.1	38	.96	-1.47	.20	2.7
20	.87	-2.15	.20	1.6					

**Table 42. Item Parameter and Fit Summary,
Constructed-Response Items, Grade 3 Writing (N=4093)**

Item	Part	f	g1	g2	g3	g4	Fit-Z
6	A	1.06	-1.48				2.4
6	B	.54	-2.11				3.0
6	C	.67	-.26				2.4
6	D	1.07	-1.62				2.7
6	E	.79	-.11				1.3
6	F	1.25	-2.36				-.4
13	A	1.00	-4.46	1.94			3.8
13	B	2.11	-6.30				-1.1
13	C	1.35	-3.45				-.8
13	D	1.82	-4.13				-.1
27	A	1.06	-4.11	2.47			2.9
27	B	2.26	-6.49				-.6
27	C	1.43	-3.41				-.4
27	D	1.78	-4.12				-1.6
39	A	.98	-3.58	1.77			5.5
39	B	1.69	-4.74				-.7
39	C	1.00	-2.35				.0
39	D	1.64	-4.05				.9

**Table 43. Item Parameter and Fit Summary, Multiple-Choice Items,
Grade 4 Reading (N=3527)**

Item	a	b	c	Fit-Z	Item	a	b	c	Fit-Z
4	1.35	-1.70	.21	-.4	41	.79	-2.19	.00	-.1
5	.80	.69	.25	4.2	42	.90	-2.29	.20	3.3
6	1.14	-1.54	.26	.2	43	.55	-2.91	.20	1.3
7	1.09	-.94	.32	-.5	45	.96	-.84	.22	-.5
8	.81	.89	.13	-.4	46	.88	-.49	.29	.5
9	1.18	-1.21	.37	1.1	47	.65	.14	.12	.1
12	1.23	-.06	.35	-.3	48	.98	-.82	.18	1.3
13	.70	-.49	.20	.3	49	.94	-.16	.21	1.1
14	.22	2.30	.20	2.6	50	.80	-.60	.20	-.7

15	.94	-.26	.25	-.3	51	1.32	-1.75	.22	.0
16	.86	-1.58	.16	5.0	52	1.12	-1.94	.20	.5
17	1.06	.79	.29	.7	53	1.09	-1.45	.20	3.4
18	.99	.27	.20	.0	54	1.03	-.50	.20	-.3
20	.91	-2.14	.20	-.4	55	.88	-1.87	.20	.2
21	.99	-.91	.27	-.6	56	1.16	-.08	.22	-.3
22	.70	2.22	.20	22.6	101	.71	-.74	.16	.2
23	.83	-.49	.20	-1.0	104	1.24	-1.92	.20	1.6
28	.66	-2.75	.20	-.1	105	.24	5.14	.20	1.8
29	.80	-.67	.18	-.8	106	1.39	-.49	.28	.1
30	.82	-1.91	.20	3.7	107	.31	-1.42	.20	6.0
31	.78	-.69	.12	1.2	108	.39	-.43	.20	2.4
32	1.00	-1.06	.32	1.4	109	.54	-.10	.20	.3
33	.98	.81	.29	1.8	110	.90	-1.17	.14	-.8
34	.87	.96	.11	1.7	113	.81	-.40	.13	-.8
35	.95	-.88	.21	.1	114	.82	-1.07	.20	-1.2
36	1.10	-1.38	.13	.9	117	.85	.45	.24	-.6
37	.76	-.87	.20	1.4	118	1.13	-1.26	.21	-1.3
38	1.07	-2.33	.20	-.7	119	.90	-1.68	.20	.3
39	1.25	-1.79	.18	-.3	120	.98	-1.99	.20	-.9
40	.80	-1.84	.00	-.6					

**Table 44. Item Parameter and Fit Summary,
Constructed-Response Items, Grade 4 Reading
(N=3527)**

Item	f	g1	g2	g3	g4	Fit-Z
10	.58	-.14	-.89			2.3
11	.50	.41	.31			3.1
19	.66	-.64	-.06	1.16		-.3
24	.58	.69	-1.88			4.1
25	.66	-.72	-3.16			-.2
26	.89	-2.49				2.2
44	.63	-.54	-1.08			2.6
57	.68	.23	-.27			2.9
58	.42	-.01	-1.38	.01	-.88	10.6
102	1.08	-1.82	-1.00	-2.62	-1.79	12.6
103	.78	-.08	-1.20			4.4
111	.42	.64	.53			4.6
112	.72	-1.07	-.34	.41		2.9
115	.84	.04	.45			3.3
116	.78	.22	1.92			1.2

**Table 45. Item Parameter and Fit Summary, Multiple-Choice Items,
Grade 4 Spanish Reading (N=1011)**

Item	a	b	c	Fit-Z	Item	a	b	c	Fit-Z
4	1.08	.37	.21	.9	42	.71	-.87	.20	-1.0
5	.12	3.74	.20	3.6	43	.38	.36	.00	.1
6	.38	-.44	.20	.0	44	1.33	2.38	.17	-1.5
7	1.16	1.20	.24	-.6	45	.87	-1.14	.20	.3
8	.79	1.11	.20	1.7	46	.89	-.51	.16	-.1
10	.59	-.08	.19	-.2	47	1.16	-.19	.22	.0
12	.33	-.19	.20	.6	48	1.23	.91	.17	.6
15	.70	.38	.17	-.8	92	.75	-1.55	.20	.1
17	.65	-.26	.18	1.4	93	.60	-.63	.20	.2

18	.59	.02	.20	1.7	94	1.21	.57	.27	.3
19	.83	-1.55	.20	-1.4	95	.55	-1.02	.20	.4
20	.61	1.75	.17	-.2	96	.80	-1.25	.20	-.8
21	.83	-1.00	.17	-.2	97	1.52	2.28	.20	2.7
22	.64	1.70	.16	1.4	100	.66	-1.15	.20	.1
23	.20	4.32	.20	-.5	101	1.31	-1.84	.20	-1.4
24	1.07	-.03	.18	.6	102	.55	1.23	.19	-.5
25	.62	-.56	.20	2.8	104	.99	.13	.27	.4
26	.42	.46	.20	1.2	106	.97	1.14	.18	2.6
27	.72	-.82	.20	1.4	107	1.00	.59	.26	-1.2
28	.49	-.53	.20	.3	108	.46	-.47	.20	.0
30	.32	.68	.00	.5	109	.61	-.71	.20	.7
31	.72	-.23	.16	-.2	110	.23	.49	.20	-.5
33	.82	1.78	.19	-.9	111	.40	3.16	.19	-.7
34	.79	-1.24	.20	.6	112	.61	-.95	.20	.5
35	.70	-.63	.20	-1.3	113	.34	-.44	.20	-.1
36	.59	.62	.20	.0	114	.81	-.19	.20	.5
38	.85	.28	.24	.8	115	.86	.21	.20	.6
41	.67	1.46	.16	1.7					

**Table 46. Item Parameter and Fit Summary,
Constructed-Response Items, Grade 4 Spanish
Reading (N=1011)**

Item	f	g1	g2	g3	g4	Fit-Z
9	.81	.12	-1.55			.1
11	.56	.93	-.10	-.72	-1.87	-.9
13	.30	1.53	.65	.44		-.9
14	.63	1.03	.42			-.6
16	.84	.46	.13			1.2
29	.96	-1.39	-1.06	-1.68		-1.8
32	.85	1.37	.53			3.2
37	.48	.44	.52	1.11		.1
39	1.16	-.34				.6
40	1.29	.11				.4
98	.80	-1.90	-1.86			-1.4
99	.54	-1.29	-1.04	.98		1.2
103	.73	-1.98	-.42			3.0
105	.64	1.35	-1.99			1.1

**Table 1. The Colorado Model Content Standards
and Sub-Content Areas**

Reading		
Content Standards		
CS	Grades	
1	3 -10	Reading Comprehension
4	4 -10	Thinking Skills
5	4 -10	Use of Literary Information
6	4 -10	Literature
Sub-Content Areas		
SA	Grades	
1	7 -10	Fiction
2	3 -10	Nonfiction
3	4 -10	Vocabulary
4	7 -10	Poetry
1/4	3 - 6	Fiction and Poetry
Writing		
Content Standards		
CS	Grades	
2	3 -10	Write for a Variety of Purposes
3	3 -10	Write Using Conventions
Sub-Content Areas		
SA	Grades	
5	3 -10	Paragraph Writing
6	4 -10	Extended Writing
7	3 -10	Grammar and Usage
8	3 -10	Mechanics
Mathematics		
Content Standards		
CS	Grades	
1	5 - 6	Number Sense
2	5 -10	Algebra, Patterns, and Functions
3	5 -10	Statistics and Probability
4/5	5 -10	Geometry and Measurement
6	5 - 6	Computational Techniques
1/6	7 - 10	Number Sense and Computational Techniques
Sub-Content Areas		
SA	Grades	
1	5 - 6	Number and Operation Sense
1	7	Number Sense
1	8	Linear Pattern Representation
1	9	Multiple Representations of Linear/Nonlinear Functions
1	10	Multiple Representations of Functions
2	5 - 6	Patterns
2	7	Area and Perimeter Relationships
2	8 - 9	Proportional Thinking
2	10	Probability and Counting Techniques
3	5	Data Displays
3	6 and 8	Geometry
Science		
Content Standards		
CS	Grades	
1	8	Scientific Investigation
2	8	Physical Science
3	8	Life Science
4	8	Earth and Space Science
5/6	8	Science and Technology
Sub-Content Areas		
SA	Grades	
1	8	Experimental Design and Investigations
2	8	Results and Data Analysis
3	8	Physics
4	8	Chemistry
5	8	Earth Science

Table 2. Configuration of 2002 CSAP Assessments

Grade	Content Area	Maximum Possible Points	Total # of Items		Frequency of CR Items with the Given Number of Maximum Points			
			MC	CR	1	2	3	4
3	Reading	52	34	8	1	5	1	1
4	Reading	94	59	15	1	10	2	2
5	Reading	95	60	14		7	7	
6	Reading	99	57	16		7	8	1
7	Reading	98	60	15		7	8	
8	Reading	88	58	14		12	2	
9	Reading	93	56	15		9	5	1
10	Reading	94	59	13		6	5	2
3	Reading Sp	53	29	11	1	8	1	1
4	Reading Sp	87	55	14	2	7	4	1
3	Writing	56	35	18	15	3		
4	Writing	69	40	13	7	1		5
5	Writing	70	41	13	7	1		5
6	Writing	71	42	13	7	1		5
7	Writing	67	38	13	7	1		5
8	Writing	69	40	13	7	1		5
9	Writing	70	41	13	7	1		5
10	Writing	69	40	13	7	1		5
4	Writing Sp	69	40	13	7	1		5
5	Mathematics	96	54	15		6	6	3
6	Mathematics	87	45	15		6	6	3
7	Mathematics	87	45	15		6	6	3
8	Mathematics	86	44	15		6	6	3
9	Mathematics	87	45	15		6	6	3
10	Mathematics	87	45	15		6	6	3
8	Science	98	63	21	11	7	2	1

Table 3. Configuration of 2002 CSAP Reading Assessments by Grade, Item Type, Content Standard, and Sub-Content Area

Grade	Content Area	Item Type	Content Standard						Sub-Content Area									
			1		4		5		6		1/4		2		3		4	
			No. of Items	Total Pts.	No. of Items	Total Pts.	No. of Items	Total Pts.	No. of Items	Total Pts.	No. of Items	Total Pts.	No. of Items	Total Pts.	No. of Items	Total Pts.	No. of Items	Total Pts.
3	Reading	MC	34	34	15	11	11	7	7	11	11	16	16	13	13			
4	Reading	MC	26	18	1	2	4	9	5	13	15	15	15	13	13			
5	Reading	MC	15	15	17	16	16	12	12	21	21	17	17	8	8			
6	Reading	MC	24	24	10	10	14	14	9	9	14	14	11	11	8	8		
7	Reading	MC	19	19	14	14	17	17	10	10	17	17	20	20	8	8		
8	Reading	MC	23	23	12	12	12	12	11	11	12	12	21	21	9	9		
9	Reading	MC	18	18	8	8	15	15	5	5	15	15	5	5	10	10		
10	Reading	MC	18	18	10	10	16	16	4	4	16	16	4	4	10	10		
3	Reading Sp	MC	29	29	5	13	1	3	4	10	3	3	14	14	12	12		
4	Reading Sp	MC	25	25	11	11	12	12	7	7	12	12	21	21	8	8		
		CR	2	6	5	9	5	13	2	4	5	13	5	9	4	10		

Table 4. Configuration of 2002 CSAP Writing Assessments by Grade, Item Type, Content Standard, and Sub-Content Area

Grade	Content Area	Item Type	Content Standard			Sub-ContentArea								
			2		3		5		6		7		8	
			No. of Items	Total Pts.	No. of Items	Total Pts.	No. of Items	Total Pts.	No. of Items	Total Pts.	No. of Items	Total Pts.	No. of Items	Total Pts.
3	Writing	MC	7	7	28	28				18	18	10	10	
CR		9	12	9	9	12	15			2	2	4	4	
4	Writing	MC	12	12	28	28				17	17	11	11	
CR		6	21	7	8	3	12	11		3	3	3	3	
5	Writing	MC	18	18	23	23				14	14	12	12	
CR		6	21	7	8	3	12	11		2	2	4	4	
6	Writing	MC	16	16	26	26				17	17	12	12	
CR		6	21	7	8	3	12	11		2	2	4	4	
7	Writing	MC	15	15	23	23				8	8	17	17	
CR		6	21	7	8	3	12	11		2	2	4	4	
8	Writing	MC	17	17	23	23				15	15	11	11	
CR		6	21	7	8	3	12	11		1	1	5	5	
9	Writing	MC	20	20	21	21				14	14	11	11	
CR		6	21	7	8	3	12	11		2	2	4	4	
10	Writing	MC	22	22	18	18				12	12	11	11	
CR		6	21	7	8	3	12	11		2	2	4	4	
4	Writing SP	MC	6	21	40	40				20	20	13	13	
CR		6	21	7	8	3	12	11		4	4	2	2	

Table 5. Configuration of 2002 CSAP Mathematics Assessments by Grade, Item Type, Content Standard, and Sub-Content Area,

Grade	Content Area	Item Type	Content Standard						Sub-Content Area					
			1	2	3	4/5	6	1/6	1	2	3			
			No. of Items	Total Pts.	No. of Items	Total Pts.	No. of Items	Total Pts.	No. of Items	Total Pts.	No. of Items	Total Pts.	No. of Items	Total Pts.
5	Math	MC	14	14	7	7	11	11	14	14	9	9	2	2
		CR	2	5	4	12	3	9	2	5	3	8	3	9
		MC	10	10	7	7	12	12	9	9	6	6	4	4
6	Math	CR	2	7	3	10	4	10	2	4	2	6	2	7
		MC	9	9	9	9	12	12	15	15	5	5	3	3
7	Math	CR	3	8	3	9	5	14	4	11	4	11	3	10
		MC	11	11	8	8	14	14	11	11	5	5	8	8
8	Math	CR	4	11	3	8	4	12	4	11	4	11	1	3
		MC	12	12	11	11	12	12	10	10	5	5	5	5
9	Math	CR	5	14	4	11	3	10	3	7	5	16	3	7
		MC	12	12	11	11	10	10	12	12	5	5	3	3
10	Math	CR	5	14	4	11	4	12	2	5	5	14	2	7

Table 6. Configuration of 2002 CSAP Science Assessments by Grade, Content Standard, Sub-Content Area, and Item Type

Grade	Content Area	Item Type	Content Standard									
			1	2	3	4	5/6					
			No. of Items	Total Pts.	No. of Items	Total Pts.	No. of Items	Total Pts.	No. of Items	Total Pts.		
8	Science	MC	12	12	16	16	13	13	16	16		
		CR	9	15	3	4	5	9	2	4		
			Sub-Content Area									
			1		2		3		4		5	
			No. of Items	Total Pts.	No. of Items	Total Pts.	No. of Items	Total Pts.	No. of Items	Total Pts.	No. of Items	Total Pts.
8	Science	MC	4	4	8	8	9	9	7	7	12	12
		CR	5	7	4	8	1	1	2	3	1	3

Table 7. Lowest and Highest Obtainable Scale Scores for the 2002 CSAP Assessments

Grade	Content Area	LOSS	HOSS
3	Reading	150	795
4	Reading	180	940
5	Reading	220	955
6	Reading	260	970
7	Reading	300	980
8	Reading	330	990
9	Reading	350	995
10	Reading	370	999
3	Reading Sp	300	740
4	Reading Sp	300	790
3	Writing	150	680
4	Writing	190	730
5	Writing	220	780
6	Writing	230	840
7	Writing	240	890
8	Writing	250	910
9	Writing	260	930
10	Writing	270	950
4	Writing Sp	300	790
5	Mathematics	220	800
6	Mathematics	240	830
7	Mathematics	280	860
8	Mathematics	310	890
9	Mathematics	340	920
10	Mathematics	370	950
8	Science	300	790

Table 8. Scale Score Descriptive Statistics for the Total Test

Content Area	Grade	Group	N	Mean SS	SD	Median SS
Reading	3	Female	26078	574	78.7	576
		Male	27458	561	81.5	565
		Total	53590	567	80.5	570
Reading	4	Female	27102	589	63.1	595
		Male	28281	579	67.5	586
		Total	55446	584	65.6	590
Reading	5	Female	27527	609	64.9	615
		Male	28741	600	70.0	608
		Total	56314	605	67.7	612
Reading	6	Female	27039	629	62.4	635
		Male	28448	612	67.7	620
		Total	55561	620	65.7	627
Reading	7	Female	26681	641	62.4	646
		Male	27573	624	68.0	630
		Total	54313	632	65.9	638
Reading	8	Female	26293	658	56.5	663
		Male	27061	644	61.8	652
		Total	53410	651	59.7	658
Reading	9	Female	25923	673	56.4	679
		Male	26918	655	63.8	663
		Total	52912	664	61.0	671
Reading	10	Female	24293	688	53.0	693
		Male	24650	668	64.7	679
		Total	48998	678	60.0	686
Spanish Reading	3	Female	687	528	42.3	531
		Male	742	511	45.1	515
		Total	1429	519	44.5	521
Spanish Reading	4	Female	504	530	43.8	531
		Male	507	517	47.6	521
		Total	1011	524	46.1	527
Writing	3	Female	26491	472	52.5	473
		Male	27932	460	51.5	462
		Total	54457	466	52.4	467
Writing	4	Female	27119	495	53.9	495
		Male	28301	477	50.7	478
		Total	55485	485	53.0	486
Writing	5	Female	27572	509	56.7	510
		Male	28776	490	55.3	492
		Total	56395	500	56.8	500
Writing	6	Female	27070	528	62.0	528
		Male	28480	501	62.1	503
		Total	55625	514	63.5	515
Writing	7	Female	26694	556	62.9	557
		Male	27579	527	62.9	529
		Total	54331	541	64.6	542

Content Area	Grade	Group	N	Mean SS	SD	Median SS
Writing	8	Female	26322	574	69.5	576
		Male	27086	540	69.0	544
		Total	53464	557	71.4	559
Writing	9	Female	25965	579	76.8	580
		Male	26928	548	81.3	552
		Total	52966	563	80.7	566
Writing	10	Female	24298	597	76.7	595
		Male	24641	568	80.9	570
		Total	48995	582	80.2	583
Spanish Writing	4	Female	503	529	44.0	529
		Male	500	511	45.7	514
		Total	1003	520	45.7	523
Mathematics	5	Female	27658	502	71.5	503
		Male	28883	504	75.7	506
		Total	56599	503	73.7	504
Mathematics	6	Female	27092	522	70.9	524
		Male	28554	520	75.9	525
		Total	55708	521	73.6	524
Mathematics	7	Female	26722	536	69.5	542
		Male	27633	535	75.1	544
		Total	54396	536	72.4	543
Mathematics	8	Female	26247	557	65.9	561
		Male	27045	556	71.7	562
		Total	53343	556	68.9	561
Mathematics	9	Female	26000	564	68.3	571
		Male	27017	566	77.1	575
		Total	53076	565	72.9	573
Mathematics	10	Female	24321	582	67.4	590
		Male	24720	584	75.6	594
		Total	49098	583	71.6	592
Science	8	Female	26210	498	57.4	504
		Male	27016	505	65.2	513
		Total	53285	501	61.6	508

Table 9. Scale Score Descriptive Statistics by Content Standard

Content Area	Grade	Content Standard																										
		1			2			3			4			5			6			Total								
		Mean	SD	Median	Mean	SD	Median	Mean	SD	Median	Mean	SD	Median	Mean	SD	Median	Mean	SD	Median	Mean	SD	Median						
Reading	3	567	80.45	570							582	106.9	592	587	86.5	591	605	89.1	612	607	84.7	611	587	97.1	591	567	80.5	570
Reading	4	590	83.8	590							605	89.1	612	607	84.7	611	605	89.1	612	607	84.7	611	606	83.7	613	584	65.6	590
Reading	5	611	93.0	611							626	101.9	627	620	89.8	625	626	101.9	627	620	89.8	625	619	92.7	626	605	67.7	612
Reading	6	622	70.1	628							643	105.3	637	641	93.8	636	643	105.3	637	641	93.8	636	633	81.0	639	620	65.7	627
Reading	7	635	77.5	641							672	111.9	657	650	97.2	658	672	111.9	657	650	97.2	658	654	79.8	657	632	65.9	638
Reading	8	654	71.0	658							663	82.8	670	671	92.7	671	663	82.8	670	671	92.7	671	667	82.3	671	651	59.7	658
Reading	9	667	73.8	671							680	78.2	687	679	79.8	687	680	78.2	687	679	79.8	687	678	76.5	686	664	61.0	671
Reading	10	678	74.9	686							518	65.5	529	523	56.0	528	518	65.5	529	523	56.0	528	524	69.4	528	678	60.0	686
Spanish Reading	3	519	44.5	521																						519	44.5	521
Spanish Reading	4	525	52.3	527																						524	46.1	527
Writing	3				466	62.5	466	475	69.2	468																466	52.4	467
Writing	4				486	57.2	484	492	69.2	487																485	53.0	486
Writing	5				500	59.1	501	503	68.0	500																500	56.8	500
Writing	6				516	67.7	517	516	72.6	514																514	63.5	515
Writing	7				541	67.6	541	545	75.6	544																541	64.6	542
Writing	8				556	74.4	557	566	87.9	561																557	71.4	559
Writing	9				563	92.0	565	581	121.7	568																563	80.7	566
Writing	10				586	84.1	586	584	96.9	578																582	80.2	583
Spanish Writing	4				524	59.4	521	520	48.1	523																520	45.7	523
Mathematics	5	511	104.3	503	515	114.5	505	515	103.4	508	510	91.1	504	509	106.2	504	510	91.1	504	509	106.2	504	503	73.7	504	503	73.7	504
Mathematics	6	522	100.2	523	528	100.7	528	535	110.2	526	530	93.6	524	525	110.9	524	530	93.6	524	525	110.9	524	521	73.6	524	521	73.6	524
Mathematics	7	536	86.9	542	539	96.8	543	541	94.9	546	533	82.9	542	536	82.9	542	533	82.9	542	536	82.9	542	536	72.4	543	536	72.4	543
Mathematics	8	552	92.6	559	558	79.5	562	552	89.0	560	560	83.2	564	556	83.2	564	560	83.2	564	559	83.2	564	556	68.9	561	556	68.9	561
Mathematics	9	564	85.6	571	564	79.7	573	560	84.5	569	559	96.7	575	565	96.7	575	559	96.7	575	565	96.7	575	565	72.9	573	565	72.9	573
Mathematics	10	578	99.2	593	581	81.3	592	583	83.2	591	573	89.2	589	583	89.2	589	573	89.2	589	583	89.2	589	583	71.7	592	583	71.7	592
Science	8	507	77.1	509	502	72.7	508	504	72.9	508	500	74.1	508	506	87.3	507	500	74.1	508	506	87.3	507	501	61.6	508	501	61.6	508

NOTE: In Mathematics grades 5 through 10, CS 4 and 5 are reported together. In Mathematics grades 7 through 10, CS 1 and 6 are reported together. In Science grade 8, CS 5 and 6 are reported together.

Table 10. Scale Score Descriptive Statistics by Sub-Content Area

Content Area	Grade	Sub-Content Area																							
		1		2		3		4		5		6		7		8									
		Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD								
Reading	3	571	93.8	570	588	114.3	570																		
Reading	4	585	75.8	591	597	98.6	591																		
Reading	5	605	77.4	613	604	87.6	611																		
Reading	6	621	70.2	627	621	77.9	629																		
Reading	7	648	112.4	639	633	72.2	638	637	105.6	640															
Reading	8	656	83.6	660	658	81.5	657	661	106.6	659															
Reading	9	669	80.0	670.5	667	80.7	671	665	88.2	671															
Reading	10	680	74.1	686	677	73.9	688	674	108.3	686															
Spanish Reading	3	520	47.4	522	518	70.7	524																		
Spanish Reading	4	523	56.0	528	523	55.6	528																		
Writing	3							471	63.7	465															
Writing	4							489	72.8	492															
Writing	5							503	66.0	503															
Writing	6							518	76.0	518															
Writing	7							544	79.8	542															
Writing	8							554	85.9	552															
Writing	9							563	92.0	564															
Writing	10							587	96.6	588															
Spanish Writing	4							525	71.8	514															
Mathematics	5	517	115.1	503	525	136.6	506																		
Mathematics	6	518	106.3	525	540	124.6	531																		
Mathematics	7	532	103.7	542	517	104.1	537																		
Mathematics	8	559	84.0	562	552	108.3	560																		
Mathematics	9	560	87.1	573	561	97.9	570																		
Mathematics	10	578	89.6	594	581	103.3	594																		
Science	8	516	105.9	509	517	94.6	510																		
								502	83.1	507															
								503	83.8	509															
								513	106.3	508															
								526	92.2	530															
								596	113.3	593															
								641	142.3	632															
								627	120.3	623															
								635	130.3	644															
								659	105.0	656															
								664	113.3	672															
								682	128.8	687															
								489	98.8	468															
								496	84.1	487															
								511	91.8	501															
								520	94.9	513															
								534	134.9	546															
								570	106.9	564															
								581	124.4	587															
								581	121.7	637															
								606	138.3	580															
								525	66.8	512															
								489	98.8	468															
								496	84.1	487															
								511	91.8	501															
								520	94.9	513															
								534	134.9	546															
								570	106.9	564															
								581	124.4	587															
								581	121.7	637															
								599	123.9	582															
								521	59.2	521															
								485	93.1	470															
								509	104.6	490															
								504	79.5	501															
								514	94.5	516															
								543	87.9	544															
								575	116.8	561															
								576	115.2	570															
								591	115.7	581															
								513	79.8	522															

NOTE: In Reading grades 3 through 6, SA 1 and 4 are reported together.

Table 11. Raw Score Descriptive Statistics by Content Standard

Content Area	Grade	Content Standard																	
		1			4			5			6			Total					
		Mean	SD	Mean % of Max.	Mean	SD	Mean % of Max.	Mean	SD	Mean % of Max.	Mean	SD	Mean % of Max.	Mean	SD	Mean % of Max.			
Reading	3	39	9.2	75.7	10	3.5	61.3	13	4.0	64.5	12	4.0	61.9	39	9.2	75.7			
Reading	4	28	6.4	76.6	10	3.5	61.3	13	4.0	64.5	12	4.0	61.9	64	16.2	68.1			
Reading	5	14	3.7	70.0	15	4.5	63.3	16	4.8	65.3	16	5.6	61.0	61	17.2	64.6			
Reading	6	29	8.4	63.6	10	3.2	66.0	14	4.6	61.5	10	3.5	60.0	62	18.3	63.0			
Reading	7	24	6.7	68.1	14	3.8	72.1	19	5.6	70.0	10	3.4	59.6	67	18.0	68.0			
Reading	8	24	6.3	70.0	12	3.1	74.5	10	3.3	63.1	14	4.3	63.5	60	15.7	67.9			
Reading	9	21	6.1	67.1	10	4.0	55.7	13	3.9	68.8	17	5.5	66.7	61	18.0	65.2			
Reading	10	18	5.5	65.4	14	5.2	62.7	11	3.6	60.4	16	5.4	64.4	60	18.0	63.5			
Spanish Reading	3	34	9.2	63.9										34	9.2	63.9			
Spanish Reading	4	20	6.0	64.7	9	3.9	46.2	13	4.7	53.4	6	2.3	52.0	48	14.9	55.6			

Content Area	Grade	Content Standard																	
		2			3			Total											
		Mean	SD	Mean % of Max.	Mean	SD	Mean % of Max.	Mean	SD	Mean % of Max.									
Writing	3	15	2.5	66.5	30	5.9	75.9	44	7.9	79.4									
Writing	4	22	5.2	66.5	27	6.1	75.9	49	10.6	71.3									
Writing	5	25	6.5	63.9	22	5.3	70.9	47	11.2	66.9									
Writing	6	23	5.9	60.9	22	6.3	65.0	45	11.6	62.9									
Writing	7	23	5.5	62.6	19	5.4	61.8	42	10.2	62.3									
Writing	8	25	5.8	66.2	23	5.1	73.4	48	10.4	69.4									
Writing	9	26	6.9	63.5	20	5.0	70.5	46	11.3	66.3									
Writing	10	29	7.1	67.0	18	4.4	70.5	47	10.9	68.3									
Spanish Writing	4	12	3.6	58.3	27	7.8	55.9	39	10.5	56.7									

Content Area	Grade	Content Standard																				
		1			2			3			4			5			6			Total		
		Mean	SD	Mean % of Max.	Mean	SD	Mean % of Max.	Mean	SD	Mean % of Max.	Mean	SD	Mean % of Max.	Mean	SD	Mean % of Max.	Mean	SD	Mean % of Max.	Mean	SD	Mean % of Max.
Mathematics	5	13	4.0	69.3	12	4.8	64.5	14	4.0	72.8	13	3.9	65.3	13	4.2	68.2	65	18.7	68.0			
Mathematics	6	10	3.9	56.1	11	3.4	64.3	13	3.6	72.9	15	4.6	66.5	8	3.2	60.5	56	16.7	64.5			
Mathematics	7	14	5.8	55.1	9	4.0	53.4	11	3.9	58.8	13	5.5	48.4	47	17.5	53.5						
Mathematics	8	10	5.5	47.7	11	4.3	52.2	7	3.6	45.1	15	5.8	56.6	44	17.6	51.0						
Mathematics	9	8	3.4	45.5	13	5.8	48.2	8	3.7	36.3	9	4.7	41.3	37	16.1	42.9						
Mathematics	10	8	4.1	45.7	11	5.1	42.7	10	4.1	44.5	8	4.3	34.3	36	16.1	41.6						
Science	8	19	5.5	68.8	12	3.6	58.9	13	4.1	58.8	11	4.0	57.1	5	1.8	61.0	60	16.8	61.4			

NOTE: In Mathematics grades 5 through 10, CS 4 and 5 are reported together. In Mathematics grades 7 through 10, CS 1 and 6 are reported together. In Science grade 8, CS 5 and 6 are reported together.

Table 12. Raw Score Descriptive Statistics by Sub-Content Area

Content Area	Grade	Sub-Content Area											
		1			2			3			4		
		Mean	SD	Mean % of Max.	Mean	SD	Mean % of Max.	Mean	SD	Mean % of Max.	Mean	SD	Mean % of Max.
Reading	3	17	4.6	71.3	17	3.87	82.7						
Reading	4	25	7.6	64.5	17	3.6	76.8	9	2.5	70.1			
Reading	5	24	7.5	63.3	18	5.9	61.5	6	1.4	76.2			
Reading	6	30	8.4	66.2	22	7.6	60.1	5	1.7	63.6			
Reading	7	13	3.3	73.7	31	9.0	69.8	5	1.7	57.6	8	2.9	59.3
Reading	8	14	4.3	66.4	24	5.9	74.8	5	1.9	58.7	10	3.0	68.0
Reading	9	23	6.9	70.9	13	4.3	64.2	6	2.2	55.2	12	4.3	61.9
Reading	10	22	7.4	68.2	16	5.3	60.4	6	2.3	64.3	7	2.9	56.8
Spanish Reading	3	25	7.1	65.7	7	2.3	61.1						
Spanish Reading	4	17	5.7	56.4	14	4.7	56.5	5	1.8	56.8			

Content Area	Grade	Sub-Content Area											
		5			6			7			8		
		Mean	SD	Mean % of Max.	Mean	SD	Mean % of Max.	Mean	SD	Mean % of Max.	Mean	SD	Mean % of Max.
Writing	3	12	1.8	78.7				16	3.6	80.3	11	2.6	78.1
Writing	4	9	2.7	58.7	8	1.9	72.7	15	3.5	75.5	10	2.8	74.9
Writing	5	13	3.8	60.1	8	1.9	72.0	12	2.9	73.1	11	3.2	65.8
Writing	6	13	4.1	57.9	8	1.6	70.1	13	3.6	69.3	9	3.7	57.4
Writing	7	11	2.9	63.0	8	1.7	70.4	6	2.2	57.6	13	4.0	60.7
Writing	8	13	3.4	62.1	8	1.7	77.0	11	3.1	71.0	12	3.0	73.5
Writing	9	13	3.8	59.7	8	1.7	72.6	11	3.2	70.4	10	2.9	68.5
Writing	10	12	3.2	62.5	8	2.0	71.6	10	2.6	71.8	10	2.9	69.2
Spanish Writing	4	6	2.4	53.5	7	1.9	62.3	14	4.6	59.0	7	2.8	47.7

Content Area	Grade	Sub-Content Area														
		1			2			3			4			5		
		Mean	SD	Mean % of Max.	Mean	SD	Mean % of Max.	Mean	SD	Mean % of Max.	Mean	SD	Mean % of Max.	Mean	SD	Mean % of Max.
Mathematics	5	12	3.7	71.1	7	3.2	61.5	10	3.0	73.2						
Mathematics	6	6	3.0	51.5	7	2.3	68.0	8	2.6	64.9						
Mathematics	7	7	4.4	43.4	4	3.1	33.8									
Mathematics	8	8	3.4	49.5	6	2.6	52.9	7	2.8	57.4						
Mathematics	9	9	4.7	43.0	5	2.5	38.7									
Mathematics	10	7	3.9	37.2	4	2.3	41.4									
Science	8	8	2.5	68.6	11	3.5	69.1	7	2.2	66.3	5	1.9	51.4	9	3.2	57.1

NOTE: In Reading grades 3 through 6, SA 1 and 4 are reported together.

Table 13. Reading Scale Score Correlations by Content Standard and Sub-Content Area

Grade 3 Reading (N=53590)				Grade 7 Reading (N=54313)												
	SA 1/4	SA 2	Total	CS 4	CS 5	CS 6	SA 1	SA 2	SA 3	SA 4	Total					
CS 1	.91	.83	1.00	CS 1	.71	.71	.74	.72	.89	.72	.64	.92				
SA 1/4		.66	.91	CS 4		.64	.65	.76	.78	.52	.61	.81				
SA 2			.83	CS 5			.66	.61	.79	.52	.59	.84				
Grade 3 Spanish Reading (N=1429)				CS 6			.67	.78	.52	.85	.85					
	SA 1/4	SA 2	Total	SA 1				.69	.49	.55	.77					
CS 1	.96	.75	1.00	SA 2					.58	.66	.94					
SA 1		.62	.96	SA 3						.46	.67					
SA 2			.75	SA 4							.75					
Grade 4 Reading (N=55446)								Grade 8 Reading (N=53410)								
CS 4	CS 5	CS 6	SA 1/4	SA 3	SA 3	Total	CS 4	CS 5	CS 6	SA 1	SA 2	SA 3	SA 4	Total		
CS 1	.65	.67	.67	.81	.74	.79	.88	CS 1	.63	.70	.73	.76	.79	.81	.64	.92
CS 4		.62	.62	.76	.69	.59	.79	CS 4		.56	.59	.62	.77	.51	.56	.75
CS 5			.66	.72	.61	.61	.85	CS 5			.66	.68	.65	.57	.56	.81
CS 6				.86	.61	.62	.83	CS 6				.85	.67	.59	.79	.86
SA 1/4					.69	.67	.93	SA 1					.66	.59	.59	.85
SA 2						.57	.79	SA 2						.56	.57	.84
SA 3							.77	SA 3							.50	.75
								SA 4								.74
Grade 4 Spanish Reading (N=1011)								Grade 9 Reading (N=52912)								
CS 4	CS 5	CS 6	SA 1/4	SA 3	SA 3	Total	CS 4	CS 5	CS 6	SA 1	SA 2	SA 3	SA 4	Total		
CS 1	.73	.74	.62	.83	.86	.64	.91	CS 1	.73	.70	.72	.77	.79	.78	.72	.91
CS 4		.69	.61	.84	.75	.55	.84	CS 4		.67	.70	.71	.83	.57	.78	.86
CS 5			.60	.72	.73	.54	.88	CS 5			.66	.72	.67	.57	.65	.82
CS 6				.76	.59	.60	.74	CS 6				.85	.68	.56	.79	.86
SA 1/4					.70	.56	.89	SA 1					.68	.57	.69	.87
SA 3						.54	.88	SA 2						.57	.67	.85
SA 3							.66	SA 3							.55	.72
								SA 4								.84
Grade 5 Reading (N=56314)								Grade 10 Reading (N=48998)								
CS 4	CS 5	CS 6	SA 1/4	SA 2	SA 3	Total	CS 4	CS 5	CS 6	SA 1	SA 2	SA 3	SA 4	Total		
CS 1	.69	.70	.72	.76	.77	.73	.84	CS 1	.74	.72	.74	.77	.86	.73	.64	.89
CS 4		.72	.75	.82	.87	.54	.87	CS 4		.69	.73	.79	.80	.54	.74	.87
CS 5			.75	.78	.78	.54	.88	CS 5			.68	.69	.76	.54	.60	.83
CS 6				.95	.77	.59	.90	CS 6				.86	.78	.56	.72	.88
SA 1/4					.78	.59	.93	SA 1					.75	.55	.64	.88
SA 2						.55	.89	SA 2						.57	.65	.90
SA 3							.66	SA 3							.49	.67
								SA 4								.76
Grade 6 Reading (N=55561)																
CS 4	CS 5	CS 6	SA 1/4	SA 2	SA 3	Total										
CS 1	.73	.77	.76	.93	.87	.71	.95									
CS 4		.65	.65	.79	.76	.52	.80									
CS 5			.69	.78	.82	.57	.87									
CS 6				.82	.80	.54	.84									
SA 1/4					.82	.61	.95									
SA 2						.58	.92									
SA 3							.68									

**Table 14. Writing Scale Score Correlations
by Content Standard and Sub-Content Area**

Grade 3 Writing (N=54457)						Grade 7 Writing (N=54331)						
	CS 3	SA 5	SA 7	SA 8	Total		CS 3	SA 5	SA 6	SA 7	SA 8	Total
CS 2	.60	.83	.55	.50	.83	CS 2	.76	.89	.69	.61	.72	.95
CS 3		.47	.85	.78	.90	CS 3		.65	.51	.77	.92	.92
SA 5			.41	.41	.68	SA 5			.50	.52	.62	.83
SA 7				.52	.83	SA 6				.38	.45	.65
SA 8					.73	SA 7					.59	.73
						SA 8						.86

Grade 4 Writing (N=55485)							Grade 8 Writing (N=53464)						
	CS 3	SA 5	SA 6	SA 7	SA 8	Total		CS 3	SA 5	SA 6	SA 7	SA 8	Total
CS 2	.70	.84	.75	.64	.59	.93	CS 2	.75	.93	.70	.68	.67	.96
CS 3		.60	.49	.89	.81	.89	CS 3		.67	.49	.90	.81	.89
SA 5			.48	.54	.51	.78	SA 5			.51	.62	.58	.89
SA 6				.42	.41	.68	SA 6				.42	.42	.66
SA 7					.59	.81	SA 7					.58	.80
SA 8						.75	SA 8						.76

Grade 4 Spanish Writing (N=1003)							Grade 9 Writing (N=52966)						
	CS 3	SA 5	SA 6	SA 7	SA 8	Total		CS 3	SA 5	SA 6	SA 7	SA 8	Total
CS 2	.65	.88	.84	.54	.49	.80	CS 2	.79	.92	.74	.73	.73	.97
CS 3		.57	.58	.90	.69	.97	CS 3		.72	.56	.90	.86	.91
SA 5			.53	.48	.45	.71	SA 5			.59	.66	.65	.89
SA 6				.48	.40	.70	SA 6				.49	.50	.71
SA 7					.49	.86	SA 7					.64	.83
SA 8						.68	SA 8						.81

Grade 5 Writing (N=56395)							Grade 10 Writing (N=48995)						
	CS 3	SA 5	SA 6	SA 7	SA 8	Total		CS 3	SA 5	SA 6	SA 7	SA 8	Total
CS 2	.77	.92	.73	.68	.72	.96	CS 2	.76	.89	.71	.68	.71	.97
CS 3		.71	.55	.87	.88	.92	CS 3		.66	.57	.83	.86	.89
SA 5			.54	.63	.64	.88	SA 5			.55	.59	.60	.85
SA 6				.46	.48	.70	SA 6				.45	.48	.70
SA 7					.64	.80	SA 7					.60	.78
SA 8						.84	SA 8						.81

Grade 6 Writing (N=55625)						
	CS 3	SA 5	SA 6	SA 7	SA 8	Total
CS 2	.78	.95	.71	.69	.73	.95
CS 3		.74	.54	.88	.88	.93
SA 5			.54	.66	.67	.90
SA 6				.45	.48	.66
SA 7					.67	.83
SA 8						.85

**Table 15. Mathematics and Science Scale Score Correlations
by Content Standard and Sub-Content Area**

Grade 5 Mathematics (N=56601)									Grade 8 Mathematics (N=53348)							
	CS 2	CS 3	CS	CS 6	SA 1	SA 2	SA 3	Total	CS 2	CS 3	CS 4/5	SA 1	SA 2	SA	Total	
CS 1	.68	.64	.69	.69	.87	.62	.58	.86	CS 1/6	.73	.72	.74	.71	.68	.66	.87
CS 2		.64	.66	.67	.65	.88	.61	.84	CS 2		.72	.76	.96	.69	.67	.89
CS 3			.66	.65	.62	.59	.89	.82	CS 3			.74	.70	.75	.66	.87
CS 4/5				.67	.67	.61	.61	.86	CS 4/5				.73	.69	.87	.91
CS 6					.70	.61	.59	.85	SA 1					.64	.65	.86
SA 1						.60	.57	.82	SA 2						.60	.78
SA 2								.55	SA 3							.80
SA 3								.75								

Grade 6 Mathematics (N=55694)									Grade 9 Mathematics (N=53083)						
	CS 2	CS 3	CS	CS 6	SA 1	SA 2	SA 3	Total	CS 2	CS 3	CS 4/5	SA 1	SA 2	Total	
CS 1	.69	.66	.71	.68	.83	.61	.63	.87	CS 1/6	.77	.73	.69	.74	.83	.87
CS 2		.65	.68	.66	.67	.87	.61	.84	CS 2		.79	.73	.94	.70	.94
CS 3			.67	.63	.64	.58	.61	.82	CS 3			.70	.79	.66	.89
CS 4/5				.66	.68	.61	.89	.87	CS 4/5				.71	.66	.82
CS 6					.78	.59	.60	.83	SA 1					.66	.91
SA 1						.59	.61	.84	SA 2						.78
SA 2								.55							
SA 3								.78							

Grade 7 Mathematics (N=54398)							Grade 10 Mathematics (N=49114)						
	CS 2	CS 3	CS	SA 1	SA 2	Total	CS 2	CS 3	CS 4/5	SA 1	SA 2	Total	
CS 1/6	.75	.73	.78	.89	.68	.91	CS 1/6	.71	.69	.65	.68	.62	.82
CS 2		.70	.74	.69	.68	.86	CS 2		.77	.70	.94	.69	.92
CS 3			.73	.69	.64	.85	CS 3			.68	.74	.87	.90
CS 4/5				.72	.80	.91	CS 4/5				.67	.61	.81
SA 1					.64	.84	SA 1					.67	.88
SA 2						.78	SA 2						.79

Grade 8 Science (N=53285)										
	CS 2	CS 3	CS 4	CS 5/6	SA 1	SA 2	SA 3	SA 4	SA 5	Total
CS 1	.72	.72	.68	.63	.83	.89	.61	.62	.65	.87
CS 2		.73	.72	.64	.58	.65	.83	.87	.68	.88
CS 3			.73	.65	.58	.65	.62	.64	.70	.89
CS 4				.64	.55	.62	.62	.62	.94	.87
CS 5/6					.51	.57	.55	.55	.62	.77
SA 1						.55	.49	.50	.53	.70
SA 2							.56	.57	.60	.78
SA 3								.55	.59	.74
SA 4									.59	.77
SA 5										.83

Table 16. Cronbach Alpha Reliability Coefficients for Content Standards

Content Area	Grade	Content Standard						Total
		1	2	3	4	5	6	
Reading	3	.90						.90
Reading	4	.85			.75	.77	.70	.93
Reading	5	.75			.79	.79	.81	.94
Reading	6	.87			.73	.78	.67	.94
Reading	7	.83			.78	.83	.71	.94
Reading	8	.85			.76	.73	.76	.94
Reading	9	.82			.76	.78	.82	.94
Reading	10	.80			.81	.73	.81	.94
Spanish Reading	3	.87						.87
Spanish Reading	4	.80			.69	.74	.56	.91
Writing	3		.75	.88				.91
Writing	4		.82	.87				.91
Writing	5		.85	.84				.91
Writing	6		.86	.86				.92
Writing	7		.84	.82				.90
Writing	8		.85	.84				.91
Writing	9		.87	.83				.92
Writing	10		.87	.80				.91
Spanish Writing	4		.75	.85				.88
Mathematics	5	.77	.76	.76	.75		.78	.94
Mathematics	6	.74	.69	.75	.81		.75	.94
Mathematics	7	.82	.74	.68	.80			.93
Mathematics	8	.82	.74	.71	.81			.93
Mathematics	9	.77	.83	.72	.77			.93
Mathematics	10	.78	.81	.74	.76			.93
Science	8	.81	.75	.74	.78	.57		.93

Table 17. Cronbach Alpha Reliability Coefficients for Sub-Content Areas

Content Area	Grade	Sub-Content Area							
		1	2	3	4	5	6	7	8
Reading	3	.76	.84						
Reading	4	.85	.78	.70					
Reading	5	.86	.83	.51					
Reading	6	.88	.86	.51					
Reading	7	.75	.88	.51	.64				
Reading	8	.77	.86	.62	.72				
Reading	9	.85	.78	.63	.79				
Reading	10	.85	.82	.66	.68				
Spanish Reading	3	.83	.59						
Spanish Reading	4	.82	.71	.52					
Writing	3					.76		.82	.74
Writing	4					.69	.73	.78	.75
Writing	5					.76	.69	.73	.76
Writing	6					.81	.70	.76	.79
Writing	7					.76	.68	.62	.77
Writing	8					.75	.67	.77	.73
Writing	9					.78	.73	.77	.72
Writing	10					.74	.68	.69	.72
Spanish Writing	4					.72	.63	.79	.60
Mathematics	5	.74	.62	.67					
Mathematics	6	.69	.54	.65					
Mathematics	7	.78	.65						
Mathematics	8	.68	.60	.63					
Mathematics	9	.80	.70						
Mathematics	10	.77	.58						
Science	8	.63	.71	.65	.56	.73			

Table 18. Multiple-Choice Item Analyses, Grade 3 Reading

Item #	Session	CS	SA	R	ITT	Omit %	p-Value	Item #	Session	CS	SA	R	ITT	Omit %	p-Value
1	S1	1	1/4	.35	.1	.83		23	S2	1	2	.45	.0	.88	
2	S1	1	1/4	.36	.3	.96		24	S2	1	2	.40	.2	.60	
6	S1	1		.43	.1	.83		25	S2	1	2	.46	.1	.80	
7	S1	1	1/4	.31	.2	.81		26	S2	1		.43	.3	.56	
8	S1	1	1/4	.45	.3	.85		27	S2	1	2	.60	.1	.81	
9	S1	1	2	.50	.2	.90		28	S2	1	2	.44	.4	.72	
10	S1	1	2	.47	.3	.91		29	S2	1		.18	.2	.29	
11	S1	1	2	.33	.3	.86		30	S2	1	2	.49	.3	.81	
12	S1	1	2	.44	.1	.95		31	S2	1	2	.53	.1	.90	
13	S1	1	2	.41	.2	.95		32	S2	1	2	.53	.7	.84	
14	S1	1	2	.43	.4	.85		33	S2	1		.33	.8	.90	
15	S1	1		.44	.2	.72		34	S2	1	2	.48	.2	.81	
16	S1	1	1/4	.46	.2	.90		35	S2	1	2	.45	.2	.89	
17	S1	1	1/4	.51	.4	.87		37	S2	1	1/4	.42	.2	.88	
18	S1	1	1/4	.41	.3	.53		38	S2	1	1/4	.39	.3	.54	
19	S1	1	1/4	.53	.3	.83		40	S2	1		.54	.5	.79	
20	S1	1		.47	.8	.81		41	S2	1	1/4	.39	1.1	.65	

Mean R_ITT: .44

Mean p-value: .79

Table 19. Constructed-Response Item Analyses, Grade 3 Reading

Item #	Session	CS	SA	R	ITT	Percent of Students Obtaining Score Level				Omit %	p-Value	
						0	1	2	3			4
3	S1	1	1/4	.49	3.2	4.8	91.3				.7	.94
4	S1	1	1/4	.42	17.8	41.8	40.0				.5	.61
5	S1	1	1/4	.56	13.1	22.9	22.3	41.0			.7	.63
21	S1	1	2	.43	5.8	7.1	86.6				.5	.90
22	S1	1	2	.33	13.9	85.6					.5	.86
36	S2	1	2	.50	25.0	26.6	47.8				.7	.61
39	S2	1	1/4	.37	49.5	26.5	23.2				.9	.36
42	S2	1	1/4	.53	10.0	8.6	20.3	18.3	41.7		1.1	.68

Mean R_ITT: .46

Mean p-value: .70

Table 20. Multiple-Choice Item Analyses, Grade 3 Spanish Reading

Item #	Session	CS	SA	R	ITT	Omit %	p-Value	Item #	Session	CS	SA	R	ITT	Omit %	p-Value
1	S1	1	1/4	.31	.2	.90		22	S2	1	1/4	.48	.8	.90	
2	S1	1	1/4	.23	.4	.33		23	S2	1	1/4	.35	.3	.64	
5	S1	1		.38	1.6	.77		24	S2	1	1/4	.49	.2	.85	
6	S1	1	2	.32	.1	.73		28	S2	1	2	.13	1.2	.42	
7	S1	1	2	.44	.3	.68		29	S2	1	2	.34	.4	.87	
8	S1	1	2	.39	.3	.86		30	S2	1	2	.03	.7	.45	
9	S1	1	2	.34	.4	.54		31	S2	1		.11	.8	.24	
10	S1	1	2	.33	.8	.63		32	S2	1		.28	.6	.57	
11	S1	1	1/4	.18	1.5	.66		33	S2	1	1/4	.49	1.5	.76	
12	S1	1	1/4	.32	2.0	.74		36	S2	1	1/4	.41	1.7	.58	
14	S1	1	1/4	.34	.5	.43		37	S2	1	2	.45	1.2	.74	
16	S1	1	1/4	.38	.9	.83		38	S2	1	2	.27	1.5	.34	
18	S1	1	1/4	.36	2.5	.77		39	S2	1	2	.41	1.6	.68	
19	S1	1	1/4	.40	2.0	.76		40	S2	1	2	.23	1.5	.41	
21	S2	1	1/4	.47	.6	.82									

Mean R_ITT: .34

Mean p-value: .65

Table 21. Constructed-Response Item Analyses, Grade 3 Spanish Reading

Item #	Session	CS	SA	R	ITT	Percent of Students Obtaining Score Level					Omit %	p-Value
						0	1	2	3	4		
3	S1	1	1/4	.47		12.5	9.2	17.4	56.0		5.0	.71
4	S1	1	1/4	.36		48.3	37.6	12.5			1.5	.31
13	S1	1	1/4	.49		15.7	18.4	65.4			.5	.75
15	S1	1	1/4	.42		35.5	19.1	44.3			1.0	.54
17	S1	1	1/4	.46		8.5	11.6	78.4			1.5	.84
20	S1	1	1/4	.29		21.4	75.8				2.8	.76
25	S2	1	1/4	.34		3.1	54.2	42.1			.6	.69
26	S2	1	1/4	.45		12.9	35.2	5.9			.9	.69
27	S2	1	1/4	.41		43.3	29.0	26.2			1.5	.41
34	S2	1	1/4	.57		5.9	11.9	24.6	17.4	39.4	.8	.68
35	S2	1	1/4	.45		35.5	36.3	26.9			1.3	.45

Mean R_ITT: .43

Mean p-value: .62

Table 22. Multiple-Choice Item Analyses, Grade 3 Writing

Item #	Session	CS	SA	R	ITT	Omit %	p-Value	Item #	Session	CS	SA	R	ITT	Omit %	p-Value
1	S1	3	7	.25	.2	.62		21	S2	3	8	.35	.2	.95	
2	S1	3	7	.33	.3	.68		22	S2	3	7	.40	.1	.71	
3	S1	3	8	.37	.2	.86		23	S2	3	7	.38	.2	.57	
4	S1	3	7	.50	.2	.89		24	S2	3	7	.46	.4	.85	
5	S1	3	7	.42	.2	.95		25	S2	2		.44	.1	.91	
7	S1	3	7	.28	.2	.81		26	S2	2		.40	.3	.64	
8	S1	3	7	.45	.2	.87		28	S2	3	8	.44	.1	.74	
9	S1	3	7	.44	.4	.84		29	S2	3	8	.28	.4	.56	
10	S1	3	7	.44	.2	.86		30	S2	2		.42	.2	.92	
11	S1	3	7	.43	.3	.91		31	S2	2		.45	.7	.66	
12	S1	3	7	.43	.5	.87		32	S2	3	7	.46	3.4	.82	
14	S1	3	7	.51	.2	.74		33	S2	3	8	.50	.1	.88	
15	S1	3	7	.37	.3	.61		34	S2	3	8	.37	.4	.77	
16	S1	2		.39	.3	.61		35	S2	3	8	.32	.6	.86	
17	S1	2		.39	.3	.92		36	S2	3	8	.35	.2	.86	
18	S1	2		.30	.3	.98		37	S2	3	7	.37	.3	.87	
19	S2	3	8	.38	.1	.88		38	S2	3	7	.46	.5	.86	
20	S2	3	8	.40	.1	.92									

Mean R_ITT: .40

Mean p-value: .81

Table 23. Constructed-Response Item Analyses, Grade 3 Writing

Item #	Session	CS	SA	R	ITT	Percent of Students Obtaining Score Level					Omit %	p-Value
						0	1	2	3	4		
6 A	S1	3	8	.43	.23.1	76.7					.2	.77
6 B	S1	3	7	.22	12.8	87.0					.2	.87
6 C	S1	3	8	.31	45.6	54.1					.2	.54
6 D	S1	3	8	.42	20.8	79.1					.2	.79
6 E	S1	3	8	.36	46.2	53.6					.2	.54
6 F	S1	3	7	.48	14.5	85.3					.2	.85
13 A	S1	2	5	.31	1.7	80.9	17.0				.4	.57
13 B	S1	2	5	.33	1.5	98.1					.4	.98
13 C	S1	2	5	.38	7.7	91.9					.4	.92
13 D	S1	3	5	.39	3.4	96.2					.4	.96
27 A	S2	2	5	.34	3.2	84.6	11.8				.4	.54
27 B	S2	2	5	.33	1.4	98.3					.4	.98
27 C	S2	2	5	.38	8.0	91.7					.4	.92
27 D	S2	3	5	.40	3.2	96.4					.4	.96
39 A	S2	2	5	.38	5.4	81.6	12.5				.6	.53
39 B	S2	2	5	.40	4.5	94.9					.6	.95
39 C	S2	2	5	.40	11.6	87.9					.6	.88
39 D	S2	3	5	.39	3.6	95.8					.6	.96

Mean R_ITT: .37

Mean p-value: .81

Table 24. Multiple-Choice Item Analyses, Grade 4 Reading

Item #	Session	CS	SA	R	ITT	Omit %	p-Value	Item #	Session	CS	SA	R	ITT	Omit %	p-Value
4	S3	1	2	.51	.1	.92		41	S4	5		.42	1.9	.88	
5	S3	4	2	.31	.1	.50		42	S4	1	2	.39	.3	.93	
6	S3	4	2	.48	.2	.88		43	S4	1	3	.30	.5	.92	
7	S3	1	2	.46	.2	.82		45	S4	4	1/4	.46	.2	.77	
8	S3	1	3	.32	.3	.38		46	S4	6	1/4	.40	.4	.72	
9	S3	1	2	.47	.5	.87		47	S4	4	1/4	.36	.4	.53	
12	S3	1	1/4	.41	.3	.68		48	S4	4	1/4	.50	1.5	.76	
13	S3	6	1/4	.42	.4	.67		49	S4	1	3	.42	.5	.62	
14	S3	6	3	.16	.5	.43		50	S4	5		.46	.9	.72	
15	S3	4	1/4	.45	.4	.66		51	S4	1	3	.49	.9	.91	
16	S3	5		.46	1.0	.85		52	S4	1	3	.47	1.1	.92	
17	S3	6	1/4	.30	.4	.47		53	S4	1	3	.53	.7	.86	
18	S3	4	1/4	.42	.5	.53		54	S4	1	1/4	.48	.8	.69	
20	S3	5		.44	.5	.92		55	S4	1	1/4	.42	.7	.90	
21	S3	1	3	.47	.5	.80		56	S4	1	1/4	.45	.8	.60	
22	S3	1	3	.01	.9	.29		101	S6	6	3	.45	.9	.71	
23	S3	5		.43	1.6	.67		104	S6	6	1/4	.50	.5	.93	
28	S4	1	2	.36	.1	.93		105	S6	6	1/4	.07	.2	.31	
29	S4	1	2	.44	.2	.70		106	S6	4	1/4	.51	.2	.74	
30	S4	1	2	.43	.1	.87		107	S6	5		.24	.3	.72	
31	S4	1	3	.48	.4	.68		108	S6	4	2	.25	.2	.63	
32	S4	4	1/4	.45	.1	.83		109	S6	4	2	.32	.4	.59	
33	S4	4	1/4	.26	.2	.49		110	S6	4	2	.50	1.7	.79	
34	S4	4	1/4	.31	.3	.33		113	S6	5		.43	.5	.64	
35	S4	4	1/4	.46	.4	.78		114	S6	5		.45	.5	.79	
36	S4	1	1/4	.51	.6	.85		117	S6	5		.34	1.1	.53	
37	S4	1	3	.45	.9	.74		118	S6	1	3	.52	1.1	.84	
38	S4	1	2	.44	.1	.94		119	S6	5		.47	1.2	.88	
39	S4	1	2	.49	.2	.91		120	S6	5		.44	1.2	.92	
40	S4	1	2	.44	.8	.85									

Mean R_ITT: .41

Mean p-value: .73

Table 25. Constructed-Response Item Analyses, Grade 4 Reading

Item #	Session	CS	SA	R	ITT	Percent of Students Obtaining Score Level					Omit %	p-Value
						0	1	2	3	4		
10	S3	6	1/4	.46		26.6	22.7	49.9			.8	.61
11	S3	6	1/4	.35		44.4	30.9	23.4			1.3	.39
19	S3	6	1/4	.46		22.4	31.1	30.7	14.5		1.4	.45
24	S3	5		.46		27.2	9.1	63.2			.6	.68
25	S3	1	2	.36		3.9	4.9	90.6			.7	.93
26	S3	1	2	.32		9.8	89.4				.8	.89
44	S4	1	2	.44		17.6	22.6	59.2			.7	.70
57	S4	1	1/4	.46		37.6	26.5	34.7			1.2	.48
58	S4	1	1/4	.43		8.3	7.5	21.9	16.1	44.7	1.6	.70
102	S6	6	1/4	.66		5.3	4.0	2.8	13.5	73.9	.4	.86
103	S6	6	1/4	.52		23.8	17.0	58.5			.7	.67
111	S6	4	2	.28		55.4	28.6	15.2			.8	.30
112	S6	5		.55		15.9	25.3	31.4	26.5		.8	.56
115	S6	5		.48		41.2	32.8	25.3			.7	.42
116	S6	5		.37		51.1	43.1	4.8			1.0	.26

Mean R_ITT: .45

Mean p-value: .59

Table 26. Multiple-Choice Item Analyses, Grade 4 Spanish Reading

Item #	Session	CS	SA	R	ITT	Omit %	p-Value	Item #	Session	CS	SA	R	ITT	Omit %	p-Value
4	S3	1	2	.43	.3	.52		42	S4	6	3	.41	3.8	.74	
5	S3	1	3	.03	.2	.46		43	S4	6	1/4	.29	4.1	.44	
6	S3	6	2	.24	.6	.64		44	S4	1	1/4	.07	5.1	.20	
7	S3	5		.26	.3	.38		45	S4	6	1/4	.42	4.8	.80	
8	S3	5		.30	.9	.40		46	S4	1	1/4	.48	5.0	.67	
10	S3	1	2	.35	.3	.60		47	S4	1	1/4	.48	5.6	.64	
12	S3	4	2	.23	.8	.61		48	S4	4	1/4	.39	6.0	.36	
15	S3	4	2	.39	2.1	.50		92	S6	1	2	.38	.2	.84	
17	S3	1	1/4	.39	2.6	.62		93	S6	1	3	.35	.2	.69	
18	S3	4	1/4	.34	2.9	.59		94	S6	1	3	.38	.3	.51	
19	S3	6	1/4	.40	3.1	.85		95	S6	1	2	.34	.1	.74	
20	S3	6	3	.23	3.5	.31		96	S6	1	2	.39	.4	.81	
21	S3	1	1/4	.44	4.1	.77		97	S6	1	2	.05	.4	.23	
22	S3	4	1/4	.24	4.2	.30		100	S6	1	1/4	.38	.0	.78	
23	S3	4	1/4	.09	4.5	.36		101	S6	1	1/4	.40	.0	.92	
24	S3	1	3	.49	4.4	.58		102	S6	4	1/4	.24	.4	.41	
25	S3	1	1/4	.37	4.7	.68		104	S6	1	1/4	.39	.2	.60	
26	S4	1	2	.28	.1	.53		106	S6	5		.33	.3	.35	
27	S4	1	3	.39	.2	.74		107	S6	5		.36	.7	.51	
28	S4	4	2	.31	.1	.66		108	S6	5		.29	.4	.65	
30	S4	4	2	.25	3.0	.40		109	S6	5		.37	.6	.70	
31	S4	1	2	.42	.1	.61		110	S6	5		.15	.7	.55	
33	S4	4	2	.21	.4	.30		111	S6	5		.12	1.0	.28	
34	S4	1	1/4	.40	.4	.81		112	S6	5		.35	.5	.74	
35	S4	1	1/4	.39	.9	.70		113	S6	5		.24	.6	.64	
36	S4	6	3	.32	.9	.49		114	S6	5		.44	.6	.62	
38	S4	4	1/4	.38	1.1	.56		115	S6	5		.42	.8	.54	
41	S4	1	1/4	.27	3.4	.33									

Mean R_ITT: .33

Mean p-value: .57

Table 27. Constructed-Response Item Analyses, Grade 4 Spanish Reading

Item #	Session	CS	SA	R	ITT	Percent of Students Obtaining Score Level					Omit %	p-Value
						0	1	2	3	4		
9	S3	5		.53	22.9	13.0	62.0				2.1	.68
11	S3	1	2	.60	22.4	5.4	4.4	8.0	58.8		1.1	.68
13	S3	5		.25	67.2	14.9	8.4	6.4			3.1	.17
14	S3	4	2	.40	56.9	20.7	18.4				4.1	.29
16	S3	5		.52	43.8	23.5	29.1				3.6	.41
29	S4	5		.58	8.1	9.2	13.3	69.1			.3	.81
32	S4	4	2	.46	64.0	16.7	16.8				2.5	.25
37	S4	6	1/4	.40	44.5	26.8	18.1	8.2			2.4	.29
39	S4	6	1/4	.47	42.1	54.7					3.2	.55
40	S4	4	1/4	.49	49.6	46.2					4.3	.46
98	S6	1	2	.39	3.6	15.5	78.9				2.0	.87
99	S6	5		.39	7.8	20.2	49.9	21.4			.8	.61
103	S6	4	1/4	.40	8.1	36.7	54.4				.8	.73
105	S6	4	1/4	.47	35.6	6.9	56.3				1.2	.60

Mean R_ITT: .46

Mean p-value: .53

Table 28. Multiple-Choice Item Analyses, Grade 4 Writing

Item #	Session	CS	SA	R	ITT	Omit %	p-Value	Item #	Session	CS	SA	R	ITT	Omit %	p-Value
59	S5	3	7	.35	.1	.92		80	S5	3	7	.47	.4	.84	
60	S5	3	7	.34	.2	.92		81	S5	2	5	.42	.5	.60	
61	S5	3	7	.29	.4	.86		82	S5	3	7	.38	.5	.86	
62	S5	3	7	.33	.5	.91		83	S5	3	7	.49	.7	.67	
63	S5	3	7	.36	.7	.91		84	S5	3	7	.40	.3	.60	
64	S5	3	7	.31	1.0	.96		85	S5	3	7	.41	.4	.69	
65	S5	2		.42	.2	.45		86	S5	3	7	.41	.7	.55	
66	S5	2		.35	.2	.70		87	S5	3	7	.28	.9	.40	
67	S5	2		.45	.2	.82		88	S5	3	7	.48	.4	.84	
68	S5	3	8	.36	.1	.72		89	S5	3	7	.37	.9	.56	
69	S5	3	8	.29	.1	.80		90	S5	3	7	.46	2.0	.80	
70	S5	3	8	.31	.2	.90		91	S5	2		.40	.2	.91	
71	S5	3	8	.43	.1	.68		92	S5	2		.46	.3	.71	
72	S5	3	8	.45	.3	.61		93	S5	2		.41	.5	.92	
73	S5	3	8	.35	.5	.54		94	S5	2		.48	2.3	.78	
74	S5	3	8	.38	.3	.60		95	S5	3	7	.44	2.5	.88	
75	S5	3	8	.45	.5	.80		96	S5	2		.33	1.1	.74	
76	S5	3	8	.41	.8	.62		97	S5	2		.40	1.2	.79	
78	S5	2	5	.34	.3	.78		98	S5	3	8	.30	.4	.91	
79	S5	2	5	.31	.3	.55		99	S5	3	8	.31	.5	.86	

Mean R_ITT: .39

Mean p-value: .75

Table 29. Constructed-Response Item Analyses, Grade 4 Writing

Item #	Session	CS	SA	R	ITT	Percent of Students Obtaining Score Level					Omit %	p-Value
						0	1	2	3	4		
1	S1	2	6	.05	.5	99.5					.0	1.00
2 A	S2	3	8	.37	18.8	80.3					.9	.80
2 B	S2	3	8	.42	11.9	87.1					1.0	.87
2 C	S2	3	7	.38	33.6	65.4					1.0	.65
2 D	S2	3	7	.30	52.6	46.4					1.0	.46
2 E	S2	3	7	.13	17.2	81.8					1.0	.82
2 F	S2	3	8	.46	23.5	75.5					1.0	.76
3 A	S2	2	6	.58	3.0	3.9	35.9	41.6	15.5		.1	.66
3 B	S2	2	6	.62	.4	5.6	40.2	38.8	14.8		.1	.65
3 C	S2	3	6	.54	.7	25.2	74.1				.1	.87
27	S3	2	5	.52	1.6	7.5	47.1	34.9	7.7		1.2	.59
77	S5	2	5	.54	3.8	9.2	46.8	32.3	7.4		.5	.57
100	S5	2	5	.54	5.2	1.7	46.9	29.2	7.4		.6	.55

Mean R_ITT: .43

Mean p-value: .71

Table 30. Multiple-Choice Item Analyses, Grade 4 Spanish Writing

Item #	Session	CS	SA	R	ITT	Omit %	p-Value	Item #	Session	CS	SA	R	ITT	Omit %	p-Value
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50	S5	3		.46	.2	.65	71	S5	3	7	.24	1.0	.43
51	S5	3		.20	.5	.70	72	S5	3	7	.35	.3	.41
52	S5	3		.48	.6	.46	73	S5	3	7	.35	.3	.57
53	S5	3		.41	.5	.64	74	S5	3	7	.23	1.2	.37
54	S5	3		.38	.3	.45	75	S5	3	7	.23	.8	.34
55	S5	3		.36	.8	.83	76	S5	3	7	.26	1.0	.30
56	S5	3		.36	.5	.79	77	S5	3	7	.21	1.7	.30
57	S5	3	7	.35	.2	.85	78	S5	3	8	.00	1.0	.25
58	S5	3	7	.33	.5	.87	79	S5	3	8	.27	.9	.73
59	S5	3	7	.27	1.3	.94	80	S5	3	8	.34	1.3	.69
60	S5	3	7	.38	1.2	.64	81	S5	3	8	.13	1.0	.28
61	S5	3	7	.38	.5	.47	82	S5	3	8	.13	1.2	.51
62	S5	3	7	.38	.5	.75	83	S5	3	8	.37	2.2	.64
63	S5	3	7	.32	.6	.60	84	S5	3	8	.18	2.9	.42
64	S5	3	7	.37	.9	.48	85	S5	3	8	.30	1.2	.39
65	S5	3	7	.37	1.2	.69	86	S5	3	8	.30	1.8	.45
66	S5	3	7	.28	1.1	.48	87	S5	3	8	.15	1.7	.43
68	S5	3	7	.41	.3	.59	88	S5	3	8	.29	1.3	.41
69	S5	3	7	.27	.8	.56	89	S5	3	8	.25	2.2	.42
70	S5	3	7	.34	1.9	.61	90	S5	3	8	.33	1.9	.50

Mean R_ITT: .30

Mean p-value: .55

Table 31. Constructed-Response Item Analyses, Grade 4 Spanish Writing

Item #	Session	CS	SA	R ITT	Percent of Students Obtaining Score Level					Omit %	p-Value
					0	1	2	3	4		
1	S1	2	6	.10	3.4	96.6				.0	.97
2 A	S2	3	7	.36	9.5	89.3				1.2	.89
2 B	S2	3	7	.40	37.0	61.8				1.2	.62
2 C	S2	3	7	.32	26.6	72.2				1.2	.72
2 D	S2	3	8	.24	31.6	67.2				1.2	.67
2 E	S2	3	7	.43	33.4	65.4				1.2	.65
2 F	S2	3	8	.44	62.1	36.7				1.2	.37
3 A	S2	2	6	.51	7.7	6.8	27.6	47.2	10.5	.3	.61
3 B	S2	2	6	.59	1.6	9.0	41.6	41.7	5.9	.3	.60
3 C	S2	3	6	.41	4.6	90.4	4.7			.3	.50
49	S4	2	5	.53	8.9	17.4	36.8	27.4	3.7	5.8	.47
67	S5	2	5	.59	4.1	8.3	41.4	34.5	10.6	1.2	.59
91	S5	2	5	.44	6.3	9.1	45.7	28.4	8.0	2.6	.54

Mean R_ITT: .42

Mean p-value: .63

Table 32. Multiple-Choice Item Analyses, Grade 5 Reading

Item #	Session	CS	SA	R_ITT	Omit %	p-Value	Item #	Session	CS	SA	R_ITT	Omit %	p-Value
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4	S3	1	2	.46	.2	.72	45	S4	4	2	.49	2.5	.85
5	S3	1	2	.31	.2	.71	46	S4	5		.19	2.2	.20
6	S3	4	2	.34	.2	.56	90	S6	1	1/4	.35	.1	.82
8	S3	6	1/4	.39	.2	.58	91	S6	6	1/4	.50	.1	.89
9	S3	4	1/4	.47	.3	.65	92	S6	4	1/4	.38	.5	.87
10	S3	6	1/4	.45	.7	.65	93	S6	1	2	.40	.1	.78
12	S3	1	3	.45	.3	.86	94	S6	1	2	.44	.3	.71
13	S3	1	3	.18	.4	.33	95	S6	4	2	.25	1.0	.63
14	S3	4	2	.31	.2	.71	96	S6	4	2	.30	2.8	.60
15	S3	4	2	.47	.3	.78	97	S6	4	2	.47	.3	.87
18	S3	5		.40	4.0	.86	99	S6	5		.52	.2	.84
20	S4	6	1/4	.24	.3	.43	100	S6	5		.27	.9	.46
21	S4	6	1/4	.38	.4	.66	102	S6	6	3	.60	.1	.79
22	S4	5	1/4	.40	.3	.88	103	S6	6	1/4	.14	.3	.63
23	S4	5		.29	.4	.74	104	S6	6	1/4	.45	.9	.57
26	S4	4	1/4	.44	.1	.88	105	S6	6	1/4	.34	.3	.46
27	S4	4	1/4	.26	.2	.51	106	S6	5		.30	.7	.59
28	S4	4	1/4	.40	.3	.43	107	S6	5		.31	1.7	.58
29	S4	1	1/4	.48	.3	.89	109	S6	5		.49	.6	.62
31	S4	4	1/4	.47	.2	.84	110	S6	5		.45	.6	.65
32	S4	6	1/4	.46	.3	.78	111	S6	5		.18	1.1	.33
33	S4	5		.46	1.0	.80	112	S6	5		.52	.6	.81
34	S4	1	3	.42	.3	.95	113	S6	5		.43	.6	.90
35	S4	1	3	.41	.4	.95	114	S6	5		.38	.7	.95
36	S4	1	3	.41	.4	.90	117	S6	6	1/4	.49	1.9	.77
37	S4	1	2	.48	1.2	.72	118	S6	4	1/4	.41	2.3	.58
38	S4	4	2	.54	.8	.75	119	S6	4	1/4	.45	2.3	.52
41	S4	1	2	.47	2.2	.84	120	S6	1	3	.46	2.0	.87
42	S4	4	2	.50	3.2	.79	121	S6	1	3	.06	2.9	.44
43	S4	5	2	.48	1.9	.74	122	S6	1	3	.01	2.3	.29
44	S4	6	2	.46	2.0	.73							

Mean R_ITT (item 122 excluded): .40

Mean p-value (item 122 excluded): .70

Table 33. Constructed-Response Item Analyses, Grade 5 Reading

Item #	Session	CS	SA	R_ITT	Percent of Students Obtaining Score Level					Omit %	p-Value
					0	1	2	3	4		
7	S3	1	2	.57	26.4	32.5	25.1	15.5		.5	.43
11	S3	6	1/4	.51	18.4	26.2	32.4	22.3		.7	.53
16	S3	4	2	.38	28.7	55.7	13.5			2.1	.41
17	S3	5		.60	7.5	14.2	33.3	44.2		.8	.71
24	S4	6	1/4	.31	34.0	33.3	31.4			1.3	.48
25	S4	6	1/4	.46	28.2	16.1	54.0			1.6	.62
30	S4	6	1/4	.57	4.1	8.4	55.2	31.8		.5	.71
39	S4	4	2	.48	32.4	21.0	44.1			2.5	.55
40	S4	5	2	.59	29.5	26.2	20.2	21.7		2.5	.44
98	S6	4	2	.30	42.6	32.0	24.5			1.0	.40
101	S6	5		.51	10.7	20.0	34.1	34.6		.7	.64
108	S6	6	1/4	.57	28.0	12.2	30.8	23.2		5.8	.48
115	S6	1	1/4	.60	21.6	26.2	48.4			3.7	.62
116	S6	6	1/4	.64	16.2	42.1	37.3			4.4	.58

Mean R_ITT: .51

Mean p-value: .54

Appendix 26. Mathematics 10 Scale Score Distribution

(SS = Scale Score, Freq. = Frequency, Cum. = Cumulative)

SS	Freq.	%	Cum. Freq.	Cum. %	SS	Freq.	%	Cum. Freq.	Cum. %	SS	Freq.	%	Cum. Freq.	Cum. %
370	1273	2.46	1273	2.59	413	16	.03	1659	3.38	456	31	.06	2776	5.65
371	2	.00	1275	2.60	414	11	.02	1670	3.40	457	34	.07	2810	5.72
372	5	.01	1280	2.61	415	18	.03	1688	3.44	458	36	.07	2846	5.79
373	6	.01	1286	2.62	416	14	.03	1702	3.47	459	43	.08	2889	5.88
374	4	.01	1290	2.63	417	21	.04	1723	3.51	460	39	.08	2928	5.96
375	7	.01	1297	2.64	418	16	.03	1739	3.54	461	48	.09	2976	6.06
376	6	.01	1303	2.65	419	16	.03	1755	3.57	462	46	.09	3022	6.15
377	5	.01	1308	2.66	420	19	.04	1774	3.61	463	44	.08	3066	6.24
378	5	.01	1313	2.67	421	16	.03	1790	3.64	464	49	.09	3115	6.34
379	5	.01	1318	2.68	422	16	.03	1806	3.68	465	46	.09	3161	6.44
380	5	.01	1323	2.69	423	16	.03	1822	3.71	466	49	.09	3210	6.54
381	6	.01	1329	2.71	424	15	.03	1837	3.74	467	61	.12	3271	6.66
382	4	.01	1333	2.71	425	18	.03	1855	3.78	468	41	.08	3312	6.74
383	4	.01	1337	2.72	426	28	.05	1883	3.83	469	48	.09	3360	6.84
384	7	.01	1344	2.74	427	27	.05	1910	3.89	470	58	.11	3418	6.96
385	3	.01	1347	2.74	428	23	.04	1933	3.94	471	59	.11	3477	7.08
386	8	.02	1355	2.76	429	22	.04	1955	3.98	472	50	.10	3527	7.18
387	7	.01	1362	2.77	430	25	.05	1980	4.03	473	58	.11	3585	7.30
388	7	.01	1369	2.79	431	17	.03	1997	4.07	474	61	.12	3646	7.42
389	9	.02	1378	2.81	432	17	.03	2014	4.10	475	54	.10	3700	7.53
390	10	.02	1388	2.83	433	26	.05	2040	4.15	476	61	.12	3761	7.66
391	8	.02	1396	2.84	434	34	.07	2074	4.22	477	63	.12	3824	7.79
392	11	.02	1407	2.86	435	21	.04	2095	4.27	478	66	.13	3890	7.92
393	14	.03	1421	2.89	436	33	.06	2128	4.33	479	43	.08	3933	8.01
394	8	.02	1429	2.91	437	29	.06	2157	4.39	480	52	.10	3985	8.11
395	12	.02	1441	2.93	438	22	.04	2179	4.44	481	64	.12	4049	8.24
396	7	.01	1448	2.95	439	24	.05	2203	4.49	482	64	.12	4113	8.37
397	14	.03	1462	2.98	440	25	.05	2228	4.54	483	73	.14	4186	8.52
398	16	.03	1478	3.01	441	18	.03	2246	4.57	484	71	.14	4257	8.67
399	8	.02	1486	3.03	442	35	.07	2281	4.64	485	65	.13	4322	8.80
400	5	.01	1491	3.04	443	31	.06	2312	4.71	486	77	.15	4399	8.96
401	10	.02	1501	3.06	444	44	.08	2356	4.80	487	94	.18	4493	9.15
402	10	.02	1511	3.08	445	41	.08	2397	4.88	488	58	.11	4551	9.27
403	15	.03	1526	3.11	446	29	.06	2426	4.94	489	82	.16	4633	9.43
404	8	.02	1534	3.12	447	29	.06	2455	5.00	490	62	.12	4695	9.56
405	15	.03	1549	3.15	448	38	.07	2493	5.08	491	79	.15	4774	9.72
406	10	.02	1559	3.17	449	37	.07	2530	5.15	492	91	.18	4865	9.91
407	17	.03	1576	3.21	450	37	.07	2567	5.23	493	75	.14	4940	10.06
408	13	.03	1589	3.24	451	28	.05	2595	5.28	494	103	.20	5043	10.27
409	9	.02	1598	3.25	452	32	.06	2627	5.35	495	104	.20	5147	10.48
410	17	.03	1615	3.29	453	41	.08	2668	5.43	496	75	.14	5222	10.63
411	13	.03	1628	3.31	454	43	.08	2711	5.52	497	93	.18	5315	10.82
412	15	.03	1643	3.35	455	34	.07	2745	5.59	498	106	.20	5421	11.04

Appendix 26. Mathematics 10 Scale Score Distribution (Continued)

SS	Freq.	%	Cum. Freq.	Cum. %	SS	Freq.	%	Cum. Freq.	Cum. %	SS	Freq.	%	Cum. Freq.	Cum. %
499	84	.16	5505	11.21	545	210	.41	12421	25.29	591	312	.60	24532	49.95
500	102	.20	5607	11.42	546	220	.42	12641	25.74	592	285	.55	24817	50.53
501	112	.22	5719	11.64	547	216	.42	12857	26.18	593	303	.58	25120	51.15
502	101	.19	5820	11.85	548	210	.41	13067	26.61	594	298	.57	25418	51.75
503	107	.21	5927	12.07	549	235	.45	13302	27.08	595	313	.60	25731	52.39
504	99	.19	6026	12.27	550	241	.46	13543	27.57	596	339	.65	26070	53.08
505	129	.25	6155	12.53	551	252	.49	13795	28.09	597	325	.63	26395	53.74
506	114	.22	6269	12.76	552	217	.42	14012	28.53	598	315	.61	26710	54.38
507	98	.19	6367	12.96	553	204	.39	14216	28.94	599	309	.60	27019	55.01
508	141	.27	6508	13.25	554	218	.42	14434	29.39	600	314	.61	27333	55.65
509	104	.20	6612	13.46	555	246	.47	14680	29.89	601	319	.62	27652	56.30
510	124	.24	6736	13.72	556	224	.43	14904	30.35	602	305	.59	27957	56.92
511	115	.22	6851	13.95	557	226	.44	15130	30.81	603	330	.64	28287	57.59
512	124	.24	6975	14.20	558	237	.46	15367	31.29	604	326	.63	28613	58.26
513	126	.24	7101	14.46	559	229	.44	15596	31.75	605	318	.61	28931	58.91
514	126	.24	7227	14.71	560	250	.48	15846	32.26	606	292	.56	29223	59.50
515	124	.24	7351	14.97	561	236	.46	16082	32.74	607	307	.59	29530	60.13
516	117	.23	7468	15.21	562	232	.45	16314	33.22	608	304	.59	29834	60.74
517	127	.24	7595	15.46	563	254	.49	16568	33.73	609	304	.59	30138	61.36
518	158	.30	7753	15.79	564	254	.49	16822	34.25	610	305	.59	30443	61.98
519	143	.28	7896	16.08	565	259	.50	17081	34.78	611	318	.61	30761	62.63
520	152	.29	8048	16.39	566	260	.50	17341	35.31	612	343	.66	31104	63.33
521	144	.28	8192	16.68	567	266	.51	17607	35.85	613	294	.57	31398	63.93
522	128	.25	8320	16.94	568	244	.47	17851	36.35	614	289	.56	31687	64.52
523	141	.27	8461	17.23	569	287	.55	18138	36.93	615	304	.59	31991	65.14
524	157	.30	8618	17.55	570	297	.57	18435	37.54	616	320	.62	32311	65.79
525	143	.28	8761	17.84	571	259	.50	18694	38.06	617	305	.59	32616	66.41
526	157	.30	8918	18.16	572	276	.53	18970	38.62	618	307	.59	32923	67.03
527	190	.37	9108	18.54	573	279	.54	19249	39.19	619	273	.53	33196	67.59
528	156	.30	9264	18.86	574	281	.54	19530	39.76	620	299	.58	33495	68.20
529	172	.33	9436	19.21	575	306	.59	19836	40.39	621	292	.56	33787	68.79
530	167	.32	9603	19.55	576	303	.58	20139	41.00	622	281	.54	34068	69.37
531	166	.32	9769	19.89	577	307	.59	20446	41.63	623	266	.51	34334	69.91
532	171	.33	9940	20.24	578	313	.60	20759	42.27	624	327	.63	34661	70.57
533	172	.33	10112	20.59	579	305	.59	21064	42.89	625	311	.60	34972	71.21
534	192	.37	10304	20.98	580	270	.52	21334	43.44	626	275	.53	35247	71.77
535	176	.34	10480	21.34	581	283	.55	21617	44.01	627	275	.53	35522	72.33
536	175	.34	10655	21.69	582	282	.54	21899	44.59	628	295	.57	35817	72.93
537	188	.36	10843	22.08	583	293	.57	22192	45.18	629	279	.54	36096	73.49
538	186	.36	11029	22.46	584	273	.53	22465	45.74	630	279	.54	36375	74.06
539	187	.36	11216	22.84	585	285	.55	22750	46.32	631	262	.51	36637	74.60
540	186	.36	11402	23.22	586	303	.58	23053	46.94	632	273	.53	36910	75.15
541	210	.41	11612	23.64	587	289	.56	23342	47.53	633	266	.51	37176	75.69
542	197	.38	11809	24.04	588	302	.58	23644	48.14	634	240	.46	37416	76.18
543	205	.40	12014	24.46	589	300	.58	23944	48.75	635	261	.50	37677	76.71
544	197	.38	12211	24.86	590	276	.53	24220	49.31	636	280	.54	37957	77.28

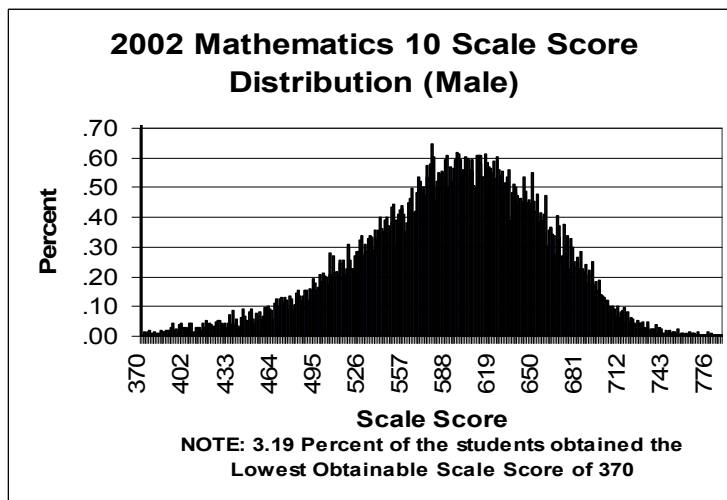
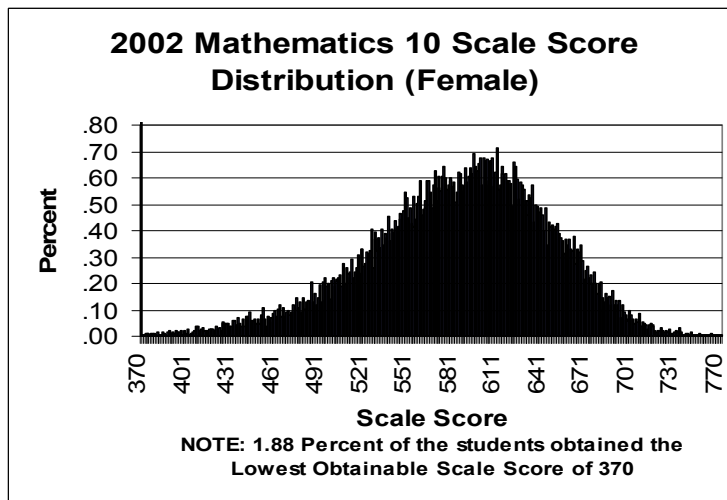
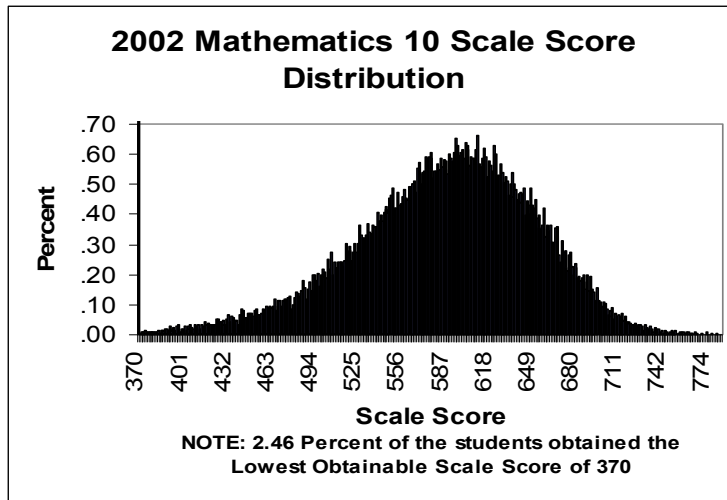
Appendix 26. Mathematics 10 Scale Score Distribution (Continued)

SS	Freq.	%	Cum. Freq.	Cum. %	SS	Freq.	%	Cum. Freq.	Cum. %	SS	Freq.	%	Cum. Freq.	Cum. %
637	238	.46	38195	77.77	683	98	.19	46648	94.98	729	15	.03	48865	99.49
638	259	.50	38454	78.30	684	100	.19	46748	95.18	730	7	.01	48872	99.51
639	250	.48	38704	78.80	685	92	.18	46840	95.37	731	16	.03	48888	99.54
640	232	.45	38936	79.28	686	98	.19	46938	95.57	732	12	.02	48900	99.56
641	242	.47	39178	79.77	687	91	.18	47029	95.75	733	10	.02	48910	99.58
642	244	.47	39422	80.27	688	103	.20	47132	95.96	734	10	.02	48920	99.61
643	228	.44	39650	80.73	689	78	.15	47210	96.12	735	14	.03	48934	99.63
644	242	.47	39892	81.22	690	102	.20	47312	96.33	736	11	.02	48945	99.66
645	252	.49	40144	81.74	691	76	.15	47388	96.49	737	6	.01	48951	99.67
646	206	.40	40350	82.16	692	100	.19	47488	96.69	738	12	.02	48963	99.69
647	230	.44	40580	82.62	693	70	.14	47558	96.83	739	4	.01	48967	99.70
648	224	.43	40804	83.08	694	78	.15	47636	96.99	740	11	.02	48978	99.72
649	252	.49	41056	83.59	695	74	.14	47710	97.14	741	9	.02	48987	99.74
650	208	.40	41264	84.02	696	59	.11	47769	97.26	742	5	.01	48992	99.75
651	223	.43	41487	84.47	697	80	.15	47849	97.42	743	7	.01	48999	99.77
652	217	.42	41704	84.91	698	60	.12	47909	97.55	744	3	.01	49002	99.77
653	234	.45	41938	85.39	699	56	.11	47965	97.66	745	7	.01	49009	99.79
654	200	.39	42138	85.80	700	43	.08	48008	97.75	746	4	.01	49013	99.79
655	205	.40	42343	86.21	701	49	.09	48057	97.85	747	6	.01	49019	99.81
656	183	.35	42526	86.59	702	56	.11	48113	97.96	748	3	.01	49022	99.81
657	182	.35	42708	86.96	703	53	.10	48166	98.07	749	4	.01	49026	99.82
658	189	.36	42897	87.34	704	44	.08	48210	98.16	750	7	.01	49033	99.84
659	219	.42	43116	87.79	705	35	.07	48245	98.23	751	2	.00	49035	99.84
660	169	.33	43285	88.13	706	42	.08	48287	98.32	752	4	.01	49039	99.85
661	188	.36	43473	88.51	707	33	.06	48320	98.38	753	8	.02	49047	99.86
662	181	.35	43654	88.88	708	46	.09	48366	98.48	754	1	.00	49048	99.87
663	178	.34	43832	89.25	709	28	.05	48394	98.53	755	2	.00	49050	99.87
664	188	.36	44020	89.63	710	36	.07	48430	98.61	756	4	.01	49054	99.88
665	159	.31	44179	89.95	711	31	.06	48461	98.67	757	4	.01	49058	99.89
666	157	.30	44336	90.27	712	34	.07	48495	98.74	758	1	.00	49059	99.89
667	185	.36	44521	90.65	713	31	.06	48526	98.80	759	4	.01	49063	99.90
668	169	.33	44690	90.99	714	30	.06	48556	98.86	760	2	.00	49065	99.90
669	186	.36	44876	91.37	715	36	.07	48592	98.94	761	4	.01	49069	99.91
670	138	.27	45014	91.65	716	25	.05	48617	98.99	762	5	.01	49074	99.92
671	126	.24	45140	91.91	717	32	.06	48649	99.05	763	3	.01	49077	99.92
672	162	.31	45302	92.24	718	21	.04	48670	99.10	764	3	.01	49080	99.93
673	141	.27	45443	92.53	719	23	.04	48693	99.14	765	2	.00	49082	99.93
674	145	.28	45588	92.82	720	19	.04	48712	99.18	766	1	.00	49083	99.94
675	116	.22	45704	93.06	721	20	.04	48732	99.22	767	5	.01	49088	99.95
676	111	.21	45815	93.28	722	16	.03	48748	99.25	768	2	.00	49090	99.95
677	137	.26	45952	93.56	723	18	.03	48766	99.29	769	1	.00	49091	99.95
678	141	.27	46093	93.85	724	19	.04	48785	99.33	770	1	.00	49092	99.96
679	117	.23	46210	94.09	725	15	.03	48800	99.36	772	1	.00	49093	99.96
680	102	.20	46312	94.29	726	17	.03	48817	99.40	773	2	.00	49095	99.96
681	116	.22	46428	94.53	727	16	.03	48833	99.43	774	1	.00	49096	99.96
682	122	.24	46550	94.78	728	17	.03	48850	99.46	775	1	.00	49097	99.97

Appendix 26. Mathematics 10 Scale Score Distribution (Continued)

SS	Freq.	%	Cum. Freq.	Cum. %	SS	Freq.	%	Cum. Freq.	Cum. %	SS	Freq.	%	Cum. Freq.	Cum. %
776	4	.01	49101	99.97	787	2	.00	49106	99.98	799	1	.00	49111	99.99
778	1	.00	49102	99.98	792	1	.00	49107	99.99	801	1	.00	49112	100.00
780	1	.00	49103	99.98	795	1	.00	49108	99.99	834	1	.00	49113	100.00
782	1	.00	49104	99.98	798	2	.00	49110	99.99	950	1	.00	49114	100.00

Figure 26. Mathematics 10 Scale Score Distributions for the Total Population, Female, and Male Students



Appendix 25. Writing 10 Scale Score Distribution

(SS = Scale Score, Freq. = Frequency, Cum. = Cumulative)

SS	Freq.	%	Cum. Freq.	Cum. %	SS	Freq.	%	Cum. Freq.	Cum. %	SS	Freq.	%	Cum. Freq.	Cum. %
270	22	.04	22	.04	336	6	.01	99	.20	380	14	.03	341	.70
271	1	.00	23	.05	337	2	.00	101	.21	381	5	.01	346	.71
273	1	.00	24	.05	338	1	.00	102	.21	382	14	.03	360	.73
280	1	.00	25	.05	339	3	.01	105	.21	383	12	.02	372	.76
281	1	.00	26	.05	340	4	.01	109	.22	384	12	.02	384	.78
282	1	.00	27	.06	341	3	.01	112	.23	385	17	.03	401	.82
283	1	.00	28	.06	342	1	.00	113	.23	386	6	.01	407	.83
285	2	.00	30	.06	343	3	.01	116	.24	387	8	.02	415	.85
287	2	.00	32	.07	344	4	.01	120	.24	388	13	.03	428	.87
290	2	.00	34	.07	345	3	.01	123	.25	389	11	.02	439	.90
293	1	.00	35	.07	347	4	.01	127	.26	390	20	.04	459	.94
296	1	.00	36	.07	348	2	.00	129	.26	391	20	.04	479	.98
297	1	.00	37	.08	349	7	.01	136	.28	392	22	.04	501	1.02
299	1	.00	38	.08	350	4	.01	140	.29	393	18	.03	519	1.06
301	1	.00	39	.08	351	2	.00	142	.29	394	21	.04	540	1.10
302	3	.01	42	.09	352	5	.01	147	.30	395	21	.04	561	1.15
304	1	.00	43	.09	353	5	.01	152	.31	396	19	.04	580	1.18
306	2	.00	45	.09	354	4	.01	156	.32	397	15	.03	595	1.21
307	1	.00	46	.09	355	2	.00	158	.32	398	13	.03	608	1.24
308	1	.00	47	.10	356	6	.01	164	.33	399	15	.03	623	1.27
309	2	.00	49	.10	357	7	.01	171	.35	400	19	.04	642	1.31
311	1	.00	50	.10	358	5	.01	176	.36	401	13	.03	655	1.34
312	1	.00	51	.10	359	9	.02	185	.38	402	17	.03	672	1.37
313	2	.00	53	.11	360	3	.01	188	.38	403	17	.03	689	1.41
314	1	.00	54	.11	361	6	.01	194	.40	404	26	.05	715	1.46
315	1	.00	55	.11	362	6	.01	200	.41	405	20	.04	735	1.50
316	3	.01	58	.12	363	6	.01	206	.42	406	23	.04	758	1.55
317	2	.00	60	.12	364	6	.01	212	.43	407	24	.05	782	1.60
318	3	.01	63	.13	365	6	.01	218	.44	408	23	.04	805	1.64
319	1	.00	64	.13	366	5	.01	223	.46	409	26	.05	831	1.70
320	3	.01	67	.14	367	9	.02	232	.47	410	33	.06	864	1.76
322	2	.00	69	.14	368	8	.02	240	.49	411	17	.03	881	1.80
323	1	.00	70	.14	369	5	.01	245	.50	412	27	.05	908	1.85
324	2	.00	72	.15	370	7	.01	252	.51	413	19	.04	927	1.89
325	4	.01	76	.16	371	11	.02	263	.54	414	27	.05	954	1.95
326	2	.00	78	.16	372	10	.02	273	.56	415	31	.06	985	2.01
328	1	.00	79	.16	373	4	.01	277	.57	416	33	.06	1018	2.08
329	1	.00	80	.16	374	9	.02	286	.58	417	35	.07	1053	2.15
330	3	.01	83	.17	375	6	.01	292	.60	418	37	.07	1090	2.22
331	3	.01	86	.18	376	8	.02	300	.61	419	24	.05	1114	2.27
332	1	.00	87	.18	377	7	.01	307	.63	420	31	.06	1145	2.34
333	4	.01	91	.19	378	11	.02	318	.65	421	22	.04	1167	2.38
335	2	.00	93	.19	379	9	.02	327	.67	422	38	.07	1205	2.46

Appendix 25. Writing 10 Scale Score Distribution (Continued)

SS	Freq.	%	Cum. Freq	Cum. %	SS	Freq.	%	Cum. Freq	Cum. %	SS	Freq.	%	Cum. Freq	Cum. %
423	29	.06	1234	2.52	469	90	.17	3754	7.66	515	159	.31	9496	19.38
424	43	.08	1277	2.61	470	80	.15	3834	7.83	516	182	.35	9678	19.75
425	33	.06	1310	2.67	471	86	.17	3920	8.00	517	154	.30	9832	20.07
426	33	.06	1343	2.74	472	81	.16	4001	8.17	518	179	.35	10011	20.43
427	21	.04	1364	2.78	473	96	.19	4097	8.36	519	176	.34	10187	20.79
428	32	.06	1396	2.85	474	88	.17	4185	8.54	520	172	.33	10359	21.14
429	29	.06	1425	2.91	475	94	.18	4279	8.73	521	180	.35	10539	21.51
430	31	.06	1456	2.97	476	99	.19	4378	8.94	522	181	.35	10720	21.88
431	37	.07	1493	3.05	477	106	.20	4484	9.15	523	225	.43	10945	22.34
432	37	.07	1530	3.12	478	74	.14	4558	9.30	524	186	.36	11131	22.72
433	44	.08	1574	3.21	479	96	.19	4654	9.50	525	193	.37	11324	23.11
434	35	.07	1609	3.28	480	93	.18	4747	9.69	526	196	.38	11520	23.51
435	41	.08	1650	3.37	481	121	.23	4868	9.94	527	192	.37	11712	23.90
436	36	.07	1686	3.44	482	117	.23	4985	10.17	528	187	.36	11899	24.29
437	56	.11	1742	3.56	483	89	.17	5074	10.36	529	219	.42	12118	24.73
438	45	.09	1787	3.65	484	97	.19	5171	10.55	530	181	.35	12299	25.10
439	61	.12	1848	3.77	485	106	.20	5277	10.77	531	182	.35	12481	25.47
440	53	.10	1901	3.88	486	107	.21	5384	10.99	532	201	.39	12682	25.88
441	47	.09	1948	3.98	487	108	.21	5492	11.21	533	222	.43	12904	26.34
442	47	.09	1995	4.07	488	123	.24	5615	11.46	534	215	.41	13119	26.78
443	57	.11	2052	4.19	489	117	.23	5732	11.70	535	192	.37	13311	27.17
444	58	.11	2110	4.31	490	148	.29	5880	12.00	536	201	.39	13512	27.58
445	63	.12	2173	4.44	491	124	.24	6004	12.25	537	198	.38	13710	27.98
446	38	.07	2211	4.51	492	128	.25	6132	12.52	538	207	.40	13917	28.40
447	60	.12	2271	4.64	493	117	.23	6249	12.75	539	218	.42	14135	28.85
448	64	.12	2335	4.77	494	136	.26	6385	13.03	540	210	.40	14345	29.28
449	53	.10	2388	4.87	495	124	.24	6509	13.29	541	229	.44	14574	29.75
450	62	.12	2450	5.00	496	131	.25	6640	13.55	542	199	.38	14773	30.15
451	60	.12	2510	5.12	497	121	.23	6761	13.80	543	219	.42	14992	30.60
452	65	.13	2575	5.26	498	133	.26	6894	14.07	544	227	.44	15219	31.06
453	60	.12	2635	5.38	499	126	.24	7020	14.33	545	228	.44	15447	31.53
454	56	.11	2691	5.49	500	158	.30	7178	14.65	546	222	.43	15669	31.98
455	65	.13	2756	5.63	501	151	.29	7329	14.96	547	218	.42	15887	32.43
456	76	.15	2832	5.78	502	158	.30	7487	15.28	548	248	.48	16135	32.93
457	68	.13	2900	5.92	503	162	.31	7649	15.61	549	212	.41	16347	33.36
458	62	.12	2962	6.05	504	134	.26	7783	15.89	550	216	.42	16563	33.81
459	60	.12	3022	6.17	505	142	.27	7925	16.18	551	223	.43	16786	34.26
460	65	.13	3087	6.30	506	149	.29	8074	16.48	552	219	.42	17005	34.71
461	70	.13	3157	6.44	507	183	.35	8257	16.85	553	214	.41	17219	35.14
462	68	.13	3225	6.58	508	166	.32	8423	17.19	554	262	.51	17481	35.68
463	75	.14	3300	6.74	509	163	.31	8586	17.52	555	234	.45	17715	36.16
464	57	.11	3357	6.85	510	140	.27	8726	17.81	556	254	.49	17969	36.68
465	93	.18	3450	7.04	511	139	.27	8865	18.09	557	262	.51	18231	37.21
466	71	.14	3521	7.19	512	156	.30	9021	18.41	558	255	.49	18486	37.73
467	60	.12	3581	7.31	513	164	.32	9185	18.75	559	246	.47	18732	38.23
468	83	.16	3664	7.48	514	152	.29	9337	19.06	560	257	.50	18989	38.76

Appendix 25. Writing 10 Scale Score Distribution (Continued)

SS	Freq.	%	Cum. Freq	Cum. %	SS	Freq.	%	Cum. Freq	Cum. %	SS	Freq.	%	Cum. Freq	Cum. %
561	239	.46	19228	39.24	607	233	.45	30703	62.67	653	151	.29	40280	82.21
562	210	.40	19438	39.67	608	249	.48	30952	63.17	654	166	.32	40446	82.55
563	230	.44	19668	40.14	609	190	.37	31142	63.56	655	155	.30	40601	82.87
564	243	.47	19911	40.64	610	231	.45	31373	64.03	656	126	.24	40727	83.12
565	256	.49	20167	41.16	611	245	.47	31618	64.53	657	172	.33	40899	83.48
566	273	.53	20440	41.72	612	241	.46	31859	65.03	658	158	.30	41057	83.80
567	236	.46	20676	42.20	613	229	.44	32088	65.49	659	167	.32	41224	84.14
568	265	.51	20941	42.74	614	237	.46	32325	65.98	660	131	.25	41355	84.41
569	219	.42	21160	43.19	615	258	.50	32583	66.50	661	143	.28	41498	84.70
570	241	.46	21401	43.68	616	214	.41	32797	66.94	662	146	.28	41644	85.00
571	272	.52	21673	44.24	617	230	.44	33027	67.41	663	143	.28	41787	85.29
572	249	.48	21922	44.74	618	242	.47	33269	67.90	664	131	.25	41918	85.56
573	246	.47	22168	45.25	619	227	.44	33496	68.37	665	151	.29	42069	85.86
574	258	.50	22426	45.77	620	212	.41	33708	68.80	666	131	.25	42200	86.13
575	240	.46	22666	46.26	621	229	.44	33937	69.27	667	140	.27	42340	86.42
576	272	.52	22938	46.82	622	227	.44	34164	69.73	668	151	.29	42491	86.73
577	229	.44	23167	47.28	623	241	.46	34405	70.22	669	134	.26	42625	87.00
578	249	.48	23416	47.79	624	231	.45	34636	70.69	670	125	.24	42750	87.25
579	234	.45	23650	48.27	625	225	.43	34861	71.15	671	127	.24	42877	87.51
580	270	.52	23920	48.82	626	240	.46	35101	71.64	672	114	.22	42991	87.75
581	267	.51	24187	49.37	627	205	.40	35306	72.06	673	141	.27	43132	88.03
582	244	.47	24431	49.86	628	219	.42	35525	72.51	674	134	.26	43266	88.31
583	267	.51	24698	50.41	629	185	.36	35710	72.88	675	127	.24	43393	88.57
584	236	.46	24934	50.89	630	226	.44	35936	73.35	676	116	.22	43509	88.80
585	265	.51	25199	51.43	631	202	.39	36138	73.76	677	101	.19	43610	89.01
586	243	.47	25442	51.93	632	192	.37	36330	74.15	678	118	.23	43728	89.25
587	264	.51	25706	52.47	633	208	.40	36538	74.57	679	119	.23	43847	89.49
588	243	.47	25949	52.96	634	193	.37	36731	74.97	680	105	.20	43952	89.71
589	244	.47	26193	53.46	635	224	.43	36955	75.43	681	120	.23	44072	89.95
590	263	.51	26456	54.00	636	202	.39	37157	75.84	682	107	.21	44179	90.17
591	262	.51	26718	54.53	637	200	.39	37357	76.25	683	115	.22	44294	90.41
592	261	.50	26979	55.06	638	177	.34	37534	76.61	684	112	.22	44406	90.63
593	258	.50	27237	55.59	639	203	.39	37737	77.02	685	106	.20	44512	90.85
594	240	.46	27477	56.08	640	203	.39	37940	77.44	686	103	.20	44615	91.06
595	262	.51	27739	56.62	641	179	.35	38119	77.80	687	91	.18	44706	91.25
596	250	.48	27989	57.13	642	198	.38	38317	78.21	688	87	.17	44793	91.42
597	261	.50	28250	57.66	643	185	.36	38502	78.58	689	93	.18	44886	91.61
598	261	.50	28511	58.19	644	182	.35	38684	78.95	690	92	.18	44978	91.80
599	243	.47	28754	58.69	645	183	.35	38867	79.33	691	99	.19	45077	92.00
600	243	.47	28997	59.18	646	165	.32	39032	79.67	692	98	.19	45175	92.20
601	243	.47	29240	59.68	647	166	.32	39198	80.00	693	79	.15	45254	92.36
602	265	.51	29505	60.22	648	187	.36	39385	80.39	694	82	.16	45336	92.53
603	227	.44	29732	60.68	649	202	.39	39587	80.80	695	72	.14	45408	92.68
604	243	.47	29975	61.18	650	182	.35	39769	81.17	696	87	.17	45495	92.86
605	251	.48	30226	61.69	651	187	.36	39956	81.55	697	72	.14	45567	93.00
606	244	.47	30470	62.19	652	173	.33	40129	81.90	698	69	.13	45636	93.14

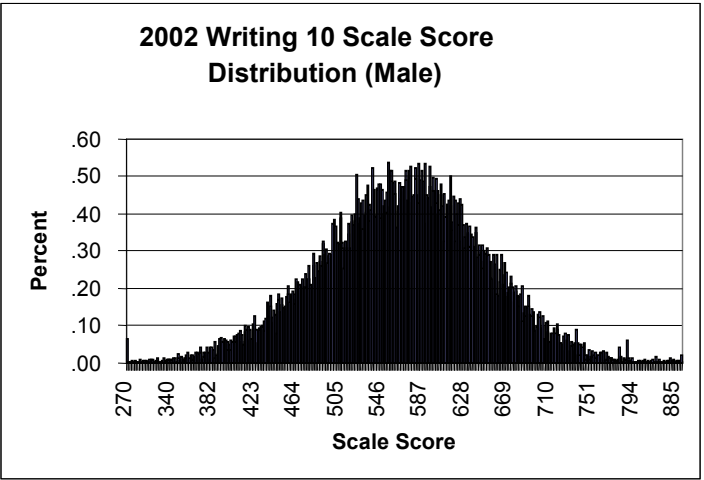
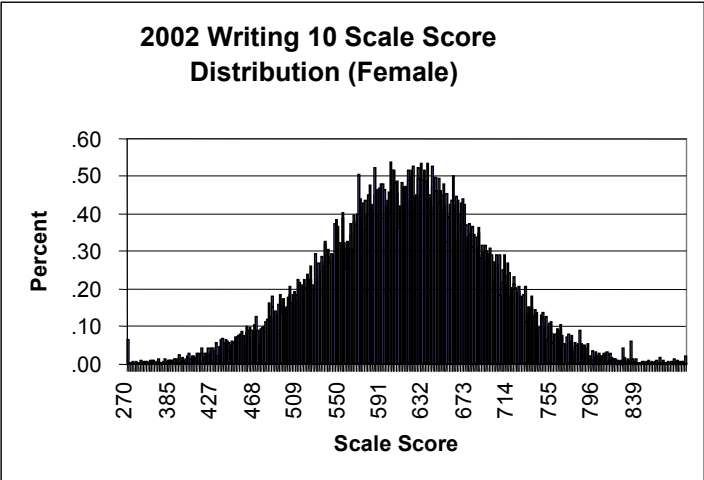
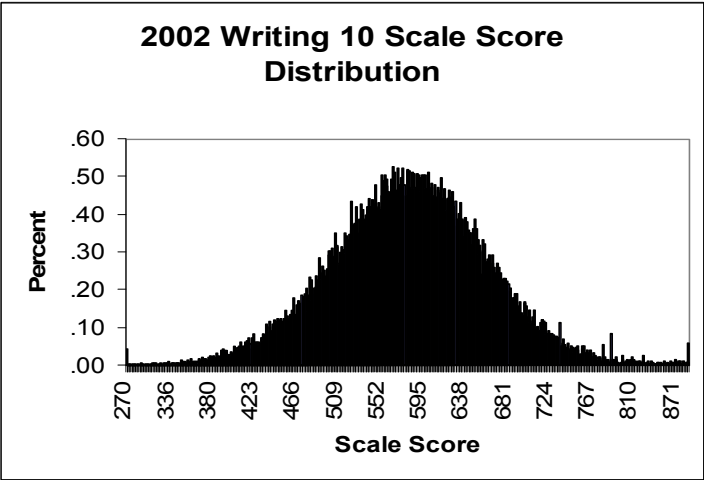
Appendix 25. Writing 10 Scale Score Distribution (Continued)

SS	Freq.	%	Cum. Freq	Cum. %	SS	Freq.	%	Cum. Freq	Cum. %	SS	Freq.	%	Cum. Freq	Cum. %
699	69	.13	45705	93.29	745	31	.06	47956	97.88	791	8	.02	48674	99.34
700	85	.16	45790	93.46	746	21	.04	47977	97.92	792	7	.01	48681	99.36
701	87	.17	45877	93.64	747	23	.04	48000	97.97	793	12	.02	48693	99.38
702	81	.16	45958	93.80	748	26	.05	48026	98.02	794	7	.01	48700	99.40
703	65	.13	46023	93.93	749	25	.05	48051	98.07	795	3	.01	48703	99.40
704	66	.13	46089	94.07	750	17	.03	48068	98.11	796	3	.01	48706	99.41
705	75	.14	46164	94.22	751	23	.04	48091	98.15	797	2	.00	48708	99.41
706	58	.11	46222	94.34	752	24	.05	48115	98.20	798	2	.00	48710	99.42
707	56	.11	46278	94.45	753	16	.03	48131	98.24	799	4	.01	48714	99.43
708	66	.13	46344	94.59	754	21	.04	48152	98.28	800	7	.01	48721	99.44
709	61	.12	46405	94.71	755	26	.05	48178	98.33	801	13	.03	48734	99.47
710	75	.14	46480	94.87	756	16	.03	48194	98.37	802	3	.01	48737	99.47
711	50	.10	46530	94.97	757	16	.03	48210	98.40	803	5	.01	48742	99.48
712	51	.10	46581	95.07	758	16	.03	48226	98.43	804	1	.00	48743	99.49
713	54	.10	46635	95.18	759	22	.04	48248	98.48	805	7	.01	48750	99.50
714	50	.10	46685	95.29	760	26	.05	48274	98.53	806	5	.01	48755	99.51
715	48	.09	46733	95.38	761	27	.05	48301	98.58	807	4	.01	48759	99.52
716	48	.09	46781	95.48	762	18	.03	48319	98.62	808	7	.01	48766	99.53
717	58	.11	46839	95.60	763	16	.03	48335	98.65	809	2	.00	48768	99.54
718	63	.12	46902	95.73	764	20	.04	48355	98.69	810	12	.02	48780	99.56
719	63	.12	46965	95.86	765	9	.02	48364	98.71	812	7	.01	48787	99.58
720	61	.12	47026	95.98	766	17	.03	48381	98.75	813	3	.01	48790	99.58
721	59	.11	47085	96.10	767	13	.03	48394	98.77	814	4	.01	48794	99.59
722	41	.08	47126	96.19	768	20	.04	48414	98.81	815	5	.01	48799	99.60
723	33	.06	47159	96.25	769	11	.02	48425	98.84	816	2	.00	48801	99.60
724	44	.08	47203	96.34	770	12	.02	48437	98.86	817	5	.01	48806	99.61
725	48	.09	47251	96.44	771	18	.03	48455	98.90	818	3	.01	48809	99.62
726	36	.07	47287	96.51	772	13	.03	48468	98.92	819	2	.00	48811	99.62
727	44	.08	47331	96.60	773	12	.02	48480	98.95	820	5	.01	48816	99.63
728	43	.08	47374	96.69	774	7	.01	48487	98.96	821	4	.01	48820	99.64
729	36	.07	47410	96.76	775	11	.02	48498	98.99	822	13	.03	48833	99.67
730	41	.08	47451	96.85	776	8	.02	48506	99.00	823	3	.01	48836	99.68
731	40	.08	47491	96.93	777	12	.02	48518	99.03	824	1	.00	48837	99.68
732	36	.07	47527	97.00	778	10	.02	48528	99.05	825	2	.00	48839	99.68
733	40	.08	47567	97.09	779	5	.01	48533	99.06	826	3	.01	48842	99.69
734	38	.07	47605	97.16	780	28	.05	48561	99.11	827	6	.01	48848	99.70
735	38	.07	47643	97.24	781	8	.02	48569	99.13	828	2	.00	48850	99.70
736	31	.06	47674	97.30	782	11	.02	48580	99.15	829	1	.00	48851	99.71
737	59	.11	47733	97.42	783	3	.01	48583	99.16	830	5	.01	48856	99.72
738	27	.05	47760	97.48	784	8	.02	48591	99.18	831	3	.01	48859	99.72
739	36	.07	47796	97.55	785	7	.01	48598	99.19	832	3	.01	48862	99.73
740	29	.06	47825	97.61	786	5	.01	48603	99.20	833	2	.00	48864	99.73
741	24	.05	47849	97.66	787	4	.01	48607	99.21	834	2	.00	48866	99.74
742	28	.05	47877	97.72	788	8	.02	48615	99.22	835	1	.00	48867	99.74
743	25	.05	47902	97.77	789	43	.08	48658	99.31	836	1	.00	48868	99.74
744	23	.04	47925	97.82	790	8	.02	48666	99.33	837	3	.01	48871	99.75

Appendix 25. Writing 10 Scale Score Distribution (Continued)

SS	Freq.	%	Cum. Freq	Cum. %	SS	Freq.	%	Cum. Freq	Cum. %	SS	Freq.	%	Cum. Freq	Cum. %
838	3	.01	48874	99.75	859	2	.00	48901	99.81	885	6	.01	48944	99.90
839	4	.01	48878	99.76	861	6	.01	48907	99.82	887	2	.00	48946	99.90
840	2	.00	48880	99.77	862	1	.00	48908	99.82	888	1	.00	48947	99.90
842	4	.01	48884	99.77	864	4	.01	48912	99.83	889	5	.01	48952	99.91
843	2	.00	48886	99.78	870	2	.00	48914	99.83	898	2	.00	48954	99.92
844	1	.00	48887	99.78	871	4	.01	48918	99.84	902	2	.00	48956	99.92
845	6	.01	48893	99.79	872	2	.00	48920	99.85	908	3	.01	48959	99.93
851	1	.00	48894	99.79	875	8	.02	48928	99.86	921	3	.01	48962	99.93
853	1	.00	48895	99.80	877	3	.01	48931	99.87	924	3	.01	48965	99.94
854	3	.01	48898	99.80	879	1	.00	48932	99.87	950	30	.06	48995	100.00
856	1	.00	48899	99.80	884	6	.01	48938	99.88					

Figure 25. Writing 10 Scale Score Distributions for the Total Population, Female, and Male Students



Appendix 24. Reading 10 Scale Score Distribution

(SS = Scale Score, Freq. = Frequency, Cum. = Cumulative)

SS	Freq.	%	Cum. Freq.	Cum. %	SS	Freq.	%	Cum. Freq.	Cum. %	SS	Freq.	%	Cum. Freq.	Cum. %
370	323	.62	323	.66	442	1	.00	394	.80	487	5	.01	564	1.15
371	3	.01	326	.67	443	1	.00	395	.81	488	8	.02	572	1.17
374	2	.00	328	.67	444	3	.01	398	.81	489	7	.01	579	1.18
375	2	.00	330	.67	445	2	.00	400	.82	490	5	.01	584	1.19
376	1	.00	331	.68	446	1	.00	401	.82	491	8	.02	592	1.21
378	3	.01	334	.68	447	2	.00	403	.82	492	8	.02	600	1.22
379	3	.01	337	.69	448	2	.00	405	.83	493	4	.01	604	1.23
380	2	.00	339	.69	449	1	.00	406	.83	494	8	.02	612	1.25
381	1	.00	340	.69	450	2	.00	408	.83	495	4	.01	616	1.26
382	1	.00	341	.70	451	2	.00	410	.84	496	5	.01	621	1.27
387	1	.00	342	.70	452	2	.00	412	.84	497	7	.01	628	1.28
391	2	.00	344	.70	453	3	.01	415	.85	498	8	.02	636	1.30
393	1	.00	345	.70	454	1	.00	416	.85	499	6	.01	642	1.31
394	2	.00	347	.71	455	2	.00	418	.85	500	17	.03	659	1.34
395	1	.00	348	.71	457	5	.01	423	.86	501	11	.02	670	1.37
396	1	.00	349	.71	458	2	.00	425	.87	502	11	.02	681	1.39
397	1	.00	350	.71	460	2	.00	427	.87	503	10	.02	691	1.41
399	1	.00	351	.72	461	2	.00	429	.88	504	8	.02	699	1.43
400	1	.00	352	.72	462	6	.01	435	.89	505	8	.02	707	1.44
402	1	.00	353	.72	463	2	.00	437	.89	506	7	.01	714	1.46
403	1	.00	354	.72	464	1	.00	438	.89	507	12	.02	726	1.48
406	2	.00	356	.73	465	4	.01	442	.90	508	12	.02	738	1.51
407	1	.00	357	.73	466	3	.01	445	.91	509	36	.07	774	1.58
408	1	.00	358	.73	467	4	.01	449	.92	510	8	.02	782	1.60
409	3	.01	361	.74	468	2	.00	451	.92	511	11	.02	793	1.62
410	2	.00	363	.74	469	6	.01	457	.93	512	14	.03	807	1.65
411	1	.00	364	.74	470	7	.01	464	.95	513	6	.01	813	1.66
413	2	.00	366	.75	471	10	.02	474	.97	514	6	.01	819	1.67
414	1	.00	367	.75	472	6	.01	480	.98	515	14	.03	833	1.70
415	3	.01	370	.76	473	3	.01	483	.99	516	13	.03	846	1.73
417	1	.00	371	.76	474	7	.01	490	1.00	517	11	.02	857	1.75
418	2	.00	373	.76	475	7	.01	497	1.01	518	7	.01	864	1.76
421	2	.00	375	.77	476	2	.00	499	1.02	519	17	.03	881	1.80
423	1	.00	376	.77	477	7	.01	506	1.03	520	13	.03	894	1.82
425	3	.01	379	.77	478	4	.01	510	1.04	521	11	.02	905	1.85
426	1	.00	380	.78	479	3	.01	513	1.05	522	19	.04	924	1.89
427	2	.00	382	.78	480	8	.02	521	1.06	523	22	.04	946	1.93
428	1	.00	383	.78	481	7	.01	528	1.08	524	20	.04	966	1.97
433	2	.00	385	.79	482	12	.02	540	1.10	525	37	.07	1003	2.05
435	2	.00	387	.79	483	5	.01	545	1.11	526	13	.03	1016	2.07
437	4	.01	391	.80	484	7	.01	552	1.13	527	13	.03	1029	2.10
438	1	.00	392	.80	485	2	.00	554	1.13	528	14	.03	1043	2.13
439	1	.00	393	.80	486	5	.01	559	1.14	529	19	.04	1062	2.17

Appendix 24. Reading 10 Scale Score Distribution (Continued)

SS	Freq.	%	Cum. Freq.	Cum. %	SS	Freq.	%	Cum. Freq.	Cum. %	SS	Freq.	%	Cum. Freq.	Cum. %
530	25	.05	1087	2.22	576	54	.10	2591	5.29	622	161	.31	6921	14.13
531	18	.03	1105	2.26	577	53	.10	2644	5.40	623	161	.31	7082	14.45
532	22	.04	1127	2.30	578	59	.11	2703	5.52	624	145	.28	7227	14.75
533	18	.03	1145	2.34	579	57	.11	2760	5.63	625	149	.29	7376	15.05
534	15	.03	1160	2.37	580	65	.13	2825	5.77	626	167	.32	7543	15.39
535	15	.03	1175	2.40	581	67	.13	2892	5.90	627	160	.31	7703	15.72
536	18	.03	1193	2.43	582	64	.12	2956	6.03	628	153	.30	7856	16.03
537	26	.05	1219	2.49	583	76	.15	3032	6.19	629	157	.30	8013	16.35
538	23	.04	1242	2.53	584	81	.16	3113	6.35	630	170	.33	8183	16.70
539	21	.04	1263	2.58	585	58	.11	3171	6.47	631	134	.26	8317	16.97
540	17	.03	1280	2.61	586	58	.11	3229	6.59	632	160	.31	8477	17.30
541	16	.03	1296	2.65	587	79	.15	3308	6.75	633	176	.34	8653	17.66
542	28	.05	1324	2.70	588	74	.14	3382	6.90	634	180	.35	8833	18.03
543	24	.05	1348	2.75	589	78	.15	3460	7.06	635	191	.37	9024	18.42
544	31	.06	1379	2.81	590	65	.13	3525	7.19	636	146	.28	9170	18.72
545	26	.05	1405	2.87	591	67	.13	3592	7.33	637	185	.36	9355	19.09
546	20	.04	1425	2.91	592	66	.13	3658	7.47	638	199	.38	9554	19.50
547	36	.07	1461	2.98	593	85	.16	3743	7.64	639	206	.40	9760	19.92
548	30	.06	1491	3.04	594	77	.15	3820	7.80	640	191	.37	9951	20.31
549	23	.04	1514	3.09	595	90	.17	3910	7.98	641	222	.43	10173	20.76
550	27	.05	1541	3.15	596	85	.16	3995	8.15	642	202	.39	10375	21.17
551	28	.05	1569	3.20	597	91	.18	4086	8.34	643	213	.41	10588	21.61
552	32	.06	1601	3.27	598	78	.15	4164	8.50	644	231	.45	10819	22.08
553	34	.07	1635	3.34	599	83	.16	4247	8.67	645	246	.47	11065	22.58
554	32	.06	1667	3.40	600	95	.18	4342	8.86	646	219	.42	11284	23.03
555	40	.08	1707	3.48	601	94	.18	4436	9.05	647	237	.46	11521	23.51
556	44	.08	1751	3.57	602	92	.18	4528	9.24	648	255	.49	11776	24.03
557	47	.09	1798	3.67	603	119	.23	4647	9.48	649	210	.40	11986	24.46
558	37	.07	1835	3.75	604	88	.17	4735	9.66	650	264	.51	12250	25.00
559	30	.06	1865	3.81	605	97	.19	4832	9.86	651	254	.49	12504	25.52
560	33	.06	1898	3.87	606	104	.20	4936	10.07	652	250	.48	12754	26.03
561	36	.07	1934	3.95	607	114	.22	5050	10.31	653	255	.49	13009	26.55
562	36	.07	1970	4.02	608	110	.21	5160	10.53	654	279	.54	13288	27.12
563	47	.09	2017	4.12	609	126	.24	5286	10.79	655	284	.55	13572	27.70
564	37	.07	2054	4.19	610	116	.22	5402	11.02	656	288	.56	13860	28.29
565	47	.09	2101	4.29	611	121	.23	5523	11.27	657	290	.56	14150	28.88
566	42	.08	2143	4.37	612	100	.19	5623	11.48	658	307	.59	14457	29.51
567	39	.08	2182	4.45	613	99	.19	5722	11.68	659	326	.63	14783	30.17
568	35	.07	2217	4.52	614	108	.21	5830	11.90	660	304	.59	15087	30.79
569	52	.10	2269	4.63	615	114	.22	5944	12.13	661	294	.57	15381	31.39
570	34	.07	2303	4.70	616	112	.22	6056	12.36	662	314	.61	15695	32.03
571	44	.08	2347	4.79	617	126	.24	6182	12.62	663	312	.60	16007	32.67
572	53	.10	2400	4.90	618	135	.26	6317	12.89	664	336	.65	16343	33.35
573	55	.11	2455	5.01	619	156	.30	6473	13.21	665	329	.63	16672	34.03
574	42	.08	2497	5.10	620	134	.26	6607	13.48	666	337	.65	17009	34.71
575	40	.08	2537	5.18	621	153	.30	6760	13.80	667	324	.62	17333	35.37

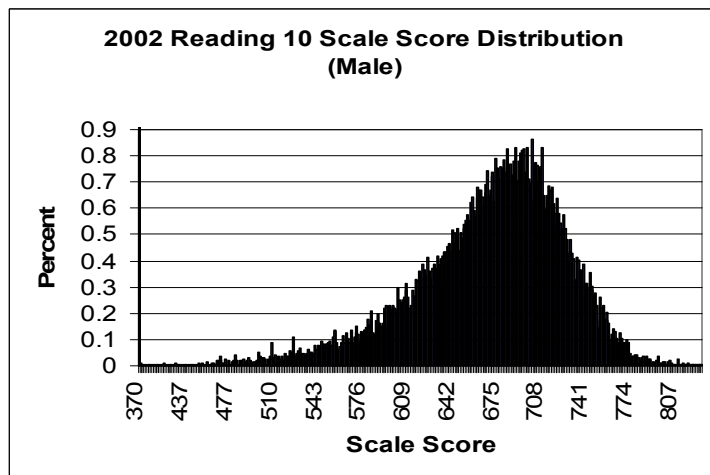
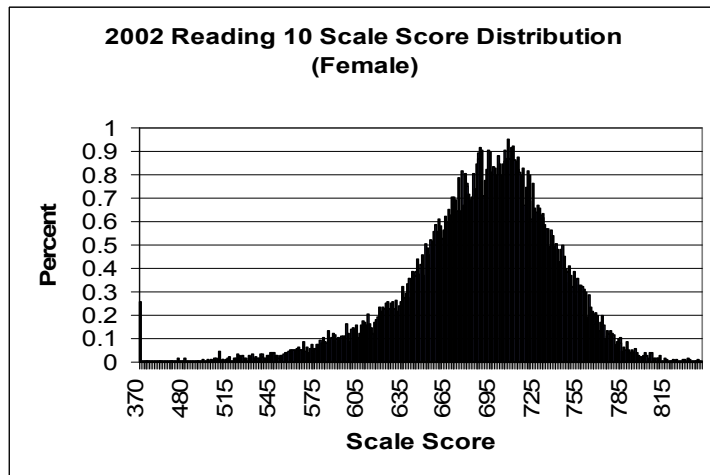
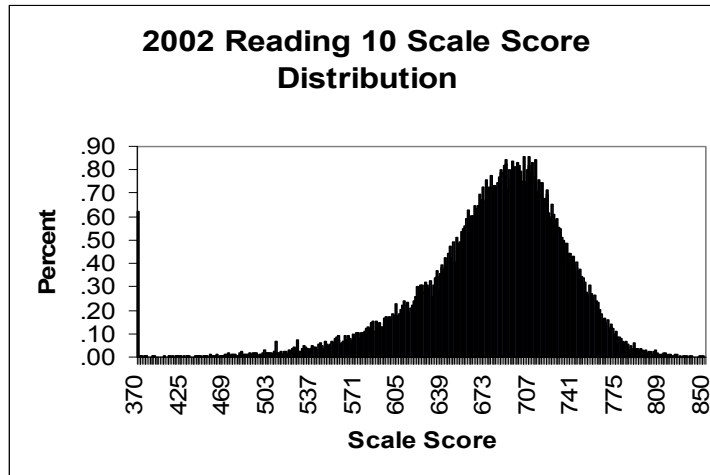
Appendix 24. Reading 10 Scale Score Distribution (Continued)

SS	Freq.	%	Cum. Freq.	Cum. %	SS	Freq.	%	Cum. Freq.	Cum. %	SS	Freq.	%	Cum. Freq.	Cum. %
668	361	.70	17694	36.11	714	394	.76	36110	73.70	760	120	.23	47121	96.17
669	349	.67	18043	36.82	715	388	.75	36498	74.49	761	75	.14	47196	96.32
670	376	.73	18419	37.59	716	359	.69	36857	75.22	762	105	.20	47301	96.54
671	349	.67	18768	38.30	717	388	.75	37245	76.01	763	97	.19	47398	96.73
672	341	.66	19109	39.00	718	351	.68	37596	76.73	764	84	.16	47482	96.91
673	392	.76	19501	39.80	719	353	.68	37949	77.45	765	86	.17	47568	97.08
674	358	.69	19859	40.53	720	361	.70	38310	78.19	766	70	.13	47638	97.22
675	374	.72	20233	41.29	721	372	.72	38682	78.95	767	78	.15	47716	97.38
676	378	.73	20611	42.06	722	319	.62	39001	79.60	768	84	.16	47800	97.56
677	403	.78	21014	42.89	723	310	.60	39311	80.23	769	63	.12	47863	97.68
678	376	.73	21390	43.65	724	338	.65	39649	80.92	770	67	.13	47930	97.82
679	380	.73	21770	44.43	725	305	.59	39954	81.54	771	74	.14	48004	97.97
680	382	.74	22152	45.21	726	315	.61	40269	82.18	772	64	.12	48068	98.10
681	376	.73	22528	45.98	727	305	.59	40574	82.81	773	52	.10	48120	98.21
682	387	.75	22915	46.77	728	306	.59	40880	83.43	774	59	.11	48179	98.33
683	399	.77	23314	47.58	729	287	.55	41167	84.02	775	38	.07	48217	98.41
684	408	.79	23722	48.41	730	276	.53	41443	84.58	776	44	.08	48261	98.50
685	414	.80	24136	49.26	731	284	.55	41727	85.16	777	44	.08	48305	98.59
686	409	.79	24545	50.09	732	265	.51	41992	85.70	778	40	.08	48345	98.67
687	425	.82	24970	50.96	733	258	.50	42250	86.23	779	35	.07	48380	98.74
688	427	.82	25397	51.83	734	253	.49	42503	86.74	780	31	.06	48411	98.80
689	437	.84	25834	52.72	735	214	.41	42717	87.18	781	33	.06	48444	98.87
690	370	.71	26204	53.48	736	253	.49	42970	87.70	782	34	.07	48478	98.94
691	416	.80	26620	54.33	737	231	.45	43201	88.17	783	30	.06	48508	99.00
692	395	.76	27015	55.13	738	231	.45	43432	88.64	784	29	.06	48537	99.06
693	436	.84	27451	56.02	739	225	.43	43657	89.10	785	17	.03	48554	99.09
694	417	.80	27868	56.88	740	217	.42	43874	89.54	786	25	.05	48579	99.14
695	422	.81	28290	57.74	741	225	.43	44099	90.00	787	20	.04	48599	99.19
696	423	.82	28713	58.60	742	193	.37	44292	90.40	788	33	.06	48632	99.25
697	430	.83	29143	59.48	743	198	.38	44490	90.80	789	20	.04	48652	99.29
698	405	.78	29548	60.30	744	211	.41	44701	91.23	790	18	.03	48670	99.33
699	424	.82	29972	61.17	745	193	.37	44894	91.62	791	19	.04	48689	99.37
700	411	.79	30383	62.01	746	195	.38	45089	92.02	792	14	.03	48703	99.40
701	391	.75	30774	62.81	747	179	.35	45268	92.39	793	15	.03	48718	99.43
702	390	.75	31164	63.60	748	163	.31	45431	92.72	794	18	.03	48736	99.47
703	443	.85	31607	64.51	749	176	.34	45607	93.08	795	16	.03	48752	99.50
704	386	.74	31993	65.29	750	167	.32	45774	93.42	796	12	.02	48764	99.52
705	416	.80	32409	66.14	751	143	.28	45917	93.71	797	15	.03	48779	99.55
706	425	.82	32834	67.01	752	137	.26	46054	93.99	798	9	.02	48788	99.57
707	443	.85	33277	67.92	753	121	.23	46175	94.24	799	10	.02	48798	99.59
708	409	.79	33686	68.75	754	160	.31	46335	94.57	800	12	.02	48810	99.62
709	433	.83	34119	69.63	755	141	.27	46476	94.85	801	12	.02	48822	99.64
710	399	.77	34518	70.45	756	133	.26	46609	95.12	802	11	.02	48833	99.66
711	439	.85	34957	71.34	757	130	.25	46739	95.39	803	7	.01	48840	99.68
712	390	.75	35347	72.14	758	137	.26	46876	95.67	804	14	.03	48854	99.71
713	369	.71	35716	72.89	759	125	.24	47001	95.92	805	16	.03	48870	99.74

Appendix 24. Reading 10 Scale Score Distribution (Continued)

SS	Freq.	%	Cum. Freq.	Cum. %	SS	Freq.	%	Cum. Freq.	Cum. %	SS	Freq.	%	Cum. Freq.	Cum. %
806	8	.02	48878	99.76	819	2	.00	48944	99.89	832	4	.01	48979	99.96
807	7	.01	48885	99.77	820	5	.01	48949	99.90	833	3	.01	48982	99.97
808	6	.01	48891	99.78	821	3	.01	48952	99.91	834	1	.00	48983	99.97
809	6	.01	48897	99.79	822	6	.01	48958	99.92	835	1	.00	48984	99.97
810	5	.01	48902	99.80	823	1	.00	48959	99.92	837	1	.00	48985	99.97
811	9	.02	48911	99.82	824	1	.00	48960	99.92	839	1	.00	48986	99.98
812	2	.00	48913	99.83	825	2	.00	48962	99.93	845	1	.00	48987	99.98
813	9	.02	48922	99.84	826	1	.00	48963	99.93	846	1	.00	48988	99.98
814	4	.01	48926	99.85	827	2	.00	48965	99.93	847	2	.00	48990	99.98
815	5	.01	48931	99.86	828	4	.01	48969	99.94	848	4	.01	48994	99.99
816	3	.01	48934	99.87	829	1	.00	48970	99.94	849	2	.00	48996	100.00
817	5	.01	48939	99.88	830	4	.01	48974	99.95	850	1	.00	48997	100.00
818	3	.01	48942	99.89	831	1	.00	48975	99.95	882	1	.00	48998	100.00

Figure 24. Reading 10 Scale Score Distributions for the Total Population, Female, and Male Students



Appendix 23. Mathematics 9 Scale Score Distribution

(SS = Scale Score, Freq. = Frequency, Cum. = Cumulative)

SS	Freq.	%	Cum. Freq.	Cum. %	SS	Freq.	%	Cum. Freq.	Cum. %	SS	Freq.	%	Cum. Freq.	Cum. %
340	855	1.52	855	1.61	383	20	.04	1303	2.45	426	35	.06	2360	4.45
341	7	.01	862	1.62	384	21	.04	1324	2.49	427	39	.07	2399	4.52
342	3	.01	865	1.63	385	15	.03	1339	2.52	428	33	.06	2432	4.58
343	5	.01	870	1.64	386	11	.02	1350	2.54	429	45	.08	2477	4.67
344	9	.02	879	1.66	387	12	.02	1362	2.57	430	40	.07	2517	4.74
345	6	.01	885	1.67	388	8	.01	1370	2.58	431	42	.07	2559	4.82
346	11	.02	896	1.69	389	11	.02	1381	2.60	432	36	.06	2595	4.89
347	6	.01	902	1.70	390	15	.03	1396	2.63	433	43	.08	2638	4.97
348	6	.01	908	1.71	391	10	.02	1406	2.65	434	41	.07	2679	5.05
349	11	.02	919	1.73	392	19	.03	1425	2.68	435	43	.08	2722	5.13
350	6	.01	925	1.74	393	25	.04	1450	2.73	436	39	.07	2761	5.20
351	6	.01	931	1.75	394	18	.03	1468	2.77	437	46	.08	2807	5.29
352	7	.01	938	1.77	395	14	.02	1482	2.79	438	45	.08	2852	5.37
353	9	.02	947	1.78	396	16	.03	1498	2.82	439	40	.07	2892	5.45
354	6	.01	953	1.80	397	28	.05	1526	2.87	440	55	.10	2947	5.55
355	9	.02	962	1.81	398	31	.06	1557	2.93	441	58	.10	3005	5.66
356	8	.01	970	1.83	399	22	.04	1579	2.97	442	55	.10	3060	5.76
357	7	.01	977	1.84	400	26	.05	1605	3.02	443	42	.07	3102	5.84
358	8	.01	985	1.86	401	28	.05	1633	3.08	444	68	.12	3170	5.97
359	12	.02	997	1.88	402	21	.04	1654	3.12	445	58	.10	3228	6.08
360	15	.03	1012	1.91	403	26	.05	1680	3.16	446	70	.12	3298	6.21
361	9	.02	1021	1.92	404	21	.04	1701	3.20	447	71	.13	3369	6.35
362	5	.01	1026	1.93	405	28	.05	1729	3.26	448	72	.13	3441	6.48
363	5	.01	1031	1.94	406	25	.04	1754	3.30	449	63	.11	3504	6.60
364	14	.02	1045	1.97	407	20	.04	1774	3.34	450	59	.11	3563	6.71
365	9	.02	1054	1.99	408	28	.05	1802	3.39	451	59	.11	3622	6.82
366	12	.02	1066	2.01	409	25	.04	1827	3.44	452	78	.14	3700	6.97
367	12	.02	1078	2.03	410	33	.06	1860	3.50	453	84	.15	3784	7.13
368	14	.02	1092	2.06	411	21	.04	1881	3.54	454	68	.12	3852	7.26
369	12	.02	1104	2.08	412	29	.05	1910	3.60	455	78	.14	3930	7.40
370	6	.01	1110	2.09	413	36	.06	1946	3.67	456	70	.12	4000	7.54
371	13	.02	1123	2.12	414	43	.08	1989	3.75	457	64	.11	4064	7.66
372	16	.03	1139	2.15	415	28	.05	2017	3.80	458	74	.13	4138	7.80
373	10	.02	1149	2.16	416	22	.04	2039	3.84	459	74	.13	4212	7.93
374	13	.02	1162	2.19	417	31	.06	2070	3.90	460	74	.13	4286	8.07
375	11	.02	1173	2.21	418	22	.04	2092	3.94	461	80	.14	4366	8.22
376	14	.02	1187	2.24	419	28	.05	2120	3.99	462	89	.16	4455	8.39
377	15	.03	1202	2.26	420	36	.06	2156	4.06	463	98	.17	4553	8.58
378	14	.02	1216	2.29	421	41	.07	2197	4.14	464	77	.14	4630	8.72
379	15	.03	1231	2.32	422	34	.06	2231	4.20	465	93	.17	4723	8.90
380	15	.03	1246	2.35	423	23	.04	2254	4.25	466	91	.16	4814	9.07
381	15	.03	1261	2.38	424	37	.07	2291	4.32	467	86	.15	4900	9.23
382	22	.04	1283	2.42	425	34	.06	2325	4.38	468	77	.14	4977	9.38

Appendix 23. Mathematics 9 Scale Score Distribution (Continued)

SS	Freq.	%	Cum. Freq.	Cum. %	SS	Freq.	%	Cum. Freq.	Cum. %	SS	Freq.	%	Cum. Freq.	Cum. %
469	108	.19	5085	9.58	515	189	.34	11757	22.15	561	308	.55	23215	43.73
470	101	.18	5186	9.77	516	232	.41	11989	22.59	562	303	.54	23518	44.30
471	102	.18	5288	9.96	517	196	.35	12185	22.95	563	320	.57	23838	44.91
472	101	.18	5389	10.15	518	193	.34	12378	23.32	564	308	.55	24146	45.49
473	78	.14	5467	10.30	519	227	.40	12605	23.75	565	288	.51	24434	46.03
474	101	.18	5568	10.49	520	230	.41	12835	24.18	566	299	.53	24733	46.59
475	84	.15	5652	10.65	521	210	.37	13045	24.57	567	290	.52	25023	47.14
476	106	.19	5758	10.85	522	205	.37	13250	24.96	568	281	.50	25304	47.67
477	111	.20	5869	11.06	523	196	.35	13446	25.33	569	319	.57	25623	48.27
478	112	.20	5981	11.27	524	208	.37	13654	25.72	570	290	.52	25913	48.82
479	94	.17	6075	11.44	525	217	.39	13871	26.13	571	301	.54	26214	49.38
480	104	.19	6179	11.64	526	226	.40	14097	26.56	572	298	.53	26512	49.94
481	112	.20	6291	11.85	527	205	.37	14302	26.94	573	290	.52	26802	50.49
482	122	.22	6413	12.08	528	255	.45	14557	27.42	574	334	.60	27136	51.12
483	128	.23	6541	12.32	529	210	.37	14767	27.82	575	325	.58	27461	51.73
484	130	.23	6671	12.57	530	237	.42	15004	28.27	576	308	.55	27769	52.31
485	146	.26	6817	12.84	531	210	.37	15214	28.66	577	308	.55	28077	52.89
486	160	.29	6977	13.14	532	245	.44	15459	29.12	578	296	.53	28373	53.45
487	150	.27	7127	13.43	533	225	.40	15684	29.55	579	309	.55	28682	54.03
488	135	.24	7262	13.68	534	239	.43	15923	30.00	580	296	.53	28978	54.59
489	132	.24	7394	13.93	535	244	.44	16167	30.46	581	310	.55	29288	55.17
490	149	.27	7543	14.21	536	242	.43	16409	30.91	582	308	.55	29596	55.75
491	138	.25	7681	14.47	537	239	.43	16648	31.36	583	301	.54	29897	56.32
492	142	.25	7823	14.74	538	236	.42	16884	31.81	584	317	.57	30214	56.92
493	139	.25	7962	15.00	539	267	.48	17151	32.31	585	344	.61	30558	57.57
494	168	.30	8130	15.32	540	262	.47	17413	32.80	586	336	.60	30894	58.20
495	135	.24	8265	15.57	541	279	.50	17692	33.33	587	325	.58	31219	58.81
496	155	.28	8420	15.86	542	242	.43	17934	33.78	588	301	.54	31520	59.38
497	153	.27	8573	16.15	543	274	.49	18208	34.30	589	313	.56	31833	59.97
498	160	.29	8733	16.45	544	264	.47	18472	34.80	590	311	.55	32144	60.55
499	149	.27	8882	16.73	545	259	.46	18731	35.29	591	314	.56	32458	61.15
500	169	.30	9051	17.05	546	263	.47	18994	35.78	592	323	.58	32781	61.75
501	150	.27	9201	17.33	547	252	.45	19246	36.26	593	366	.65	33147	62.44
502	177	.32	9378	17.67	548	303	.54	19549	36.83	594	326	.58	33473	63.06
503	153	.27	9531	17.95	549	295	.53	19844	37.38	595	284	.51	33757	63.59
504	181	.32	9712	18.30	550	293	.52	20137	37.93	596	275	.49	34032	64.11
505	196	.35	9908	18.67	551	261	.47	20398	38.43	597	321	.57	34353	64.72
506	189	.34	10097	19.02	552	265	.47	20663	38.93	598	297	.53	34650	65.28
507	172	.31	10269	19.35	553	279	.50	20942	39.45	599	327	.58	34977	65.89
508	184	.33	10453	19.69	554	300	.53	21242	40.02	600	309	.55	35286	66.47
509	175	.31	10628	20.02	555	299	.53	21541	40.58	601	314	.56	35600	67.06
510	181	.32	10809	20.36	556	260	.46	21801	41.07	602	309	.55	35909	67.65
511	164	.29	10973	20.67	557	256	.46	22057	41.55	603	295	.53	36204	68.20
512	205	.37	11178	21.06	558	285	.51	22342	42.09	604	297	.53	36501	68.76
513	206	.37	11384	21.45	559	250	.45	22592	42.56	605	291	.52	36792	69.31
514	184	.33	11568	21.79	560	315	.56	22907	43.15	606	304	.54	37096	69.88

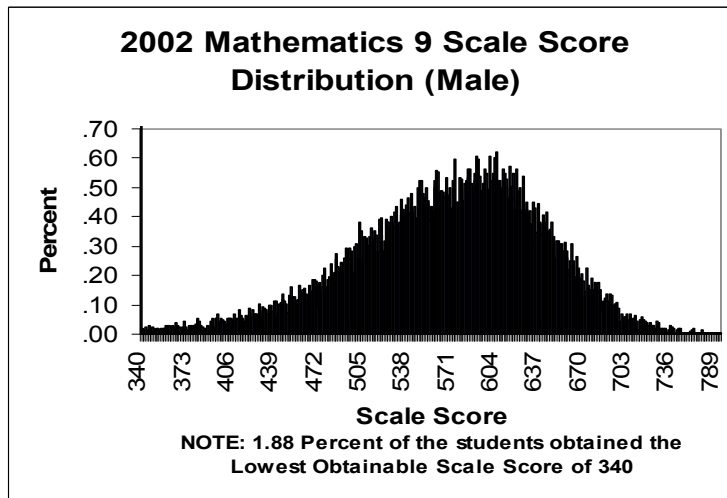
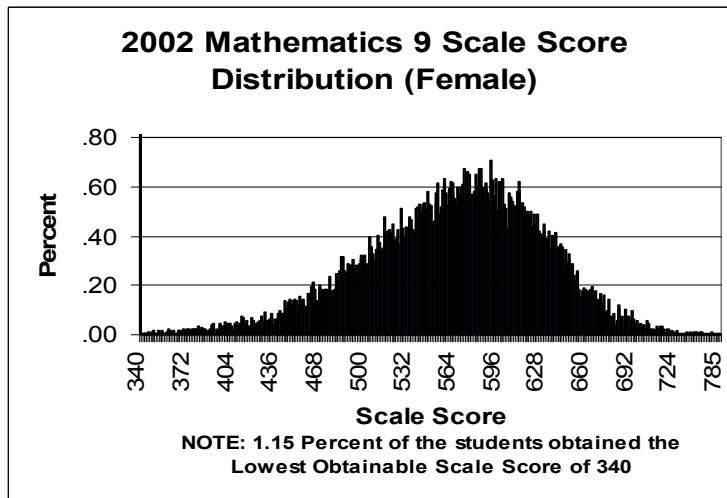
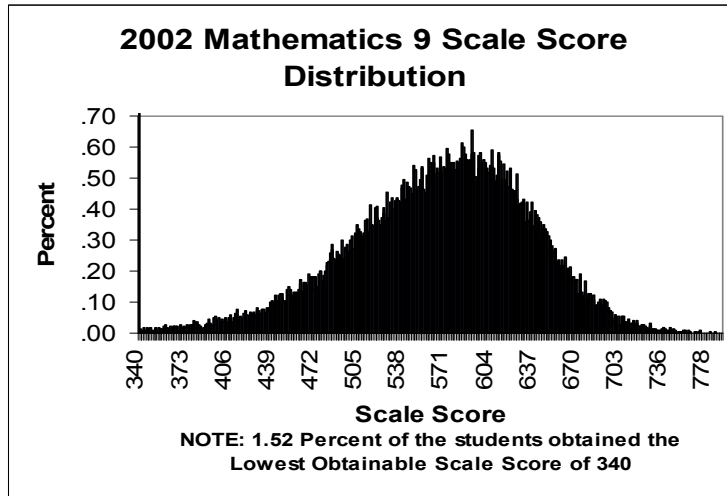
Appendix 23. Mathematics 9 Scale Score Distribution (Continued)

SS	Freq.	%	Cum. Freq.	Cum. %	SS	Freq.	%	Cum. Freq.	Cum. %	SS	Freq.	%	Cum. Freq.	Cum. %
607	331	.59	37427	70.51	653	157	.28	48408	91.19	699	27	.05	52339	98.60
608	300	.53	37727	71.07	654	151	.27	48559	91.48	700	22	.04	52361	98.64
609	298	.53	38025	71.63	655	149	.27	48708	91.76	701	32	.06	52393	98.70
610	275	.49	38300	72.15	656	154	.27	48862	92.05	702	26	.05	52419	98.75
611	286	.51	38586	72.69	657	131	.23	48993	92.30	703	28	.05	52447	98.80
612	320	.57	38906	73.29	658	132	.24	49125	92.54	704	30	.05	52477	98.86
613	327	.58	39233	73.91	659	123	.22	49248	92.78	705	16	.03	52493	98.89
614	311	.55	39544	74.49	660	133	.24	49381	93.03	706	30	.05	52523	98.95
615	279	.50	39823	75.02	661	109	.19	49490	93.23	707	31	.06	52554	99.00
616	279	.50	40102	75.55	662	122	.22	49612	93.46	708	18	.03	52572	99.04
617	307	.55	40409	76.12	663	138	.25	49750	93.72	709	20	.04	52592	99.08
618	278	.50	40687	76.65	664	117	.21	49867	93.94	710	20	.04	52612	99.11
619	294	.52	40981	77.20	665	117	.21	49984	94.16	711	25	.04	52637	99.16
620	266	.47	41247	77.70	666	110	.20	50094	94.37	712	18	.03	52655	99.19
621	254	.45	41501	78.18	667	119	.21	50213	94.59	713	14	.02	52669	99.22
622	299	.53	41800	78.74	668	103	.18	50316	94.79	714	19	.03	52688	99.26
623	260	.46	42060	79.23	669	103	.18	50419	94.98	715	23	.04	52711	99.30
624	258	.46	42318	79.72	670	94	.17	50513	95.16	716	19	.03	52730	99.34
625	258	.46	42576	80.21	671	97	.17	50610	95.34	717	23	.04	52753	99.38
626	243	.43	42819	80.66	672	98	.17	50708	95.53	718	18	.03	52771	99.41
627	289	.52	43108	81.21	673	71	.13	50779	95.66	719	12	.02	52783	99.43
628	233	.42	43341	81.65	674	67	.12	50846	95.79	720	14	.02	52797	99.46
629	235	.42	43576	82.09	675	108	.19	50954	95.99	721	16	.03	52813	99.49
630	238	.42	43814	82.54	676	73	.13	51027	96.13	722	15	.03	52828	99.52
631	241	.43	44055	82.99	677	70	.12	51097	96.26	723	10	.02	52838	99.54
632	235	.42	44290	83.44	678	95	.17	51192	96.44	724	14	.02	52852	99.56
633	202	.36	44492	83.82	679	60	.11	51252	96.55	725	11	.02	52863	99.59
634	236	.42	44728	84.26	680	62	.11	51314	96.67	726	7	.01	52870	99.60
635	205	.37	44933	84.65	681	72	.13	51386	96.80	727	17	.03	52887	99.63
636	219	.39	45152	85.06	682	72	.13	51458	96.94	728	12	.02	52899	99.65
637	202	.36	45354	85.44	683	62	.11	51520	97.06	729	8	.01	52907	99.67
638	238	.42	45592	85.89	684	59	.11	51579	97.17	730	8	.01	52915	99.68
639	194	.35	45786	86.25	685	68	.12	51647	97.29	731	7	.01	52922	99.70
640	222	.40	46008	86.67	686	50	.09	51697	97.39	732	6	.01	52928	99.71
641	196	.35	46204	87.04	687	51	.09	51748	97.49	733	6	.01	52934	99.72
642	215	.38	46419	87.45	688	56	.10	51804	97.59	734	5	.01	52939	99.73
643	210	.37	46629	87.84	689	53	.09	51857	97.69	735	4	.01	52943	99.74
644	201	.36	46830	88.22	690	61	.11	51918	97.81	736	7	.01	52950	99.75
645	189	.34	47019	88.58	691	50	.09	51968	97.90	737	8	.01	52958	99.76
646	177	.32	47196	88.91	692	61	.11	52029	98.01	738	9	.02	52967	99.78
647	197	.35	47393	89.28	693	59	.11	52088	98.13	739	8	.01	52975	99.80
648	188	.34	47581	89.64	694	45	.08	52133	98.21	740	6	.01	52981	99.81
649	184	.33	47765	89.98	695	55	.10	52188	98.31	741	5	.01	52986	99.82
650	176	.31	47941	90.31	696	46	.08	52234	98.40	742	5	.01	52991	99.83
651	141	.25	48082	90.58	697	41	.07	52275	98.48	743	9	.02	53000	99.84
652	169	.30	48251	90.90	698	37	.07	52312	98.55	744	6	.01	53006	99.85

Appendix 23. Mathematics 9 Scale Score Distribution (Continued)

SS	Freq.	%	Cum. Freq.	Cum. %	SS	Freq.	%	Cum. Freq.	Cum. %	SS	Freq.	%	Cum. Freq.	Cum. %
745	7	.01	53013	99.87	758	2	.00	53047	99.93	781	1	.00	53070	99.98
746	4	.01	53017	99.88	759	1	.00	53048	99.93	785	1	.00	53071	99.98
747	1	.00	53018	99.88	760	1	.00	53049	99.94	787	2	.00	53073	99.98
748	1	.00	53019	99.88	761	2	.00	53051	99.94	789	1	.00	53074	99.98
749	3	.01	53022	99.89	763	3	.01	53054	99.95	796	1	.00	53075	99.98
750	2	.00	53024	99.89	765	1	.00	53055	99.95	798	1	.00	53076	99.99
751	3	.01	53027	99.89	766	3	.01	53058	99.95	799	2	.00	53078	99.99
752	2	.00	53029	99.90	768	6	.01	53064	99.96	800	1	.00	53079	99.99
753	4	.01	53033	99.91	771	1	.00	53065	99.97	801	1	.00	53080	99.99
754	5	.01	53038	99.92	774	1	.00	53066	99.97	802	1	.00	53081	100.00
755	1	.00	53039	99.92	775	1	.00	53067	99.97	805	1	.00	53082	100.00
756	1	.00	53040	99.92	778	1	.00	53068	99.97	821	1	.00	53083	100.00
757	5	.01	53045	99.93	779	1	.00	53069	99.97					

Figure 23. Mathematics 9 Scale Score Distributions for the Total Population, Female, and Male Students



Appendix 22. Writing 9 Scale Score Distribution

(SS = Scale Score, Freq. = Frequency, Cum. = Cumulative)

SS	Freq.	%	Cum. Freq.	Cum. %	SS	Freq.	%	Cum. Freq.	Cum. %	SS	Freq.	%	Cum. Freq.	Cum. %
260	49	.09	49	.09	307	2	.00	141	.27	350	8	.01	377	.71
261	3	.01	52	.10	308	3	.01	144	.27	351	7	.01	384	.72
262	5	.01	57	.11	309	2	.00	146	.28	352	10	.02	394	.74
263	1	.00	58	.11	310	4	.01	150	.28	353	6	.01	400	.76
264	3	.01	61	.12	311	4	.01	154	.29	354	14	.02	414	.78
265	1	.00	62	.12	312	3	.01	157	.30	355	13	.02	427	.81
266	4	.01	66	.12	313	3	.01	160	.30	356	13	.02	440	.83
268	1	.00	67	.13	314	2	.00	162	.31	357	10	.02	450	.85
269	1	.00	68	.13	315	3	.01	165	.31	358	12	.02	462	.87
270	1	.00	69	.13	316	1	.00	166	.31	359	11	.02	473	.89
272	3	.01	72	.14	317	1	.00	167	.32	360	18	.03	491	.93
273	2	.00	74	.14	318	8	.01	175	.33	361	17	.03	508	.96
274	1	.00	75	.14	319	1	.00	176	.33	362	10	.02	518	.98
275	3	.01	78	.15	320	2	.00	178	.34	363	12	.02	530	1.00
276	4	.01	82	.15	321	4	.01	182	.34	364	16	.03	546	1.03
277	1	.00	83	.16	322	6	.01	188	.35	365	13	.02	559	1.06
278	1	.00	84	.16	323	5	.01	193	.36	366	20	.04	579	1.09
279	1	.00	85	.16	324	1	.00	194	.37	367	16	.03	595	1.12
280	3	.01	88	.17	325	7	.01	201	.38	368	18	.03	613	1.16
281	1	.00	89	.17	326	6	.01	207	.39	369	18	.03	631	1.19
282	3	.01	92	.17	327	4	.01	211	.40	370	13	.02	644	1.22
283	1	.00	93	.18	328	5	.01	216	.41	371	14	.02	658	1.24
284	1	.00	94	.18	329	7	.01	223	.42	372	12	.02	670	1.26
285	1	.00	95	.18	330	9	.02	232	.44	373	17	.03	687	1.30
286	1	.00	96	.18	331	3	.01	235	.44	374	19	.03	706	1.33
287	2	.00	98	.19	332	8	.01	243	.46	375	24	.04	730	1.38
288	1	.00	99	.19	333	4	.01	247	.47	376	22	.04	752	1.42
289	2	.00	101	.19	334	8	.01	255	.48	377	23	.04	775	1.46
290	3	.01	104	.20	335	7	.01	262	.49	378	24	.04	799	1.51
291	3	.01	107	.20	336	6	.01	268	.51	379	20	.04	819	1.55
292	2	.00	109	.21	337	7	.01	275	.52	380	28	.05	847	1.60
294	3	.01	112	.21	338	4	.01	279	.53	381	22	.04	869	1.64
295	3	.01	115	.22	339	6	.01	285	.54	382	26	.05	895	1.69
297	3	.01	118	.22	340	8	.01	293	.55	383	24	.04	919	1.74
298	2	.00	120	.23	341	13	.02	306	.58	384	19	.03	938	1.77
299	4	.01	124	.23	342	11	.02	317	.60	385	26	.05	964	1.82
300	2	.00	126	.24	343	8	.01	325	.61	386	24	.04	988	1.87
301	2	.00	128	.24	344	5	.01	330	.62	387	28	.05	1016	1.92
302	1	.00	129	.24	345	10	.02	340	.64	388	28	.05	1044	1.97
303	1	.00	130	.25	346	12	.02	352	.66	389	29	.05	1073	2.03
304	2	.00	132	.25	347	1	.00	353	.67	390	27	.05	1100	2.08
305	6	.01	138	.26	348	10	.02	363	.69	391	19	.03	1119	2.11
306	1	.00	139	.26	349	6	.01	369	.70	392	36	.06	1155	2.18

Appendix 22. Writing 9 Scale Score Distribution (Continued)

SS	Freq.	%	Cum. Freq	Cum. %	SS	Freq.	%	Cum. Freq	Cum. %	SS	Freq.	%	Cum. Freq	Cum. %
393	44	.08	1199	2.26	439	82	.15	3621	6.84	485	141	.25	8601	16.24
394	36	.06	1235	2.33	440	69	.12	3690	6.97	486	131	.23	8732	16.49
395	30	.05	1265	2.39	441	86	.15	3776	7.13	487	149	.27	8881	16.77
396	37	.07	1302	2.46	442	78	.14	3854	7.28	488	155	.28	9036	17.06
397	29	.05	1331	2.51	443	79	.14	3933	7.43	489	161	.29	9197	17.36
398	43	.08	1374	2.59	444	77	.14	4010	7.57	490	158	.28	9355	17.66
399	32	.06	1406	2.65	445	99	.18	4109	7.76	491	132	.24	9487	17.91
400	29	.05	1435	2.71	446	92	.16	4201	7.93	492	157	.28	9644	18.21
401	26	.05	1461	2.76	447	78	.14	4279	8.08	493	150	.27	9794	18.49
402	42	.07	1503	2.84	448	88	.16	4367	8.24	494	161	.29	9955	18.80
403	33	.06	1536	2.90	449	93	.17	4460	8.42	495	141	.25	10096	19.06
404	47	.08	1583	2.99	450	102	.18	4562	8.61	496	165	.29	10261	19.37
405	47	.08	1630	3.08	451	97	.17	4659	8.80	497	184	.33	10445	19.72
406	47	.08	1677	3.17	452	103	.18	4762	8.99	498	155	.28	10600	20.01
407	39	.07	1716	3.24	453	105	.19	4867	9.19	499	151	.27	10751	20.30
408	52	.09	1768	3.34	454	103	.18	4970	9.38	500	171	.30	10922	20.62
409	49	.09	1817	3.43	455	89	.16	5059	9.55	501	147	.26	11069	20.90
410	55	.10	1872	3.53	456	121	.22	5180	9.78	502	176	.31	11245	21.23
411	44	.08	1916	3.62	457	107	.19	5287	9.98	503	194	.35	11439	21.60
412	38	.07	1954	3.69	458	97	.17	5384	10.17	504	198	.35	11637	21.97
413	50	.09	2004	3.78	459	93	.17	5477	10.34	505	196	.35	11833	22.34
414	52	.09	2056	3.88	460	87	.16	5564	10.50	506	189	.34	12022	22.70
415	53	.09	2109	3.98	461	119	.21	5683	10.73	507	168	.30	12190	23.01
416	48	.09	2157	4.07	462	105	.19	5788	10.93	508	198	.35	12388	23.39
417	58	.10	2215	4.18	463	107	.19	5895	11.13	509	183	.33	12571	23.73
418	45	.08	2260	4.27	464	101	.18	5996	11.32	510	180	.32	12751	24.07
419	52	.09	2312	4.37	465	121	.22	6117	11.55	511	180	.32	12931	24.41
420	57	.10	2369	4.47	466	97	.17	6214	11.73	512	188	.34	13119	24.77
421	58	.10	2427	4.58	467	102	.18	6316	11.92	513	197	.35	13316	25.14
422	55	.10	2482	4.69	468	126	.22	6442	12.16	514	215	.38	13531	25.55
423	59	.11	2541	4.80	469	136	.24	6578	12.42	515	203	.36	13734	25.93
424	54	.10	2595	4.90	470	128	.23	6706	12.66	516	216	.39	13950	26.34
425	54	.10	2649	5.00	471	113	.20	6819	12.87	517	234	.42	14184	26.78
426	62	.11	2711	5.12	472	106	.19	6925	13.07	518	216	.39	14400	27.19
427	68	.12	2779	5.25	473	125	.22	7050	13.31	519	225	.40	14625	27.61
428	75	.13	2854	5.39	474	111	.20	7161	13.52	520	200	.36	14825	27.99
429	66	.12	2920	5.51	475	122	.22	7283	13.75	521	243	.43	15068	28.45
430	62	.11	2982	5.63	476	120	.21	7403	13.98	522	218	.39	15286	28.86
431	72	.13	3054	5.77	477	127	.23	7530	14.22	523	183	.33	15469	29.21
432	56	.10	3110	5.87	478	129	.23	7659	14.46	524	224	.40	15693	29.63
433	64	.11	3174	5.99	479	116	.21	7775	14.68	525	245	.44	15938	30.09
434	57	.10	3231	6.10	480	131	.23	7906	14.93	526	198	.35	16136	30.46
435	64	.11	3295	6.22	481	158	.28	8064	15.22	527	222	.40	16358	30.88
436	80	.14	3375	6.37	482	127	.23	8191	15.46	528	208	.37	16566	31.28
437	84	.15	3459	6.53	483	141	.25	8332	15.73	529	249	.44	16815	31.75
438	80	.14	3539	6.68	484	128	.23	8460	15.97	530	228	.41	17043	32.18

Appendix 22. Writing 9 Scale Score Distribution (Continued)

SS	Freq.	%	Cum. Freq	Cum. %	SS	Freq.	%	Cum. Freq	Cum. %	SS	Freq.	%	Cum. Freq	Cum. %
531	242	.43	17285	32.63	577	268	.48	29761	56.19	623	201	.36	41344	78.06
532	218	.39	17503	33.05	578	271	.48	30032	56.70	624	219	.39	41563	78.47
533	232	.41	17735	33.48	579	311	.55	30343	57.29	625	192	.34	41755	78.83
534	214	.38	17949	33.89	580	277	.49	30620	57.81	626	223	.40	41978	79.25
535	261	.47	18210	34.38	581	253	.45	30873	58.29	627	193	.34	42171	79.62
536	256	.46	18466	34.86	582	256	.46	31129	58.77	628	194	.35	42365	79.99
537	230	.41	18696	35.30	583	261	.47	31390	59.26	629	185	.33	42550	80.33
538	233	.42	18929	35.74	584	275	.49	31665	59.78	630	208	.37	42758	80.73
539	281	.50	19210	36.27	585	250	.45	31915	60.26	631	224	.40	42982	81.15
540	287	.51	19497	36.81	586	258	.46	32173	60.74	632	198	.35	43180	81.52
541	259	.46	19756	37.30	587	265	.47	32438	61.24	633	178	.32	43358	81.86
542	275	.49	20031	37.82	588	300	.53	32738	61.81	634	169	.30	43527	82.18
543	230	.41	20261	38.25	589	258	.46	32996	62.30	635	192	.34	43719	82.54
544	273	.49	20534	38.77	590	251	.45	33247	62.77	636	185	.33	43904	82.89
545	270	.48	20804	39.28	591	264	.47	33511	63.27	637	185	.33	44089	83.24
546	250	.45	21054	39.75	592	275	.49	33786	63.79	638	161	.29	44250	83.54
547	240	.43	21294	40.20	593	269	.48	34055	64.30	639	181	.32	44431	83.89
548	298	.53	21592	40.77	594	245	.44	34300	64.76	640	151	.27	44582	84.17
549	275	.49	21867	41.28	595	272	.48	34572	65.27	641	177	.32	44759	84.51
550	257	.46	22124	41.77	596	268	.48	34840	65.78	642	193	.34	44952	84.87
551	267	.48	22391	42.27	597	273	.49	35113	66.29	643	159	.28	45111	85.17
552	272	.48	22663	42.79	598	250	.45	35363	66.77	644	156	.28	45267	85.46
553	284	.51	22947	43.32	599	283	.50	35646	67.30	645	151	.27	45418	85.75
554	284	.51	23231	43.86	600	254	.45	35900	67.78	646	161	.29	45579	86.05
555	273	.49	23504	44.38	601	254	.45	36154	68.26	647	128	.23	45707	86.29
556	295	.53	23799	44.93	602	242	.43	36396	68.72	648	156	.28	45863	86.59
557	285	.51	24084	45.47	603	257	.46	36653	69.20	649	151	.27	46014	86.87
558	276	.49	24360	45.99	604	248	.44	36901	69.67	650	166	.30	46180	87.19
559	285	.51	24645	46.53	605	265	.47	37166	70.17	651	150	.27	46330	87.47
560	269	.48	24914	47.04	606	237	.42	37403	70.62	652	133	.24	46463	87.72
561	297	.53	25211	47.60	607	220	.39	37623	71.03	653	133	.24	46596	87.97
562	299	.53	25510	48.16	608	230	.41	37853	71.47	654	129	.23	46725	88.22
563	273	.49	25783	48.68	609	236	.42	38089	71.91	655	137	.24	46862	88.48
564	285	.51	26068	49.22	610	254	.45	38343	72.39	656	122	.22	46984	88.71
565	307	.55	26375	49.80	611	267	.48	38610	72.90	657	122	.22	47106	88.94
566	288	.51	26663	50.34	612	233	.42	38843	73.34	658	143	.25	47249	89.21
567	301	.54	26964	50.91	613	249	.44	39092	73.81	659	120	.21	47369	89.43
568	266	.47	27230	51.41	614	221	.39	39313	74.22	660	115	.21	47484	89.65
569	297	.53	27527	51.97	615	254	.45	39567	74.70	661	136	.24	47620	89.91
570	269	.48	27796	52.48	616	245	.44	39812	75.17	662	119	.21	47739	90.13
571	283	.50	28079	53.01	617	240	.43	40052	75.62	663	113	.20	47852	90.34
572	293	.52	28372	53.57	618	218	.39	40270	76.03	664	114	.20	47966	90.56
573	263	.47	28635	54.06	619	242	.43	40512	76.49	665	96	.17	48062	90.74
574	297	.53	28932	54.62	620	219	.39	40731	76.90	666	103	.18	48165	90.94
575	294	.52	29226	55.18	621	204	.36	40935	77.29	667	110	.20	48275	91.14
576	267	.48	29493	55.68	622	208	.37	41143	77.68	668	107	.19	48382	91.35

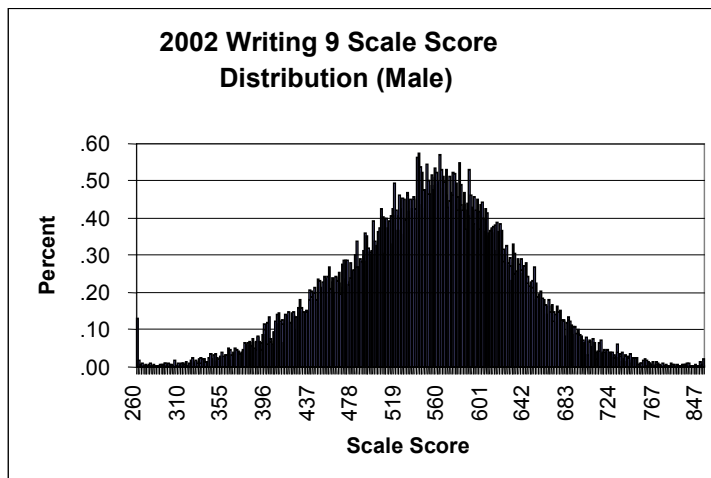
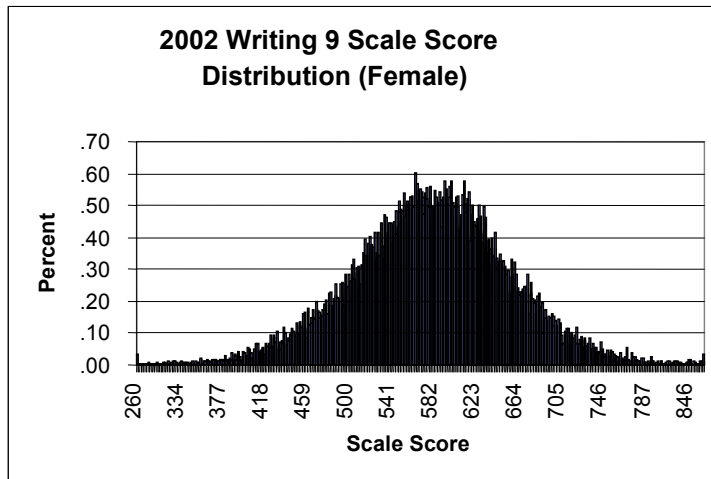
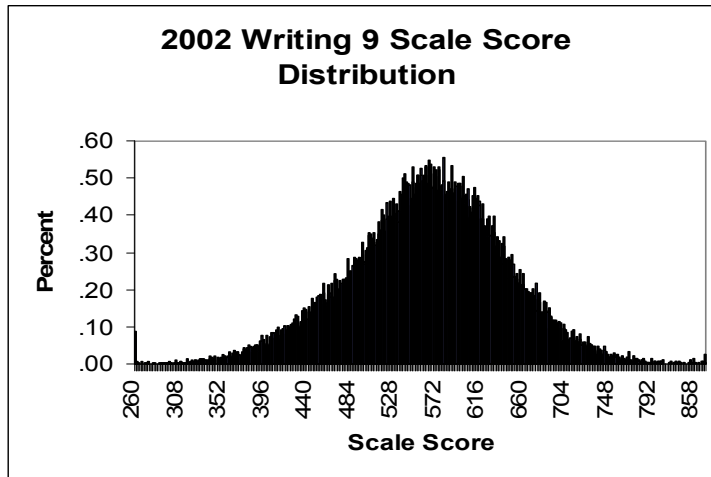
Appendix 22. Writing 9 Scale Score Distribution (Continued)

SS	Freq.	%	Cum. Freq	Cum. %	SS	Freq.	%	Cum. Freq	Cum. %	SS	Freq.	%	Cum. Freq	Cum. %
669	100	.18	48482	91.53	715	36	.06	51617	97.45	761	6	.01	52618	99.34
670	108	.19	48590	91.74	716	42	.07	51659	97.53	762	5	.01	52623	99.35
671	114	.20	48704	91.95	717	34	.06	51693	97.60	763	12	.02	52635	99.38
672	97	.17	48801	92.14	718	33	.06	51726	97.66	764	8	.01	52643	99.39
673	103	.18	48904	92.33	719	37	.07	51763	97.73	765	9	.02	52652	99.41
674	122	.22	49026	92.56	720	46	.08	51809	97.82	766	6	.01	52658	99.42
675	80	.14	49106	92.71	721	29	.05	51838	97.87	767	11	.02	52669	99.44
676	98	.17	49204	92.90	722	25	.04	51863	97.92	768	7	.01	52676	99.45
677	108	.19	49312	93.10	723	34	.06	51897	97.98	769	18	.03	52694	99.49
678	92	.16	49404	93.27	724	29	.05	51926	98.04	770	5	.01	52699	99.50
679	79	.14	49483	93.42	725	33	.06	51959	98.10	771	6	.01	52705	99.51
680	72	.13	49555	93.56	726	27	.05	51986	98.15	772	3	.01	52708	99.51
681	78	.14	49633	93.71	727	23	.04	52009	98.19	773	5	.01	52713	99.52
682	92	.16	49725	93.88	728	41	.07	52050	98.27	774	13	.02	52726	99.55
683	96	.17	49821	94.06	729	32	.06	52082	98.33	775	6	.01	52732	99.56
684	81	.14	49902	94.22	730	23	.04	52105	98.37	776	8	.01	52740	99.57
685	93	.17	49995	94.39	731	29	.05	52134	98.43	777	9	.02	52749	99.59
686	79	.14	50074	94.54	732	21	.04	52155	98.47	778	3	.01	52752	99.60
687	84	.15	50158	94.70	733	27	.05	52182	98.52	779	6	.01	52758	99.61
688	53	.09	50211	94.80	734	26	.05	52208	98.57	780	4	.01	52762	99.61
689	70	.12	50281	94.93	735	20	.04	52228	98.61	781	5	.01	52767	99.62
690	73	.13	50354	95.07	736	15	.03	52243	98.63	782	6	.01	52773	99.64
691	67	.12	50421	95.20	737	27	.05	52270	98.69	783	3	.01	52776	99.64
692	67	.12	50488	95.32	738	19	.03	52289	98.72	784	6	.01	52782	99.65
693	58	.10	50546	95.43	739	17	.03	52306	98.75	785	8	.01	52790	99.67
694	66	.12	50612	95.56	740	22	.04	52328	98.80	786	4	.01	52794	99.68
695	58	.10	50670	95.67	741	21	.04	52349	98.84	787	3	.01	52797	99.68
696	61	.11	50731	95.78	742	15	.03	52364	98.86	788	2	.00	52799	99.68
697	63	.11	50794	95.90	743	14	.02	52378	98.89	789	3	.01	52802	99.69
698	61	.11	50855	96.01	744	27	.05	52405	98.94	790	3	.01	52805	99.70
699	54	.10	50909	96.12	745	20	.04	52425	98.98	791	3	.01	52808	99.70
700	61	.11	50970	96.23	746	19	.03	52444	99.01	792	2	.00	52810	99.71
701	35	.06	51005	96.30	747	9	.02	52453	99.03	795	8	.01	52818	99.72
702	54	.10	51059	96.40	748	14	.02	52467	99.06	796	1	.00	52819	99.72
703	59	.11	51118	96.51	749	11	.02	52478	99.08	797	4	.01	52823	99.73
704	52	.09	51170	96.61	750	10	.02	52488	99.10	798	5	.01	52828	99.74
705	47	.08	51217	96.70	751	15	.03	52503	99.13	799	1	.00	52829	99.74
706	48	.09	51265	96.79	752	10	.02	52513	99.14	800	3	.01	52832	99.75
707	38	.07	51303	96.86	753	13	.02	52526	99.17	801	4	.01	52836	99.75
708	31	.06	51334	96.92	754	16	.03	52542	99.20	802	5	.01	52841	99.76
709	35	.06	51369	96.98	755	14	.02	52556	99.23	803	1	.00	52842	99.77
710	39	.07	51408	97.06	756	11	.02	52567	99.25	804	4	.01	52846	99.77
711	50	.09	51458	97.15	757	15	.03	52582	99.28	805	4	.01	52850	99.78
712	40	.07	51498	97.23	758	10	.02	52592	99.29	806	6	.01	52856	99.79
713	52	.09	51550	97.33	759	9	.02	52601	99.31	807	1	.00	52857	99.79
714	31	.06	51581	97.39	760	11	.02	52612	99.33	808	1	.00	52858	99.80

Appendix 22. Writing 9 Scale Score Distribution (Continued)

SS	Freq.	%	Cum. Freq	Cum. %	SS	Freq.	%	Cum. Freq	Cum. %	SS	Freq.	%	Cum. Freq	Cum. %
809	1	.00	52859	99.80	824	4	.01	52891	99.86	852	9	.02	52926	99.92
810	1	.00	52860	99.80	826	3	.01	52894	99.86	858	1	.00	52927	99.93
811	1	.00	52861	99.80	830	2	.00	52896	99.87	859	1	.00	52928	99.93
812	1	.00	52862	99.80	831	1	.00	52897	99.87	862	3	.01	52931	99.93
813	2	.00	52864	99.81	833	2	.00	52899	99.87	863	1	.00	52932	99.94
814	2	.00	52866	99.81	834	1	.00	52900	99.88	864	3	.01	52935	99.94
815	5	.01	52871	99.82	835	1	.00	52901	99.88	873	1	.00	52936	99.94
816	1	.00	52872	99.82	838	1	.00	52902	99.88	874	1	.00	52937	99.95
818	3	.01	52875	99.83	840	1	.00	52903	99.88	880	1	.00	52938	99.95
819	2	.00	52877	99.83	843	1	.00	52904	99.88	889	5	.01	52943	99.96
820	4	.01	52881	99.84	844	2	.00	52906	99.89	904	1	.00	52944	99.96
821	1	.00	52882	99.84	846	3	.01	52909	99.89	905	5	.01	52949	99.97
822	3	.01	52885	99.85	847	6	.01	52915	99.90	910	2	.00	52951	99.97
823	2	.00	52887	99.85	850	2	.00	52917	99.91	930	15	.03	52966	100.00

Figure 22. Writing 9 Scale Score Distributions for the Total Population, Female, and Male Students



Appendix 21. Reading 9 Scale Score Distribution

(SS = Scale Score, Freq. = Frequency, Cum. = Cumulative)

SS	Freq.	%	Cum. Freq.	Cum. %	SS	Freq.	%	Cum. Freq.	Cum. %	SS	Freq.	%	Cum. Freq.	Cum. %
350	132	.24	132	.25	420	1	.00	208	.39	464	8	.01	385	.73
362	1	.00	133	.25	421	2	.00	210	.40	465	8	.01	393	.74
364	1	.00	134	.25	422	2	.00	212	.40	466	5	.01	398	.75
366	1	.00	135	.26	423	4	.01	216	.41	467	8	.01	406	.77
367	2	.00	137	.26	424	2	.00	218	.41	468	9	.02	415	.78
368	1	.00	138	.26	425	2	.00	220	.42	469	7	.01	422	.80
369	1	.00	139	.26	427	2	.00	222	.42	470	7	.01	429	.81
370	1	.00	140	.26	428	3	.01	225	.43	471	8	.01	437	.83
373	1	.00	141	.27	429	4	.01	229	.43	472	7	.01	444	.84
375	2	.00	143	.27	430	2	.00	231	.44	473	7	.01	451	.85
377	1	.00	144	.27	431	6	.01	237	.45	474	8	.01	459	.87
378	1	.00	145	.27	432	7	.01	244	.46	475	9	.02	468	.88
379	1	.00	146	.28	433	4	.01	248	.47	476	7	.01	475	.90
380	3	.01	149	.28	434	4	.01	252	.48	477	7	.01	482	.91
381	3	.01	152	.29	435	2	.00	254	.48	478	9	.02	491	.93
383	1	.00	153	.29	436	4	.01	258	.49	479	8	.01	499	.94
384	2	.00	155	.29	437	3	.01	261	.49	480	18	.03	517	.98
385	3	.01	158	.30	438	4	.01	265	.50	481	9	.02	526	.99
386	1	.00	159	.30	439	1	.00	266	.50	482	17	.03	543	1.03
388	1	.00	160	.30	440	2	.00	268	.51	483	13	.02	556	1.05
389	1	.00	161	.30	441	3	.01	271	.51	484	13	.02	569	1.08
392	1	.00	162	.31	442	3	.01	274	.52	485	12	.02	581	1.10
394	2	.00	164	.31	443	5	.01	279	.53	486	13	.02	594	1.12
396	1	.00	165	.31	444	2	.00	281	.53	487	13	.02	607	1.15
397	1	.00	166	.31	445	5	.01	286	.54	488	14	.02	621	1.17
398	1	.00	167	.32	446	2	.00	288	.54	489	15	.03	636	1.20
400	1	.00	168	.32	447	3	.01	291	.55	490	12	.02	648	1.22
401	2	.00	170	.32	448	2	.00	293	.55	491	8	.01	656	1.24
403	1	.00	171	.32	449	2	.00	295	.56	492	11	.02	667	1.26
404	2	.00	173	.33	450	7	.01	302	.57	493	13	.02	680	1.29
405	2	.00	175	.33	451	3	.01	305	.58	494	8	.01	688	1.30
406	2	.00	177	.33	452	2	.00	307	.58	495	17	.03	705	1.33
407	2	.00	179	.34	453	3	.01	310	.59	496	11	.02	716	1.35
408	4	.01	183	.35	454	9	.02	319	.60	497	14	.02	730	1.38
409	6	.01	189	.36	455	5	.01	324	.61	498	31	.06	761	1.44
410	5	.01	194	.37	456	8	.01	332	.63	499	12	.02	773	1.46
411	2	.00	196	.37	457	4	.01	336	.64	500	8	.01	781	1.48
412	1	.00	197	.37	458	5	.01	341	.64	501	16	.03	797	1.51
414	1	.00	198	.37	459	4	.01	345	.65	502	21	.04	818	1.55
415	1	.00	199	.38	460	13	.02	358	.68	503	10	.02	828	1.56
416	2	.00	201	.38	461	8	.01	366	.69	504	21	.04	849	1.60
418	4	.01	205	.39	462	3	.01	369	.70	505	22	.04	871	1.65
419	2	.00	207	.39	463	8	.01	377	.71	506	25	.04	896	1.69

Appendix 21. Reading 9 Scale Score Distribution (Continued)

SS	Freq.	%	Cum. Freq.	Cum. %	SS	Freq.	%	Cum. Freq.	Cum. %	SS	Freq.	%	Cum. Freq.	Cum. %
507	26	.05	922	1.74	553	57	.10	2561	4.84	599	143	.25	6866	12.98
508	21	.04	943	1.78	554	49	.09	2610	4.93	600	154	.27	7020	13.27
509	28	.05	971	1.84	555	76	.14	2686	5.08	601	154	.27	7174	13.56
510	18	.03	989	1.87	556	61	.11	2747	5.19	602	161	.29	7335	13.86
511	23	.04	1012	1.91	557	60	.11	2807	5.31	603	159	.28	7494	14.16
512	23	.04	1035	1.96	558	68	.12	2875	5.43	604	157	.28	7651	14.46
513	18	.03	1053	1.99	559	59	.11	2934	5.55	605	159	.28	7810	14.76
514	24	.04	1077	2.04	560	68	.12	3002	5.67	606	199	.35	8009	15.14
515	21	.04	1098	2.08	561	77	.14	3079	5.82	607	170	.30	8179	15.46
516	17	.03	1115	2.11	562	85	.15	3164	5.98	608	166	.30	8345	15.77
517	23	.04	1138	2.15	563	60	.11	3224	6.09	609	145	.26	8490	16.05
518	31	.06	1169	2.21	564	74	.13	3298	6.23	610	190	.34	8680	16.40
519	18	.03	1187	2.24	565	74	.13	3372	6.37	611	156	.28	8836	16.70
520	23	.04	1210	2.29	566	82	.15	3454	6.53	612	179	.32	9015	17.04
521	32	.06	1242	2.35	567	77	.14	3531	6.67	613	178	.32	9193	17.37
522	26	.05	1268	2.40	568	80	.14	3611	6.82	614	183	.33	9376	17.72
523	27	.05	1295	2.45	569	74	.13	3685	6.96	615	191	.34	9567	18.08
524	27	.05	1322	2.50	570	67	.12	3752	7.09	616	227	.40	9794	18.51
525	40	.07	1362	2.57	571	82	.15	3834	7.25	617	201	.36	9995	18.89
526	39	.07	1401	2.65	572	85	.15	3919	7.41	618	211	.38	10206	19.29
527	38	.07	1439	2.72	573	82	.15	4001	7.56	619	231	.41	10437	19.73
528	26	.05	1465	2.77	574	84	.15	4085	7.72	620	215	.38	10652	20.13
529	29	.05	1494	2.82	575	87	.16	4172	7.88	621	207	.37	10859	20.52
530	37	.07	1531	2.89	576	86	.15	4258	8.05	622	237	.42	11096	20.97
531	34	.06	1565	2.96	577	91	.16	4349	8.22	623	245	.44	11341	21.43
532	40	.07	1605	3.03	578	102	.18	4451	8.41	624	203	.36	11544	21.82
533	29	.05	1634	3.09	579	94	.17	4545	8.59	625	201	.36	11745	22.20
534	37	.07	1671	3.16	580	101	.18	4646	8.78	626	217	.39	11962	22.61
535	33	.06	1704	3.22	581	85	.15	4731	8.94	627	228	.41	12190	23.04
536	37	.07	1741	3.29	582	111	.20	4842	9.15	628	257	.46	12447	23.52
537	40	.07	1781	3.37	583	109	.19	4951	9.36	629	250	.45	12697	24.00
538	38	.07	1819	3.44	584	105	.19	5056	9.56	630	247	.44	12944	24.46
539	42	.07	1861	3.52	585	85	.15	5141	9.72	631	243	.43	13187	24.92
540	40	.07	1901	3.59	586	122	.22	5263	9.95	632	238	.42	13425	25.37
541	46	.08	1947	3.68	587	96	.17	5359	10.13	633	283	.50	13708	25.91
542	49	.09	1996	3.77	588	115	.21	5474	10.35	634	271	.48	13979	26.42
543	54	.10	2050	3.87	589	112	.20	5586	10.56	635	265	.47	14244	26.92
544	48	.09	2098	3.97	590	116	.21	5702	10.78	636	269	.48	14513	27.43
545	44	.08	2142	4.05	591	123	.22	5825	11.01	637	242	.43	14755	27.89
546	46	.08	2188	4.14	592	107	.19	5932	11.21	638	288	.51	15043	28.43
547	64	.11	2252	4.26	593	131	.23	6063	11.46	639	295	.53	15338	28.99
548	44	.08	2296	4.34	594	128	.23	6191	11.70	640	282	.50	15620	29.52
549	58	.10	2354	4.45	595	108	.19	6299	11.90	641	286	.51	15906	30.06
550	54	.10	2408	4.55	596	141	.25	6440	12.17	642	298	.53	16204	30.62
551	42	.07	2450	4.63	597	140	.25	6580	12.44	643	291	.52	16495	31.17
552	54	.10	2504	4.73	598	143	.25	6723	12.71	644	339	.60	16834	31.82

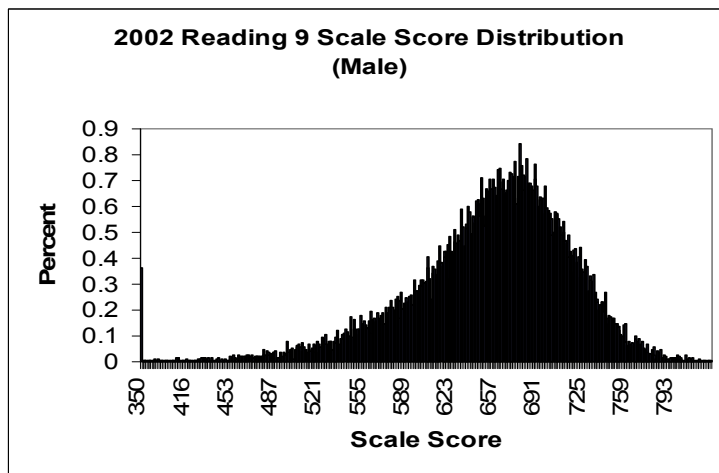
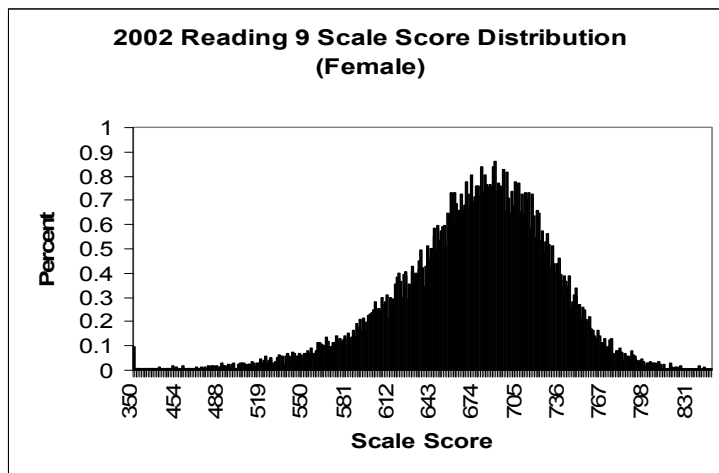
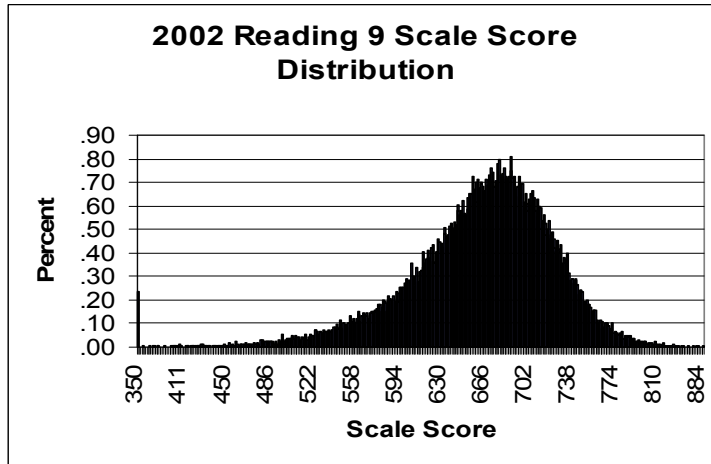
Appendix 21. Reading 9 Scale Score Distribution (Continued)

SS	Freq.	%	Cum. Freq.	Cum. %	SS	Freq.	%	Cum. Freq.	Cum. %	SS	Freq.	%	Cum. Freq.	Cum. %
645	325	.58	17159	32.43	691	405	.72	34881	65.92	737	177	.32	48625	91.90
646	315	.56	17474	33.02	692	379	.68	35260	66.64	738	159	.28	48784	92.20
647	326	.58	17800	33.64	693	359	.64	35619	67.32	739	164	.29	48948	92.51
648	349	.62	18149	34.30	694	383	.68	36002	68.04	740	163	.29	49111	92.82
649	311	.55	18460	34.89	695	406	.72	36408	68.81	741	153	.27	49264	93.11
650	318	.57	18778	35.49	696	360	.64	36768	69.49	742	160	.29	49424	93.41
651	314	.56	19092	36.08	697	388	.69	37156	70.22	743	163	.29	49587	93.72
652	356	.63	19448	36.76	698	388	.69	37544	70.96	744	148	.26	49735	94.00
653	329	.59	19777	37.38	699	329	.59	37873	71.58	745	126	.22	49861	94.23
654	366	.65	20143	38.07	700	345	.62	38218	72.23	746	135	.24	49996	94.49
655	345	.62	20488	38.72	701	366	.65	38584	72.92	747	134	.24	50130	94.74
656	367	.65	20855	39.41	702	342	.61	38926	73.57	748	133	.24	50263	94.99
657	405	.72	21260	40.18	703	325	.58	39251	74.18	749	108	.19	50371	95.20
658	375	.67	21635	40.89	704	354	.63	39605	74.85	750	108	.19	50479	95.40
659	394	.70	22029	41.63	705	366	.65	39971	75.54	751	106	.19	50585	95.60
660	347	.62	22376	42.29	706	374	.67	40345	76.25	752	112	.20	50697	95.81
661	400	.71	22776	43.05	707	343	.61	40688	76.90	753	102	.18	50799	96.01
662	379	.68	23155	43.76	708	355	.63	41043	77.57	754	102	.18	50901	96.20
663	394	.70	23549	44.51	709	326	.58	41369	78.18	755	96	.17	50997	96.38
664	390	.70	23939	45.24	710	311	.55	41680	78.77	756	84	.15	51081	96.54
665	383	.68	24322	45.97	711	354	.63	42034	79.44	757	88	.16	51169	96.71
666	374	.67	24696	46.67	712	334	.60	42368	80.07	758	89	.16	51258	96.87
667	373	.66	25069	47.38	713	333	.59	42701	80.70	759	88	.16	51346	97.04
668	400	.71	25469	48.13	714	281	.50	42982	81.23	760	66	.12	51412	97.17
669	385	.69	25854	48.86	715	300	.53	43282	81.80	761	57	.10	51469	97.27
670	409	.73	26263	49.64	716	314	.56	43596	82.39	762	58	.10	51527	97.38
671	369	.66	26632	50.33	717	296	.53	43892	82.95	763	63	.11	51590	97.50
672	428	.76	27060	51.14	718	266	.47	44158	83.46	764	44	.08	51634	97.58
673	395	.70	27455	51.89	719	280	.50	44438	83.98	765	60	.11	51694	97.70
674	416	.74	27871	52.67	720	301	.54	44739	84.55	766	49	.09	51743	97.79
675	383	.68	28254	53.40	721	269	.48	45008	85.06	767	59	.11	51802	97.90
676	398	.71	28652	54.15	722	256	.46	45264	85.55	768	54	.10	51856	98.00
677	390	.70	29042	54.89	723	274	.49	45538	86.06	769	59	.11	51915	98.12
678	438	.78	29480	55.72	724	259	.46	45797	86.55	770	50	.09	51965	98.21
679	446	.80	29926	56.56	725	238	.42	46035	87.00	771	45	.08	52010	98.30
680	409	.73	30335	57.33	726	228	.41	46263	87.43	772	43	.08	52053	98.38
681	410	.73	30745	58.11	727	254	.45	46517	87.91	773	58	.10	52111	98.49
682	414	.74	31159	58.89	728	235	.42	46752	88.36	774	34	.06	52145	98.55
683	426	.76	31585	59.69	729	228	.41	46980	88.79	775	28	.05	52173	98.60
684	400	.71	31985	60.45	730	245	.44	47225	89.25	776	36	.06	52209	98.67
685	406	.72	32391	61.22	731	199	.35	47424	89.63	777	33	.06	52242	98.73
686	404	.72	32795	61.98	732	214	.38	47638	90.03	778	31	.06	52273	98.79
687	405	.72	33200	62.75	733	201	.36	47839	90.41	779	34	.06	52307	98.86
688	419	.75	33619	63.54	734	209	.37	48048	90.81	780	25	.04	52332	98.90
689	454	.81	34073	64.40	735	222	.40	48270	91.23	781	36	.06	52368	98.97
690	403	.72	34476	65.16	736	178	.32	48448	91.56	782	17	.03	52385	99.00

Appendix 21. Reading 9 Scale Score Distribution (Continued)

SS	Freq.	%	Cum. Freq.	Cum. %	SS	Freq.	%	Cum. Freq.	Cum. %	SS	Freq.	%	Cum. Freq.	Cum. %
783	22	.04	52407	99.05	806	11	.02	52782	99.75	829	1	.00	52880	99.94
784	26	.05	52433	99.09	807	7	.01	52789	99.77	831	1	.00	52881	99.94
785	26	.05	52459	99.14	808	12	.02	52801	99.79	832	2	.00	52883	99.95
786	26	.05	52485	99.19	809	6	.01	52807	99.80	833	2	.00	52885	99.95
787	25	.04	52510	99.24	810	6	.01	52813	99.81	834	1	.00	52886	99.95
788	27	.05	52537	99.29	811	7	.01	52820	99.83	835	1	.00	52887	99.95
789	22	.04	52559	99.33	812	2	.00	52822	99.83	836	1	.00	52888	99.95
790	21	.04	52580	99.37	813	6	.01	52828	99.84	837	2	.00	52890	99.96
791	21	.04	52601	99.41	814	3	.01	52831	99.85	839	1	.00	52891	99.96
792	13	.02	52614	99.44	815	4	.01	52835	99.85	840	1	.00	52892	99.96
793	12	.02	52626	99.46	816	9	.02	52844	99.87	843	1	.00	52893	99.96
794	14	.02	52640	99.49	817	4	.01	52848	99.88	846	4	.01	52897	99.97
795	17	.03	52657	99.52	818	3	.01	52851	99.88	847	1	.00	52898	99.97
796	14	.02	52671	99.54	819	5	.01	52856	99.89	848	1	.00	52899	99.98
797	14	.02	52685	99.57	820	3	.01	52859	99.90	849	3	.01	52902	99.98
798	9	.02	52694	99.59	821	3	.01	52862	99.91	854	4	.01	52906	99.99
799	12	.02	52706	99.61	822	3	.01	52865	99.91	856	1	.00	52907	99.99
800	14	.02	52720	99.64	823	1	.00	52866	99.91	884	1	.00	52908	99.99
801	15	.03	52735	99.67	824	6	.01	52872	99.92	892	1	.00	52909	99.99
802	8	.01	52743	99.68	825	2	.00	52874	99.93	899	2	.00	52911	100.00
803	10	.02	52753	99.70	826	2	.00	52876	99.93	995	1	.00	52912	100.00
804	8	.01	52761	99.71	827	1	.00	52877	99.93					
805	10	.02	52771	99.73	828	2	.00	52879	99.94					

Figure 21. Reading 9 Scale Score Distributions for the Total Population, Female, and Male Students



Appendix 20. Science 8 Scale Score Distribution

(SS = Scale Score, Freq. = Frequency, Cum. = Cumulative)

SS	Freq.	%	Cum. Freq.	Cum. %	SS	Freq.	%	Cum. Freq.	Cum. %	SS	Freq.	%	Cum. Freq.	Cum. %
300	444	.80	444	.83	343	22	.04	1030	1.93	386	54	.10	2599	4.88
301	11	.02	455	.85	344	16	.03	1046	1.96	387	54	.10	2653	4.98
302	12	.02	467	.88	345	20	.04	1066	2.00	388	57	.10	2710	5.09
303	3	.01	470	.88	346	18	.03	1084	2.03	389	57	.10	2767	5.19
304	6	.01	476	.89	347	16	.03	1100	2.06	390	61	.11	2828	5.31
305	12	.02	488	.92	348	18	.03	1118	2.10	391	65	.12	2893	5.43
306	11	.02	499	.94	349	27	.05	1145	2.15	392	64	.12	2957	5.55
307	5	.01	504	.95	350	27	.05	1172	2.20	393	50	.09	3007	5.64
308	10	.02	514	.96	351	29	.05	1201	2.25	394	64	.12	3071	5.76
309	8	.01	522	.98	352	37	.07	1238	2.32	395	64	.12	3135	5.88
310	9	.02	531	1.00	353	22	.04	1260	2.36	396	55	.10	3190	5.99
311	16	.03	547	1.03	354	31	.06	1291	2.42	397	72	.13	3262	6.12
312	14	.03	561	1.05	355	32	.06	1323	2.48	398	61	.11	3323	6.24
313	11	.02	572	1.07	356	30	.05	1353	2.54	399	73	.13	3396	6.37
314	9	.02	581	1.09	357	28	.05	1381	2.59	400	85	.15	3481	6.53
315	7	.01	588	1.10	358	23	.04	1404	2.63	401	75	.13	3556	6.67
316	8	.01	596	1.12	359	33	.06	1437	2.70	402	74	.13	3630	6.81
317	13	.02	609	1.14	360	25	.04	1462	2.74	403	74	.13	3704	6.95
318	10	.02	619	1.16	361	35	.06	1497	2.81	404	93	.17	3797	7.13
319	17	.03	636	1.19	362	50	.09	1547	2.90	405	77	.14	3874	7.27
320	11	.02	647	1.21	363	27	.05	1574	2.95	406	106	.19	3980	7.47
321	7	.01	654	1.23	364	30	.05	1604	3.01	407	80	.14	4060	7.62
322	7	.01	661	1.24	365	27	.05	1631	3.06	408	86	.15	4146	7.78
323	20	.04	681	1.28	366	41	.07	1672	3.14	409	81	.15	4227	7.93
324	16	.03	697	1.31	367	34	.06	1706	3.20	410	96	.17	4323	8.11
325	9	.02	706	1.32	368	36	.06	1742	3.27	411	88	.16	4411	8.28
326	17	.03	723	1.36	369	43	.08	1785	3.35	412	85	.15	4496	8.44
327	15	.03	738	1.39	370	42	.08	1827	3.43	413	92	.17	4588	8.61
328	19	.03	757	1.42	371	48	.09	1875	3.52	414	105	.19	4693	8.81
329	18	.03	775	1.45	372	45	.08	1920	3.60	415	94	.17	4787	8.98
330	15	.03	790	1.48	373	46	.08	1966	3.69	416	95	.17	4882	9.16
331	13	.02	803	1.51	374	48	.09	2014	3.78	417	102	.18	4984	9.35
332	14	.03	817	1.53	375	40	.07	2054	3.85	418	120	.22	5104	9.58
333	17	.03	834	1.57	376	49	.09	2103	3.95	419	103	.19	5207	9.77
334	17	.03	851	1.60	377	48	.09	2151	4.04	420	101	.18	5308	9.96
335	14	.03	865	1.62	378	45	.08	2196	4.12	421	107	.19	5415	10.16
336	19	.03	884	1.66	379	47	.08	2243	4.21	422	98	.18	5513	10.35
337	21	.04	905	1.70	380	49	.09	2292	4.30	423	121	.22	5634	10.57
338	19	.03	924	1.73	381	46	.08	2338	4.39	424	105	.19	5739	10.77
339	23	.04	947	1.78	382	53	.10	2391	4.49	425	125	.22	5864	11.00
340	16	.03	963	1.81	383	49	.09	2440	4.58	426	123	.22	5987	11.24
341	22	.04	985	1.85	384	53	.10	2493	4.68	427	128	.23	6115	11.48
342	23	.04	1008	1.89	385	52	.09	2545	4.78	428	123	.22	6238	11.71

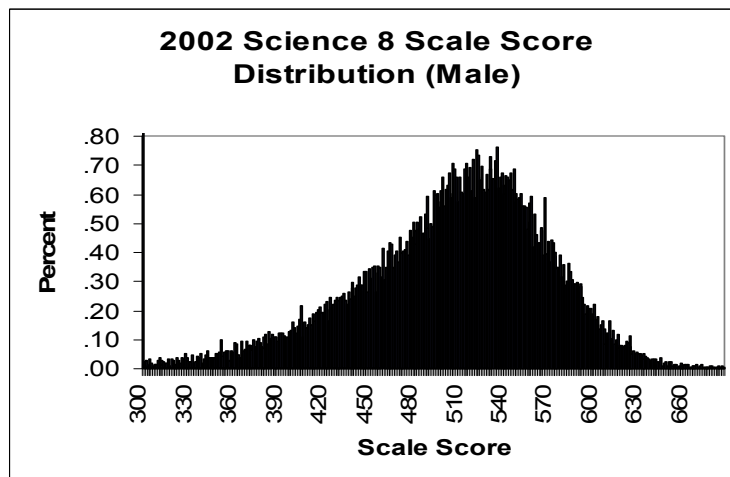
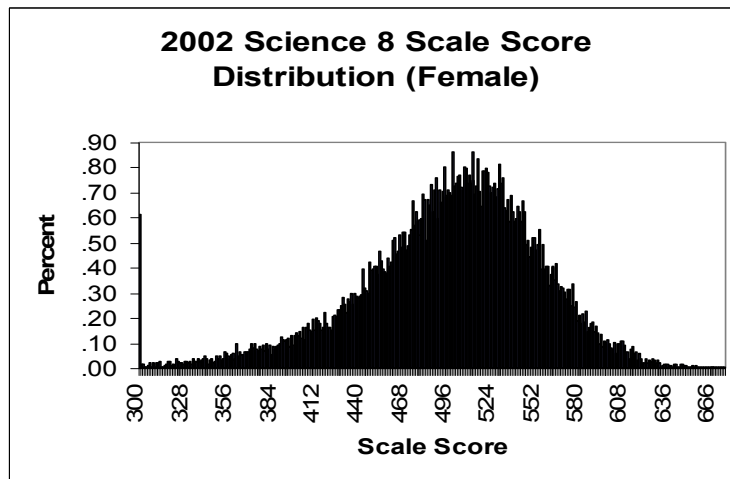
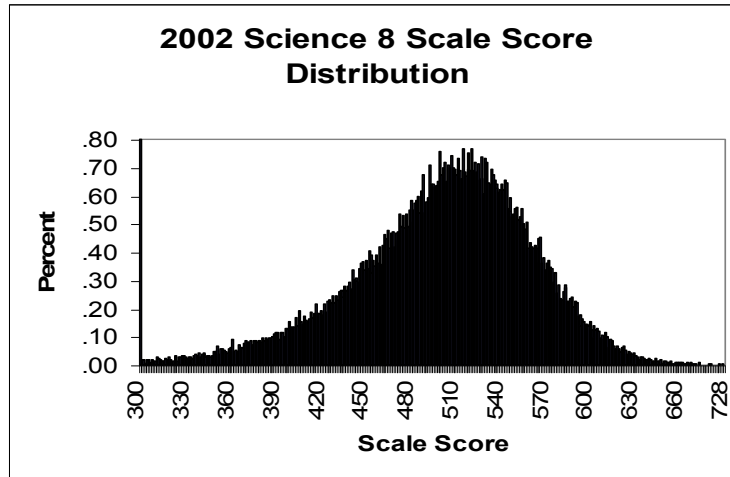
Appendix 20. Science 8 Scale Score Distribution (Continued)

SS	Freq.	%	Cum. Freq.	Cum. %	SS	Freq.	%	Cum. Freq.	Cum. %	SS	Freq.	%	Cum. Freq.	Cum. %
429	137	.25	6375	11.96	475	272	.49	15579	29.24	521	384	.69	31910	59.89
430	124	.22	6499	12.20	476	294	.53	15873	29.79	522	426	.77	32336	60.68
431	136	.24	6635	12.45	477	270	.49	16143	30.30	523	384	.69	32720	61.41
432	129	.23	6764	12.69	478	297	.53	16440	30.85	524	398	.72	33118	62.15
433	145	.26	6909	12.97	479	272	.49	16712	31.36	525	381	.69	33499	62.87
434	146	.26	7055	13.24	480	306	.55	17018	31.94	526	397	.71	33896	63.61
435	148	.27	7203	13.52	481	324	.58	17342	32.55	527	363	.65	34259	64.29
436	133	.24	7336	13.77	482	304	.55	17646	33.12	528	368	.66	34627	64.98
437	156	.28	7492	14.06	483	281	.51	17927	33.64	529	410	.74	35037	65.75
438	146	.26	7638	14.33	484	320	.58	18247	34.24	530	338	.61	35375	66.39
439	156	.28	7794	14.63	485	325	.58	18572	34.85	531	407	.73	35782	67.15
440	163	.29	7957	14.93	486	331	.60	18903	35.48	532	400	.72	36182	67.90
441	150	.27	8107	15.21	487	301	.54	19204	36.04	533	360	.65	36542	68.58
442	188	.34	8295	15.57	488	344	.62	19548	36.69	534	357	.64	36899	69.25
443	169	.30	8464	15.88	489	374	.67	19922	37.39	535	385	.69	37284	69.97
444	171	.31	8635	16.21	490	299	.54	20221	37.95	536	376	.68	37660	70.68
445	165	.30	8800	16.51	491	320	.58	20541	38.55	537	363	.65	38023	71.36
446	163	.29	8963	16.82	492	322	.58	20863	39.15	538	357	.64	38380	72.03
447	191	.34	9154	17.18	493	330	.59	21193	39.77	539	349	.63	38729	72.68
448	201	.36	9355	17.56	494	393	.71	21586	40.51	540	341	.61	39070	73.32
449	203	.37	9558	17.94	495	357	.64	21943	41.18	541	346	.62	39416	73.97
450	187	.34	9745	18.29	496	357	.64	22300	41.85	542	357	.64	39773	74.64
451	207	.37	9952	18.68	497	352	.63	22652	42.51	543	346	.62	40119	75.29
452	190	.34	10142	19.03	498	353	.64	23005	43.17	544	365	.66	40484	75.98
453	226	.41	10368	19.46	499	361	.65	23366	43.85	545	359	.65	40843	76.65
454	217	.39	10585	19.86	500	421	.76	23787	44.64	546	309	.56	41152	77.23
455	181	.33	10766	20.20	501	358	.64	24145	45.31	547	329	.59	41481	77.85
456	205	.37	10971	20.59	502	374	.67	24519	46.01	548	302	.54	41783	78.41
457	196	.35	11167	20.96	503	388	.70	24907	46.74	549	291	.52	42074	78.96
458	218	.39	11385	21.37	504	399	.72	25306	47.49	550	297	.53	42371	79.52
459	200	.36	11585	21.74	505	362	.65	25668	48.17	551	307	.55	42678	80.09
460	232	.42	11817	22.18	506	394	.71	26062	48.91	552	312	.56	42990	80.68
461	199	.36	12016	22.55	507	389	.70	26451	49.64	553	287	.52	43277	81.22
462	237	.43	12253	23.00	508	412	.74	26863	50.41	554	293	.53	43570	81.77
463	258	.46	12511	23.48	509	388	.70	27251	51.14	555	308	.55	43878	82.35
464	229	.41	12740	23.91	510	371	.67	27622	51.84	556	243	.44	44121	82.80
465	250	.45	12990	24.38	511	387	.70	28009	52.56	557	278	.50	44399	83.32
466	266	.48	13256	24.88	512	376	.68	28385	53.27	558	269	.48	44668	83.83
467	230	.41	13486	25.31	513	407	.73	28792	54.03	559	280	.50	44948	84.35
468	259	.47	13745	25.80	514	384	.69	29176	54.75	560	229	.41	45177	84.78
469	262	.47	14007	26.29	515	367	.66	29543	55.44	561	240	.43	45417	85.23
470	234	.42	14241	26.73	516	427	.77	29970	56.24	562	233	.42	45650	85.67
471	261	.47	14502	27.22	517	379	.68	30349	56.96	563	231	.42	45881	86.10
472	246	.44	14748	27.68	518	372	.67	30721	57.65	564	235	.42	46116	86.55
473	263	.47	15011	28.17	519	387	.70	31108	58.38	565	231	.42	46347	86.98
474	296	.53	15307	28.73	520	418	.75	31526	59.16	566	250	.45	46597	87.45

Appendix 20. Science 8 Scale Score Distribution (Continued)

SS	Freq.	%	Cum. Freq.	Cum. %	SS	Freq.	%	Cum. Freq.	Cum. %	SS	Freq.	%	Cum. Freq.	Cum. %
567	202	.36	46799	87.83	613	57	.10	52372	98.29	659	3	.01	53210	99.86
568	251	.45	47050	88.30	614	36	.06	52408	98.35	660	5	.01	53215	99.87
569	201	.36	47251	88.68	615	52	.09	52460	98.45	661	5	.01	53220	99.88
570	211	.38	47462	89.07	616	49	.09	52509	98.54	662	5	.01	53225	99.89
571	187	.34	47649	89.42	617	37	.07	52546	98.61	663	5	.01	53230	99.90
572	202	.36	47851	89.80	618	31	.06	52577	98.67	664	2	.00	53232	99.90
573	207	.37	48058	90.19	619	38	.07	52615	98.74	665	2	.00	53234	99.90
574	194	.35	48252	90.55	620	31	.06	52646	98.80	666	5	.01	53239	99.91
575	181	.33	48433	90.89	621	28	.05	52674	98.85	667	4	.01	53243	99.92
576	189	.34	48622	91.25	622	33	.06	52707	98.92	668	2	.00	53245	99.92
577	164	.30	48786	91.56	623	35	.06	52742	98.98	669	5	.01	53250	99.93
578	182	.33	48968	91.90	624	38	.07	52780	99.05	670	2	.00	53252	99.94
579	142	.26	49110	92.16	625	30	.05	52810	99.11	671	2	.00	53254	99.94
580	158	.28	49268	92.46	626	21	.04	52831	99.15	672	2	.00	53256	99.95
581	132	.24	49400	92.71	627	27	.05	52858	99.20	674	1	.00	53257	99.95
582	129	.23	49529	92.95	628	23	.04	52881	99.24	676	6	.01	53263	99.96
583	144	.26	49673	93.22	629	22	.04	52903	99.28	677	1	.00	53264	99.96
584	153	.28	49826	93.51	630	24	.04	52927	99.33	680	1	.00	53265	99.96
585	157	.28	49983	93.80	631	20	.04	52947	99.37	682	1	.00	53266	99.96
586	126	.23	50109	94.04	632	19	.03	52966	99.40	687	1	.00	53267	99.97
587	126	.23	50235	94.28	633	16	.03	52982	99.43	690	1	.00	53268	99.97
588	131	.24	50366	94.52	634	12	.02	52994	99.45	691	1	.00	53269	99.97
589	134	.24	50500	94.77	635	16	.03	53010	99.48	692	2	.00	53271	99.97
590	114	.21	50614	94.99	636	15	.03	53025	99.51	694	2	.00	53273	99.98
591	126	.23	50740	95.22	637	14	.03	53039	99.54	698	1	.00	53274	99.98
592	122	.22	50862	95.45	638	11	.02	53050	99.56	702	1	.00	53275	99.98
593	96	.17	50958	95.63	639	12	.02	53062	99.58	707	1	.00	53276	99.98
594	99	.18	51057	95.82	640	11	.02	53073	99.60	710	1	.00	53277	99.98
595	77	.14	51134	95.96	641	13	.02	53086	99.63	714	3	.01	53280	99.99
596	91	.16	51225	96.13	642	10	.02	53096	99.65	719	1	.00	53281	99.99
597	87	.16	51312	96.30	643	8	.01	53104	99.66	727	1	.00	53282	99.99
598	80	.14	51392	96.45	644	8	.01	53112	99.68	728	2	.00	53284	100.00
599	80	.14	51472	96.60	645	14	.03	53126	99.70	769	1	.00	53285	100.00
600	79	.14	51551	96.75	646	8	.01	53134	99.72					
601	85	.15	51636	96.91	647	8	.01	53142	99.73					
602	69	.12	51705	97.03	648	10	.02	53152	99.75					
603	78	.14	51783	97.18	649	4	.01	53156	99.76					
604	54	.10	51837	97.28	650	8	.01	53164	99.77					
605	69	.12	51906	97.41	651	6	.01	53170	99.78					
606	73	.13	51979	97.55	652	9	.02	53179	99.80					
607	68	.12	52047	97.68	653	6	.01	53185	99.81					
608	54	.10	52101	97.78	654	6	.01	53191	99.82					
609	59	.11	52160	97.89	655	7	.01	53198	99.84					
610	51	.09	52211	97.98	656	2	.00	53200	99.84					
611	64	.12	52275	98.10	657	2	.00	53202	99.84					
612	40	.07	52315	98.18	658	5	.01	53207	99.85					

Figure 20. Science 8 Scale Score Distributions for the Total Population, Female, and Male Students



Appendix 19. Mathematics 8 Scale Score Distribution

(SS = Scale Score, Freq. = Frequency, Cum. = Cumulative)

SS	Freq.	%	Cum. Freq.	Cum. %	SS	Freq.	%	Cum. Freq.	Cum. %	SS	Freq.	%	Cum. Freq.	Cum. %
310	281	.51	281	.53	354	9	.02	594	1.11	397	24	.04	1254	2.35
311	6	.01	287	.54	355	9	.02	603	1.13	398	25	.04	1279	2.40
312	9	.02	296	.55	356	9	.02	612	1.15	399	22	.04	1301	2.44
313	1	.00	297	.56	357	12	.02	624	1.17	400	29	.05	1330	2.49
314	5	.01	302	.57	358	8	.01	632	1.18	401	20	.04	1350	2.53
315	8	.01	310	.58	359	12	.02	644	1.21	402	19	.03	1369	2.57
316	4	.01	314	.59	360	18	.03	662	1.24	403	28	.05	1397	2.62
317	3	.01	317	.59	361	10	.02	672	1.26	404	33	.06	1430	2.68
318	2	.00	319	.60	362	8	.01	680	1.27	405	30	.05	1460	2.74
319	4	.01	323	.61	363	9	.02	689	1.29	406	31	.06	1491	2.79
320	6	.01	329	.62	364	9	.02	698	1.31	407	32	.06	1523	2.85
321	4	.01	333	.62	365	14	.03	712	1.33	408	33	.06	1556	2.92
322	5	.01	338	.63	366	11	.02	723	1.36	409	22	.04	1578	2.96
323	6	.01	344	.64	367	15	.03	738	1.38	410	36	.06	1614	3.03
324	4	.01	348	.65	368	20	.04	758	1.42	411	33	.06	1647	3.09
325	6	.01	354	.66	369	9	.02	767	1.44	412	36	.06	1683	3.15
326	3	.01	357	.67	370	13	.02	780	1.46	413	29	.05	1712	3.21
327	6	.01	363	.68	371	14	.03	794	1.49	414	41	.07	1753	3.29
328	10	.02	373	.70	372	10	.02	804	1.51	415	40	.07	1793	3.36
329	9	.02	382	.72	373	16	.03	820	1.54	416	20	.04	1813	3.40
330	5	.01	387	.73	374	19	.03	839	1.57	417	43	.08	1856	3.48
331	4	.01	391	.73	375	16	.03	855	1.60	418	41	.07	1897	3.56
332	10	.02	401	.75	376	14	.03	869	1.63	419	38	.07	1935	3.63
333	11	.02	412	.77	377	18	.03	887	1.66	420	41	.07	1976	3.70
334	8	.01	420	.79	378	14	.03	901	1.69	421	33	.06	2009	3.77
335	8	.01	428	.80	379	17	.03	918	1.72	422	37	.07	2046	3.84
336	4	.01	432	.81	380	14	.03	932	1.75	423	30	.05	2076	3.89
337	8	.01	440	.82	381	12	.02	944	1.77	424	44	.08	2120	3.97
338	10	.02	450	.84	382	18	.03	962	1.80	425	46	.08	2166	4.06
339	14	.03	464	.87	383	19	.03	981	1.84	426	37	.07	2203	4.13
340	5	.01	469	.88	384	20	.04	1001	1.88	427	35	.06	2238	4.20
341	6	.01	475	.89	385	21	.04	1022	1.92	428	44	.08	2282	4.28
343	7	.01	482	.90	386	14	.03	1036	1.94	429	35	.06	2317	4.34
344	14	.03	496	.93	387	19	.03	1055	1.98	430	48	.09	2365	4.43
345	8	.01	504	.94	388	21	.04	1076	2.02	431	45	.08	2410	4.52
346	6	.01	510	.96	389	20	.04	1096	2.05	432	59	.11	2469	4.63
347	13	.02	523	.98	390	15	.03	1111	2.08	433	48	.09	2517	4.72
348	8	.01	531	1.00	391	21	.04	1132	2.12	434	51	.09	2568	4.81
349	14	.03	545	1.02	392	14	.03	1146	2.15	435	48	.09	2616	4.90
350	6	.01	551	1.03	393	12	.02	1158	2.17	436	63	.11	2679	5.02
351	10	.02	561	1.05	394	26	.05	1184	2.22	437	65	.12	2744	5.14
352	13	.02	574	1.08	395	23	.04	1207	2.26	438	56	.10	2800	5.25
353	11	.02	585	1.10	396	23	.04	1230	2.31	439	51	.09	2851	5.34

Appendix 19. Mathematics 8 Scale Score Distribution (Continued)

SS	Freq.	%	Cum. Freq.	Cum. %	SS	Freq.	%	Cum. Freq.	Cum. %	SS	Freq.	%	Cum. Freq.	Cum. %
440	52	.09	2903	5.44	486	137	.25	7425	13.92	532	277	.50	17656	33.10
441	52	.09	2955	5.54	487	156	.28	7581	14.21	533	281	.51	17937	33.62
442	69	.12	3024	5.67	488	149	.27	7730	14.49	534	301	.54	18238	34.19
443	46	.08	3070	5.75	489	162	.29	7892	14.79	535	268	.48	18506	34.69
444	67	.12	3137	5.88	490	173	.31	8065	15.12	536	316	.57	18822	35.28
445	59	.11	3196	5.99	491	164	.30	8229	15.43	537	305	.55	19127	35.85
446	68	.12	3264	6.12	492	165	.30	8394	15.73	538	309	.56	19436	36.43
447	65	.12	3329	6.24	493	186	.33	8580	16.08	539	271	.49	19707	36.94
448	69	.12	3398	6.37	494	185	.33	8765	16.43	540	280	.50	19987	37.47
449	70	.13	3468	6.50	495	171	.31	8936	16.75	541	309	.56	20296	38.04
450	67	.12	3535	6.63	496	174	.31	9110	17.08	542	300	.54	20596	38.61
451	68	.12	3603	6.75	497	196	.35	9306	17.44	543	307	.55	20903	39.18
452	78	.14	3681	6.90	498	187	.34	9493	17.79	544	327	.59	21230	39.80
453	92	.17	3773	7.07	499	185	.33	9678	18.14	545	292	.53	21522	40.34
454	74	.13	3847	7.21	500	171	.31	9849	18.46	546	312	.56	21834	40.93
455	74	.13	3921	7.35	501	191	.34	10040	18.82	547	303	.55	22137	41.50
456	88	.16	4009	7.51	502	189	.34	10229	19.17	548	305	.55	22442	42.07
457	80	.14	4089	7.66	503	210	.38	10439	19.57	549	331	.60	22773	42.69
458	98	.18	4187	7.85	504	214	.39	10653	19.97	550	328	.59	23101	43.30
459	79	.14	4266	8.00	505	198	.36	10851	20.34	551	306	.55	23407	43.88
460	107	.19	4373	8.20	506	214	.39	11065	20.74	552	334	.60	23741	44.50
461	82	.15	4455	8.35	507	218	.39	11283	21.15	553	315	.57	24056	45.09
462	87	.16	4542	8.51	508	232	.42	11515	21.58	554	310	.56	24366	45.67
463	108	.19	4650	8.72	509	247	.44	11762	22.05	555	329	.59	24695	46.29
464	81	.15	4731	8.87	510	243	.44	12005	22.50	556	357	.64	25052	46.96
465	88	.16	4819	9.03	511	222	.40	12227	22.92	557	322	.58	25374	47.56
466	91	.16	4910	9.20	512	224	.40	12451	23.34	558	312	.56	25686	48.15
467	76	.14	4986	9.35	513	209	.38	12660	23.73	559	343	.62	26029	48.79
468	113	.20	5099	9.56	514	248	.45	12908	24.20	560	323	.58	26352	49.40
469	100	.18	5199	9.75	515	229	.41	13137	24.63	561	339	.61	26691	50.03
470	112	.20	5311	9.96	516	254	.46	13391	25.10	562	332	.60	27023	50.65
471	122	.22	5433	10.18	517	261	.47	13652	25.59	563	337	.61	27360	51.29
472	106	.19	5539	10.38	518	238	.43	13890	26.04	564	333	.60	27693	51.91
473	131	.24	5670	10.63	519	259	.47	14149	26.52	565	309	.56	28002	52.49
474	114	.21	5784	10.84	520	263	.47	14412	27.02	566	294	.53	28296	53.04
475	133	.24	5917	11.09	521	263	.47	14675	27.51	567	353	.64	28649	53.70
476	112	.20	6029	11.30	522	252	.45	14927	27.98	568	338	.61	28987	54.34
477	122	.22	6151	11.53	523	258	.46	15185	28.46	569	323	.58	29310	54.94
478	144	.26	6295	11.80	524	266	.48	15451	28.96	570	367	.66	29677	55.63
479	118	.21	6413	12.02	525	252	.45	15703	29.44	571	335	.60	30012	56.26
480	137	.25	6550	12.28	526	279	.50	15982	29.96	572	340	.61	30352	56.89
481	137	.25	6687	12.53	527	288	.52	16270	30.50	573	306	.55	30658	57.47
482	144	.26	6831	12.80	528	263	.47	16533	30.99	574	333	.60	30991	58.09
483	150	.27	6981	13.09	529	278	.50	16811	31.51	575	326	.59	31317	58.70
484	151	.27	7132	13.37	530	299	.54	17110	32.07	576	289	.52	31606	59.24
485	156	.28	7288	13.66	531	269	.48	17379	32.58	577	304	.55	31910	59.81

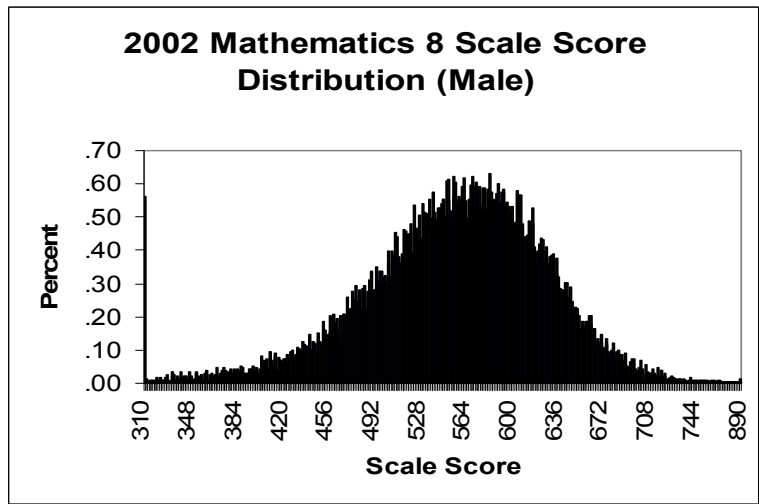
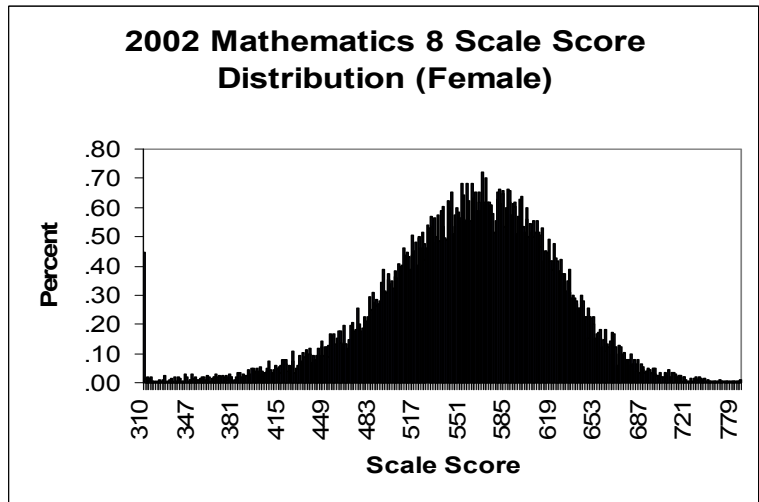
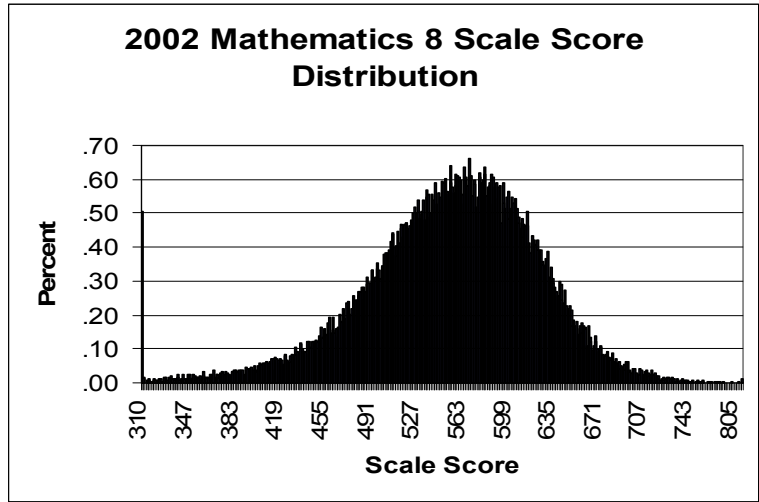
Appendix 19. Mathematics 8 Scale Score Distribution (Continued)

SS	Freq.	%	Cum. Freq.	Cum. %	SS	Freq.	%	Cum. Freq.	Cum. %	SS	Freq.	%	Cum. Freq.	Cum. %
578	337	.61	32247	60.45	624	235	.42	45568	85.42	670	77	.14	51645	96.81
579	344	.62	32591	61.09	625	217	.39	45785	85.82	671	67	.12	51712	96.93
580	328	.59	32919	61.71	626	217	.39	46002	86.23	672	57	.10	51769	97.04
581	333	.60	33252	62.33	627	218	.39	46220	86.64	673	52	.09	51821	97.14
582	341	.61	33593	62.97	628	200	.36	46420	87.01	674	61	.11	51882	97.25
583	355	.64	33948	63.64	629	195	.35	46615	87.38	675	59	.11	51941	97.36
584	308	.55	34256	64.21	630	193	.35	46808	87.74	676	48	.09	51989	97.45
585	320	.58	34576	64.81	631	204	.37	47012	88.12	677	44	.08	52033	97.54
586	327	.59	34903	65.43	632	164	.30	47176	88.43	678	47	.08	52080	97.62
587	323	.58	35226	66.03	633	215	.39	47391	88.83	679	44	.08	52124	97.71
588	341	.61	35567	66.67	634	174	.31	47565	89.16	680	52	.09	52176	97.80
589	293	.53	35860	67.22	635	189	.34	47754	89.51	681	43	.08	52219	97.88
590	337	.61	36197	67.85	636	172	.31	47926	89.84	682	39	.07	52258	97.96
591	322	.58	36519	68.45	637	165	.30	48091	90.15	683	38	.07	52296	98.03
592	327	.59	36846	69.07	638	157	.28	48248	90.44	684	50	.09	52346	98.12
593	302	.54	37148	69.63	639	148	.27	48396	90.72	685	35	.06	52381	98.19
594	320	.58	37468	70.23	640	150	.27	48546	91.00	686	41	.07	52422	98.26
595	324	.58	37792	70.84	641	144	.26	48690	91.27	687	32	.06	52454	98.32
596	263	.47	38055	71.33	642	166	.30	48856	91.58	688	32	.06	52486	98.38
597	328	.59	38383	71.95	643	162	.29	49018	91.88	689	35	.06	52521	98.45
598	296	.53	38679	72.50	644	136	.24	49154	92.14	690	24	.04	52545	98.49
599	286	.51	38965	73.04	645	132	.24	49286	92.39	691	28	.05	52573	98.55
600	304	.55	39269	73.61	646	152	.27	49438	92.67	692	26	.05	52599	98.60
601	315	.57	39584	74.20	647	112	.20	49550	92.88	693	30	.05	52629	98.65
602	270	.49	39854	74.71	648	126	.23	49676	93.12	694	22	.04	52651	98.69
603	286	.51	40140	75.24	649	122	.22	49798	93.35	695	34	.06	52685	98.76
604	305	.55	40445	75.81	650	127	.23	49925	93.58	696	35	.06	52720	98.82
605	286	.51	40731	76.35	651	119	.21	50044	93.81	697	20	.04	52740	98.86
606	296	.53	41027	76.90	652	94	.17	50138	93.98	698	18	.03	52758	98.89
607	302	.54	41329	77.47	653	103	.19	50241	94.18	699	17	.03	52775	98.93
608	287	.52	41616	78.01	654	94	.17	50335	94.35	700	23	.04	52798	98.97
609	273	.49	41889	78.52	655	89	.16	50424	94.52	701	16	.03	52814	99.00
610	263	.47	42152	79.01	656	101	.18	50525	94.71	702	24	.04	52838	99.04
611	252	.45	42404	79.49	657	80	.14	50605	94.86	703	17	.03	52855	99.08
612	270	.49	42674	79.99	658	93	.17	50698	95.03	704	14	.03	52869	99.10
613	239	.43	42913	80.44	659	98	.18	50796	95.22	705	23	.04	52892	99.15
614	259	.47	43172	80.93	660	83	.15	50879	95.37	706	14	.03	52906	99.17
615	257	.46	43429	81.41	661	93	.17	50972	95.55	707	22	.04	52928	99.21
616	258	.46	43687	81.89	662	91	.16	51063	95.72	708	15	.03	52943	99.24
617	282	.51	43969	82.42	663	89	.16	51152	95.88	709	19	.03	52962	99.28
618	230	.41	44199	82.85	664	62	.11	51214	96.00	710	14	.03	52976	99.30
619	213	.38	44412	83.25	665	94	.17	51308	96.18	711	21	.04	52997	99.34
620	216	.39	44628	83.65	666	76	.14	51384	96.32	712	17	.03	53014	99.37
621	242	.44	44870	84.11	667	69	.12	51453	96.45	713	11	.02	53025	99.39
622	235	.42	45105	84.55	668	54	.10	51507	96.55	714	13	.02	53038	99.42
623	228	.41	45333	84.98	669	61	.11	51568	96.66	715	20	.04	53058	99.46

Appendix 19. Mathematics 8 Scale Score Distribution (Continued)

SS	Freq.	%	Cum. Freq.	Cum. %	SS	Freq.	%	Cum. Freq.	Cum. %	SS	Freq.	%	Cum. Freq.	Cum. %
716	13	.02	53071	99.48	740	6	.01	53245	99.81	767	1	.00	53309	99.93
717	13	.02	53084	99.51	741	4	.01	53249	99.81	768	2	.00	53311	99.93
718	16	.03	53100	99.54	742	4	.01	53253	99.82	769	1	.00	53312	99.93
719	11	.02	53111	99.56	743	4	.01	53257	99.83	772	2	.00	53314	99.94
720	11	.02	53122	99.58	744	3	.01	53260	99.84	777	2	.00	53316	99.94
721	8	.01	53130	99.59	745	2	.00	53262	99.84	779	3	.01	53319	99.95
722	4	.01	53134	99.60	746	3	.01	53265	99.84	780	1	.00	53320	99.95
723	6	.01	53140	99.61	747	4	.01	53269	99.85	781	1	.00	53321	99.95
724	9	.02	53149	99.63	748	3	.01	53272	99.86	785	2	.00	53323	99.95
725	5	.01	53154	99.64	749	1	.00	53273	99.86	786	1	.00	53324	99.96
726	6	.01	53160	99.65	750	3	.01	53276	99.87	789	1	.00	53325	99.96
727	9	.02	53169	99.66	752	5	.01	53281	99.87	790	1	.00	53326	99.96
728	8	.01	53177	99.68	753	3	.01	53284	99.88	792	1	.00	53327	99.96
729	10	.02	53187	99.70	754	3	.01	53287	99.89	800	1	.00	53328	99.96
730	6	.01	53193	99.71	755	3	.01	53290	99.89	801	1	.00	53329	99.96
731	9	.02	53202	99.73	756	4	.01	53294	99.90	805	3	.01	53332	99.97
732	8	.01	53210	99.74	757	2	.00	53296	99.90	807	1	.00	53333	99.97
733	6	.01	53216	99.75	758	1	.00	53297	99.90	815	1	.00	53334	99.97
734	3	.01	53219	99.76	760	1	.00	53298	99.91	818	1	.00	53335	99.98
735	8	.01	53227	99.77	761	3	.01	53301	99.91	819	1	.00	53336	99.98
736	3	.01	53230	99.78	762	1	.00	53302	99.91	832	3	.01	53339	99.98
737	3	.01	53233	99.78	763	2	.00	53304	99.92	854	1	.00	53340	99.99
738	4	.01	53237	99.79	765	1	.00	53305	99.92	864	1	.00	53341	99.99
739	2	.00	53239	99.80	766	3	.01	53308	99.93	890	7	.01	53348	100.00

Figure 19. Mathematics 8 Scale Score Distributions for the Total Population, Female, and Male Students



Appendix 18. Writing 8 Scale Score Distribution

(SS = Scale Score, Freq. = Frequency, Cum. = Cumulative)

SS	Freq.	%	Cum. Freq.	Cum. %	SS	Freq.	%	Cum. Freq.	Cum. %	SS	Freq.	%	Cum. Freq.	Cum. %
250	13	.02	13	.02	327	4	.01	90	.17	371	10	.02	321	.60
251	1	.00	14	.03	328	2	.00	92	.17	372	15	.03	336	.63
252	1	.00	15	.03	329	3	.01	95	.18	373	11	.02	347	.65
258	1	.00	16	.03	330	3	.01	98	.18	374	12	.02	359	.67
259	1	.00	17	.03	331	4	.01	102	.19	375	7	.01	366	.68
260	1	.00	18	.03	333	1	.00	103	.19	376	17	.03	383	.72
262	2	.00	20	.04	334	1	.00	104	.19	377	18	.03	401	.75
264	1	.00	21	.04	335	6	.01	110	.21	378	22	.04	423	.79
267	1	.00	22	.04	336	4	.01	114	.21	379	19	.03	442	.83
268	1	.00	23	.04	337	4	.01	118	.22	380	13	.02	455	.85
271	2	.00	25	.05	338	3	.01	121	.23	381	19	.03	474	.89
275	2	.00	27	.05	339	4	.01	125	.23	382	19	.03	493	.92
280	1	.00	28	.05	340	8	.01	133	.25	383	15	.03	508	.95
282	1	.00	29	.05	341	4	.01	137	.26	384	21	.04	529	.99
285	3	.01	32	.06	342	8	.01	145	.27	385	17	.03	546	1.02
286	1	.00	33	.06	343	3	.01	148	.28	386	20	.04	566	1.06
289	1	.00	34	.06	344	4	.01	152	.28	387	22	.04	588	1.10
290	1	.00	35	.07	345	4	.01	156	.29	388	21	.04	609	1.14
292	1	.00	36	.07	346	6	.01	162	.30	389	25	.04	634	1.19
295	1	.00	37	.07	347	2	.00	164	.31	390	29	.05	663	1.24
296	1	.00	38	.07	348	1	.00	165	.31	391	33	.06	696	1.30
297	3	.01	41	.08	349	2	.00	167	.31	392	10	.02	706	1.32
300	3	.01	44	.08	350	2	.00	169	.32	393	20	.04	726	1.36
301	1	.00	45	.08	351	3	.01	172	.32	394	20	.04	746	1.40
303	1	.00	46	.09	352	4	.01	176	.33	395	28	.05	774	1.45
304	2	.00	48	.09	353	8	.01	184	.34	396	26	.05	800	1.50
305	1	.00	49	.09	354	6	.01	190	.36	397	24	.04	824	1.54
307	1	.00	50	.09	355	3	.01	193	.36	398	25	.04	849	1.59
308	2	.00	52	.10	356	6	.01	199	.37	399	39	.07	888	1.66
309	2	.00	54	.10	357	10	.02	209	.39	400	29	.05	917	1.72
311	2	.00	56	.10	358	6	.01	215	.40	401	25	.04	942	1.76
312	3	.01	59	.11	359	6	.01	221	.41	402	25	.04	967	1.81
313	1	.00	60	.11	360	8	.01	229	.43	403	29	.05	996	1.86
315	3	.01	63	.12	361	4	.01	233	.44	404	29	.05	1025	1.92
316	1	.00	64	.12	362	6	.01	239	.45	405	52	.09	1077	2.01
317	4	.01	68	.13	363	11	.02	250	.47	406	44	.08	1121	2.10
318	1	.00	69	.13	364	7	.01	257	.48	407	49	.09	1170	2.19
319	2	.00	71	.13	365	3	.01	260	.49	408	39	.07	1209	2.26
321	2	.00	73	.14	366	8	.01	268	.50	409	47	.08	1256	2.35
322	1	.00	74	.14	367	9	.02	277	.52	410	43	.08	1299	2.43
323	4	.01	78	.15	368	7	.01	284	.53	411	39	.07	1338	2.50
324	4	.01	82	.15	369	17	.03	301	.56	412	35	.06	1373	2.57
326	4	.01	86	.16	370	10	.02	311	.58	413	37	.07	1410	2.64

Appendix 18. Writing 8 Scale Score Distribution (Continued)

SS	Freq.	%	Cum. Freq	Cum. %	SS	Freq.	%	Cum. Freq	Cum. %	SS	Freq.	%	Cum. Freq	Cum. %
414	47	.08	1457	2.73	460	129	.23	4989	9.33	506	197	.35	12298	23.00
415	54	.10	1511	2.83	461	123	.22	5112	9.56	507	205	.37	12503	23.39
416	48	.09	1559	2.92	462	111	.20	5223	9.77	508	197	.35	12700	23.75
417	49	.09	1608	3.01	463	115	.21	5338	9.98	509	223	.40	12923	24.17
418	50	.09	1658	3.10	464	151	.27	5489	10.27	510	227	.41	13150	24.60
419	63	.11	1721	3.22	465	120	.22	5609	10.49	511	211	.38	13361	24.99
420	42	.08	1763	3.30	466	119	.21	5728	10.71	512	210	.38	13571	25.38
421	45	.08	1808	3.38	467	126	.23	5854	10.95	513	236	.42	13807	25.82
422	39	.07	1847	3.45	468	113	.20	5967	11.16	514	191	.34	13998	26.18
423	52	.09	1899	3.55	469	128	.23	6095	11.40	515	245	.44	14243	26.64
424	53	.10	1952	3.65	470	131	.24	6226	11.65	516	223	.40	14466	27.06
425	59	.11	2011	3.76	471	144	.26	6370	11.91	517	242	.44	14708	27.51
426	59	.11	2070	3.87	472	121	.22	6491	12.14	518	237	.43	14945	27.95
427	55	.10	2125	3.97	473	141	.25	6632	12.40	519	257	.46	15202	28.43
428	60	.11	2185	4.09	474	124	.22	6756	12.64	520	246	.44	15448	28.89
429	62	.11	2247	4.20	475	152	.27	6908	12.92	521	249	.45	15697	29.36
430	63	.11	2310	4.32	476	132	.24	7040	13.17	522	252	.45	15949	29.83
431	78	.14	2388	4.47	477	157	.28	7197	13.46	523	259	.47	16208	30.32
432	63	.11	2451	4.58	478	172	.31	7369	13.78	524	238	.43	16446	30.76
433	79	.14	2530	4.73	479	139	.25	7508	14.04	525	277	.50	16723	31.28
434	81	.15	2611	4.88	480	157	.28	7665	14.34	526	257	.46	16980	31.76
435	65	.12	2676	5.01	481	131	.24	7796	14.58	527	257	.46	17237	32.24
436	74	.13	2750	5.14	482	169	.30	7965	14.90	528	277	.50	17514	32.76
437	70	.13	2820	5.27	483	164	.30	8129	15.20	529	227	.41	17741	33.18
438	73	.13	2893	5.41	484	164	.30	8293	15.51	530	274	.49	18015	33.70
439	86	.15	2979	5.57	485	162	.29	8455	15.81	531	277	.50	18292	34.21
440	70	.13	3049	5.70	486	160	.29	8615	16.11	532	259	.47	18551	34.70
441	106	.19	3155	5.90	487	146	.26	8761	16.39	533	254	.46	18805	35.17
442	82	.15	3237	6.05	488	172	.31	8933	16.71	534	292	.53	19097	35.72
443	76	.14	3313	6.20	489	163	.29	9096	17.01	535	291	.52	19388	36.26
444	80	.14	3393	6.35	490	195	.35	9291	17.38	536	289	.52	19677	36.80
445	83	.15	3476	6.50	491	169	.30	9460	17.69	537	280	.50	19957	37.33
446	91	.16	3567	6.67	492	164	.30	9624	18.00	538	288	.52	20245	37.87
447	77	.14	3644	6.82	493	179	.32	9803	18.34	539	276	.50	20521	38.38
448	93	.17	3737	6.99	494	164	.30	9967	18.64	540	297	.53	20818	38.94
449	94	.17	3831	7.17	495	172	.31	10139	18.96	541	340	.61	21158	39.57
450	95	.17	3926	7.34	496	180	.32	10319	19.30	542	279	.50	21437	40.10
451	85	.15	4011	7.50	497	193	.35	10512	19.66	543	280	.50	21717	40.62
452	113	.20	4124	7.71	498	178	.32	10690	19.99	544	264	.48	21981	41.11
453	96	.17	4220	7.89	499	197	.35	10887	20.36	545	308	.55	22289	41.69
454	102	.18	4322	8.08	500	185	.33	11072	20.71	546	339	.61	22628	42.32
455	103	.19	4425	8.28	501	203	.37	11275	21.09	547	349	.63	22977	42.98
456	91	.16	4516	8.45	502	215	.39	11490	21.49	548	276	.50	23253	43.49
457	115	.21	4631	8.66	503	211	.38	11701	21.89	549	318	.57	23571	44.09
458	109	.20	4740	8.87	504	199	.36	11900	22.26	550	317	.57	23888	44.68
459	120	.22	4860	9.09	505	201	.36	12101	22.63	551	313	.56	24201	45.27

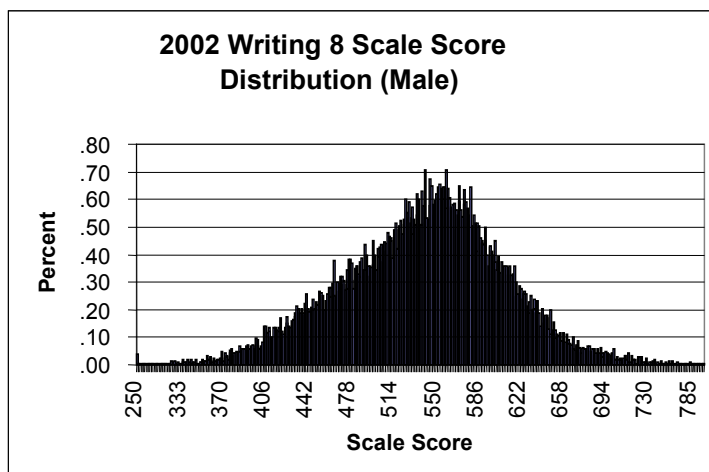
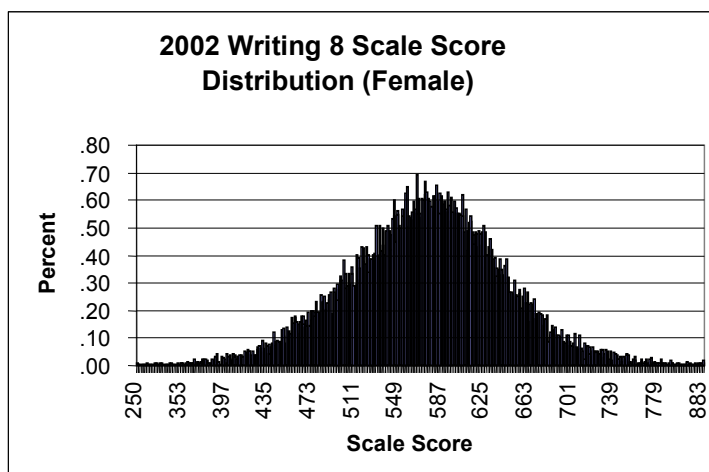
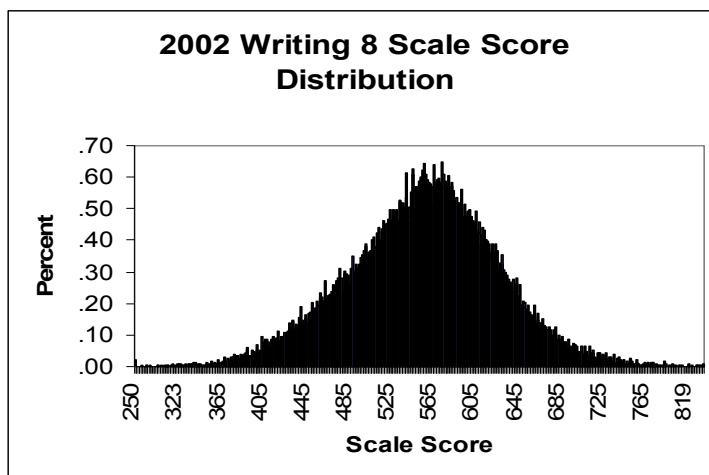
Appendix 18. Writing 8 Scale Score Distribution (Continued)

SS	Freq.	%	Cum. Freq	Cum. %	SS	Freq.	%	Cum. Freq	Cum. %	SS	Freq.	%	Cum. Freq	Cum. %
552	319	.57	24520	45.86	598	271	.49	38924	72.80	644	147	.26	48270	90.29
553	326	.59	24846	46.47	599	274	.49	39198	73.32	645	157	.28	48427	90.58
554	333	.60	25179	47.10	600	277	.50	39475	73.83	646	124	.22	48551	90.81
555	328	.59	25507	47.71	601	263	.47	39738	74.33	647	143	.26	48694	91.08
556	345	.62	25852	48.35	602	248	.45	39986	74.79	648	104	.19	48798	91.27
557	340	.61	26192	48.99	603	258	.46	40244	75.27	649	107	.19	48905	91.47
558	359	.65	26551	49.66	604	255	.46	40499	75.75	650	115	.21	49020	91.69
559	338	.61	26889	50.29	605	244	.44	40743	76.21	651	107	.19	49127	91.89
560	310	.56	27199	50.87	606	274	.49	41017	76.72	652	112	.20	49239	92.10
561	328	.59	27527	51.49	607	241	.43	41258	77.17	653	102	.18	49341	92.29
562	324	.58	27851	52.09	608	233	.42	41491	77.61	654	99	.18	49440	92.47
563	306	.55	28157	52.67	609	255	.46	41746	78.08	655	92	.17	49532	92.65
564	322	.58	28479	53.27	610	236	.42	41982	78.52	656	108	.19	49640	92.85
565	318	.57	28797	53.86	611	213	.38	42195	78.92	657	96	.17	49736	93.03
566	355	.64	29152	54.53	612	233	.42	42428	79.36	658	90	.16	49826	93.20
567	288	.52	29440	55.07	613	244	.44	42672	79.81	659	91	.16	49917	93.37
568	324	.58	29764	55.67	614	240	.43	42912	80.26	660	78	.14	49995	93.51
569	305	.55	30069	56.24	615	224	.40	43136	80.68	661	109	.20	50104	93.72
570	330	.59	30399	56.86	616	223	.40	43359	81.10	662	88	.16	50192	93.88
571	332	.60	30731	57.48	617	222	.40	43581	81.51	663	74	.13	50266	94.02
572	323	.58	31054	58.08	618	217	.39	43798	81.92	664	94	.17	50360	94.19
573	322	.58	31376	58.69	619	201	.36	43999	82.30	665	82	.15	50442	94.35
574	361	.65	31737	59.36	620	189	.34	44188	82.65	666	73	.13	50515	94.48
575	338	.61	32075	59.99	621	215	.39	44403	83.05	667	78	.14	50593	94.63
576	314	.56	32389	60.58	622	203	.37	44606	83.43	668	76	.14	50669	94.77
577	326	.59	32715	61.19	623	197	.35	44803	83.80	669	85	.15	50754	94.93
578	317	.57	33032	61.78	624	199	.36	45002	84.17	670	72	.13	50826	95.07
579	308	.55	33340	62.36	625	215	.39	45217	84.57	671	71	.13	50897	95.20
580	335	.60	33675	62.99	626	204	.37	45421	84.96	672	70	.13	50967	95.33
581	311	.56	33986	63.57	627	171	.31	45592	85.28	673	64	.12	51031	95.45
582	310	.56	34296	64.15	628	170	.31	45762	85.59	674	66	.12	51097	95.57
583	316	.57	34612	64.74	629	183	.33	45945	85.94	675	69	.12	51166	95.70
584	323	.58	34935	65.34	630	179	.32	46124	86.27	676	52	.09	51218	95.80
585	309	.56	35244	65.92	631	197	.35	46321	86.64	677	65	.12	51283	95.92
586	286	.51	35530	66.46	632	171	.31	46492	86.96	678	55	.10	51338	96.02
587	294	.53	35824	67.01	633	165	.30	46657	87.27	679	65	.12	51403	96.15
588	298	.54	36122	67.56	634	165	.30	46822	87.58	680	44	.08	51447	96.23
589	288	.52	36410	68.10	635	160	.29	46982	87.88	681	69	.12	51516	96.36
590	287	.52	36697	68.64	636	131	.24	47113	88.12	682	38	.07	51554	96.43
591	285	.51	36982	69.17	637	154	.28	47267	88.41	683	48	.09	51602	96.52
592	282	.51	37264	69.70	638	149	.27	47416	88.69	684	42	.08	51644	96.60
593	313	.56	37577	70.28	639	146	.26	47562	88.96	685	56	.10	51700	96.70
594	264	.48	37841	70.78	640	143	.26	47705	89.23	686	47	.08	51747	96.79
595	261	.47	38102	71.27	641	153	.28	47858	89.51	687	53	.10	51800	96.89
596	286	.51	38388	71.80	642	133	.24	47991	89.76	688	46	.08	51846	96.97
597	265	.48	38653	72.30	643	132	.24	48123	90.01	689	42	.08	51888	97.05

Appendix 18. Writing 8 Scale Score Distribution (Continued)

SS	Freq.	%	Cum. Freq	Cum. %	SS	Freq.	%	Cum. Freq	Cum. %	SS	Freq.	%	Cum. Freq	Cum. %
690	44	.08	51932	97.13	736	21	.04	53098	99.32	784	2	.00	53374	99.83
691	43	.08	51975	97.21	737	7	.01	53105	99.33	785	9	.02	53383	99.85
692	37	.07	52012	97.28	738	5	.01	53110	99.34	787	4	.01	53387	99.86
693	35	.06	52047	97.35	739	15	.03	53125	99.37	788	1	.00	53388	99.86
694	49	.09	52096	97.44	740	8	.01	53133	99.38	790	5	.01	53393	99.87
695	37	.07	52133	97.51	741	16	.03	53149	99.41	791	1	.00	53394	99.87
696	32	.06	52165	97.57	742	12	.02	53161	99.43	792	3	.01	53397	99.87
697	34	.06	52199	97.63	743	7	.01	53168	99.45	793	1	.00	53398	99.88
698	41	.07	52240	97.71	744	9	.02	53177	99.46	796	3	.01	53401	99.88
699	38	.07	52278	97.78	745	12	.02	53189	99.49	797	1	.00	53402	99.88
700	37	.07	52315	97.85	746	6	.01	53195	99.50	798	6	.01	53408	99.90
701	36	.06	52351	97.92	747	4	.01	53199	99.50	799	2	.00	53410	99.90
702	26	.05	52377	97.97	748	4	.01	53203	99.51	800	2	.00	53412	99.90
703	27	.05	52404	98.02	749	10	.02	53213	99.53	801	1	.00	53413	99.90
704	26	.05	52430	98.07	750	6	.01	53219	99.54	802	1	.00	53414	99.91
705	37	.07	52467	98.14	751	13	.02	53232	99.57	804	1	.00	53415	99.91
706	26	.05	52493	98.18	752	14	.03	53246	99.59	805	2	.00	53417	99.91
707	20	.04	52513	98.22	753	10	.02	53256	99.61	806	2	.00	53419	99.92
708	22	.04	52535	98.26	754	5	.01	53261	99.62	808	1	.00	53420	99.92
709	37	.07	52572	98.33	755	4	.01	53265	99.63	811	2	.00	53422	99.92
710	27	.05	52599	98.38	756	1	.00	53266	99.63	812	1	.00	53423	99.92
711	26	.05	52625	98.43	757	8	.01	53274	99.64	816	1	.00	53424	99.93
712	20	.04	52645	98.47	758	12	.02	53286	99.67	818	1	.00	53425	99.93
713	35	.06	52680	98.53	759	5	.01	53291	99.68	819	1	.00	53426	99.93
714	10	.02	52690	98.55	760	1	.00	53292	99.68	820	3	.01	53429	99.93
715	23	.04	52713	98.60	761	3	.01	53295	99.68	822	5	.01	53434	99.94
716	29	.05	52742	98.65	762	2	.00	53297	99.69	823	1	.00	53435	99.95
717	24	.04	52766	98.69	763	2	.00	53299	99.69	825	2	.00	53437	99.95
718	17	.03	52783	98.73	764	6	.01	53305	99.70	831	1	.00	53438	99.95
719	15	.03	52798	98.75	765	7	.01	53312	99.72	837	1	.00	53439	99.95
720	15	.03	52813	98.78	766	3	.01	53315	99.72	839	1	.00	53440	99.96
721	25	.04	52838	98.83	767	6	.01	53321	99.73	842	1	.00	53441	99.96
722	23	.04	52861	98.87	768	1	.00	53322	99.73	853	3	.01	53444	99.96
723	23	.04	52884	98.92	769	7	.01	53329	99.75	857	2	.00	53446	99.97
724	14	.03	52898	98.94	770	3	.01	53332	99.75	860	3	.01	53449	99.97
725	22	.04	52920	98.98	771	3	.01	53335	99.76	867	1	.00	53450	99.97
726	15	.03	52935	99.01	772	7	.01	53342	99.77	883	2	.00	53452	99.98
727	19	.03	52954	99.05	773	8	.01	53350	99.79	890	3	.01	53455	99.98
728	15	.03	52969	99.07	774	3	.01	53353	99.79	891	3	.01	53458	99.99
729	23	.04	52992	99.12	776	3	.01	53356	99.80	910	6	.01	53464	100.00
730	10	.02	53002	99.14	777	5	.01	53361	99.81					
731	15	.03	53017	99.16	778	3	.01	53364	99.81					
732	18	.03	53035	99.20	779	2	.00	53366	99.82					
733	14	.03	53049	99.22	780	3	.01	53369	99.82					
734	18	.03	53067	99.26	781	1	.00	53370	99.82					
735	10	.02	53077	99.28	783	2	.00	53372	99.83					

Figure 18. Writing 8 Scale Score Distributions for the Total Population, Female, and Male Students



Appendix 17. Reading 8 Scale Score Distribution

(SS = Scale Score, Freq. = Frequency, Cum. = Cumulative)

SS	Freq.	%	Cum. Freq.	Cum. %	SS	Freq.	%	Cum. Freq.	Cum. %	SS	Freq.	%	Cum. Freq.	Cum. %
330	81	.15	81	.15	440	6	.01	173	.32	483	13	.02	547	1.02
332	2	.00	83	.16	441	5	.01	178	.33	484	15	.03	562	1.05
336	1	.00	84	.16	442	3	.01	181	.34	485	17	.03	579	1.08
369	1	.00	85	.16	443	6	.01	187	.35	486	18	.03	597	1.12
377	1	.00	86	.16	444	6	.01	193	.36	487	17	.03	614	1.15
384	1	.00	87	.16	445	7	.01	200	.37	488	15	.03	629	1.18
390	1	.00	88	.16	446	8	.01	208	.39	489	15	.03	644	1.21
391	1	.00	89	.17	447	4	.01	212	.40	490	20	.04	664	1.24
395	1	.00	90	.17	448	7	.01	219	.41	491	23	.04	687	1.29
396	1	.00	91	.17	449	3	.01	222	.42	492	12	.02	699	1.31
397	1	.00	92	.17	450	5	.01	227	.43	493	16	.03	715	1.34
398	2	.00	94	.18	451	7	.01	234	.44	494	19	.03	734	1.37
402	1	.00	95	.18	452	4	.01	238	.45	495	18	.03	752	1.41
403	2	.00	97	.18	453	5	.01	243	.45	496	23	.04	775	1.45
405	2	.00	99	.19	454	8	.01	251	.47	497	23	.04	798	1.49
406	1	.00	100	.19	455	3	.01	254	.48	498	17	.03	815	1.53
407	1	.00	101	.19	456	4	.01	258	.48	499	19	.03	834	1.56
411	1	.00	102	.19	457	9	.02	267	.50	500	15	.03	849	1.59
412	3	.01	105	.20	458	5	.01	272	.51	501	28	.05	877	1.64
413	2	.00	107	.20	459	11	.02	283	.53	502	25	.04	902	1.69
414	2	.00	109	.20	460	6	.01	289	.54	503	13	.02	915	1.71
416	2	.00	111	.21	461	3	.01	292	.55	504	27	.05	942	1.76
418	2	.00	113	.21	462	12	.02	304	.57	505	25	.04	967	1.81
419	1	.00	114	.21	463	7	.01	311	.58	506	27	.05	994	1.86
420	1	.00	115	.22	464	5	.01	316	.59	507	28	.05	1022	1.91
421	2	.00	117	.22	465	9	.02	325	.61	508	26	.05	1048	1.96
423	2	.00	119	.22	466	8	.01	333	.62	509	17	.03	1065	1.99
424	2	.00	121	.23	467	8	.01	341	.64	510	32	.06	1097	2.05
425	3	.01	124	.23	468	15	.03	356	.67	511	28	.05	1125	2.11
426	3	.01	127	.24	469	7	.01	363	.68	512	32	.06	1157	2.17
427	3	.01	130	.24	470	12	.02	375	.70	513	36	.06	1193	2.23
428	1	.00	131	.25	471	15	.03	390	.73	514	27	.05	1220	2.28
429	1	.00	132	.25	472	8	.01	398	.75	515	34	.06	1254	2.35
430	5	.01	137	.26	473	6	.01	404	.76	516	40	.07	1294	2.42
431	1	.00	138	.26	474	13	.02	417	.78	517	38	.07	1332	2.49
432	5	.01	143	.27	475	12	.02	429	.80	518	45	.08	1377	2.58
433	3	.01	146	.27	476	10	.02	439	.82	519	43	.08	1420	2.66
434	2	.00	148	.28	477	15	.03	454	.85	520	37	.07	1457	2.73
435	3	.01	151	.28	478	13	.02	467	.87	521	39	.07	1496	2.80
436	3	.01	154	.29	479	18	.03	485	.91	522	39	.07	1535	2.87
437	4	.01	158	.30	480	10	.02	495	.93	523	39	.07	1574	2.95
438	4	.01	162	.30	481	14	.03	509	.95	524	45	.08	1619	3.03
439	5	.01	167	.31	482	25	.04	534	1.00	525	36	.06	1655	3.10

Appendix 17. Reading 8 Scale Score Distribution (Continued)

SS	Freq.	%	Cum. Freq.	Cum. %	SS	Freq.	%	Cum. Freq.	Cum. %	SS	Freq.	%	Cum. Freq.	Cum. %
526	48	.09	1703	3.19	572	135	.24	5341	10.00	618	235	.42	13697	25.65
527	38	.07	1741	3.26	573	108	.19	5449	10.20	619	251	.45	13948	26.11
528	47	.08	1788	3.35	574	127	.23	5576	10.44	620	266	.48	14214	26.61
529	45	.08	1833	3.43	575	148	.27	5724	10.72	621	284	.51	14498	27.14
530	51	.09	1884	3.53	576	135	.24	5859	10.97	622	266	.48	14764	27.64
531	37	.07	1921	3.60	577	115	.21	5974	11.19	623	267	.48	15031	28.14
532	49	.09	1970	3.69	578	147	.26	6121	11.46	624	293	.53	15324	28.69
533	44	.08	2014	3.77	579	129	.23	6250	11.70	625	283	.51	15607	29.22
534	46	.08	2060	3.86	580	157	.28	6407	12.00	626	275	.49	15882	29.74
535	64	.12	2124	3.98	581	156	.28	6563	12.29	627	272	.49	16154	30.25
536	55	.10	2179	4.08	582	116	.21	6679	12.51	628	281	.51	16435	30.77
537	56	.10	2235	4.18	583	154	.28	6833	12.79	629	287	.52	16722	31.31
538	62	.11	2297	4.30	584	173	.31	7006	13.12	630	290	.52	17012	31.85
539	64	.12	2361	4.42	585	160	.29	7166	13.42	631	294	.53	17306	32.40
540	61	.11	2422	4.53	586	152	.27	7318	13.70	632	297	.53	17603	32.96
541	65	.12	2487	4.66	587	148	.27	7466	13.98	633	265	.48	17868	33.45
542	82	.15	2569	4.81	588	160	.29	7626	14.28	634	327	.59	18195	34.07
543	57	.10	2626	4.92	589	167	.30	7793	14.59	635	309	.56	18504	34.65
544	70	.13	2696	5.05	590	160	.29	7953	14.89	636	313	.56	18817	35.23
545	49	.09	2745	5.14	591	167	.30	8120	15.20	637	305	.55	19122	35.80
546	59	.11	2804	5.25	592	143	.26	8263	15.47	638	336	.60	19458	36.43
547	71	.13	2875	5.38	593	146	.26	8409	15.74	639	363	.65	19821	37.11
548	86	.15	2961	5.54	594	181	.33	8590	16.08	640	330	.59	20151	37.73
549	83	.15	3044	5.70	595	171	.31	8761	16.40	641	356	.64	20507	38.40
550	81	.15	3125	5.85	596	182	.33	8943	16.74	642	383	.69	20890	39.11
551	94	.17	3219	6.03	597	154	.28	9097	17.03	643	347	.62	21237	39.76
552	96	.17	3315	6.21	598	181	.33	9278	17.37	644	367	.66	21604	40.45
553	80	.14	3395	6.36	599	202	.36	9480	17.75	645	339	.61	21943	41.08
554	72	.13	3467	6.49	600	210	.38	9690	18.14	646	364	.65	22307	41.77
555	104	.19	3571	6.69	601	204	.37	9894	18.52	647	358	.64	22665	42.44
556	105	.19	3676	6.88	602	201	.36	10095	18.90	648	381	.69	23046	43.15
557	96	.17	3772	7.06	603	226	.41	10321	19.32	649	379	.68	23425	43.86
558	89	.16	3861	7.23	604	207	.37	10528	19.71	650	377	.68	23802	44.56
559	95	.17	3956	7.41	605	203	.37	10731	20.09	651	415	.75	24217	45.34
560	88	.16	4044	7.57	606	206	.37	10937	20.48	652	386	.69	24603	46.06
561	99	.18	4143	7.76	607	218	.39	11155	20.89	653	397	.71	25000	46.81
562	112	.20	4255	7.97	608	202	.36	11357	21.26	654	379	.68	25379	47.52
563	93	.17	4348	8.14	609	238	.43	11595	21.71	655	369	.66	25748	48.21
564	91	.16	4439	8.31	610	233	.42	11828	22.15	656	407	.73	26155	48.97
565	111	.20	4550	8.52	611	225	.40	12053	22.57	657	413	.74	26568	49.74
566	109	.20	4659	8.72	612	216	.39	12269	22.97	658	421	.76	26989	50.53
567	113	.20	4772	8.93	613	213	.38	12482	23.37	659	428	.77	27417	51.33
568	91	.16	4863	9.11	614	255	.46	12737	23.85	660	377	.68	27794	52.04
569	109	.20	4972	9.31	615	245	.44	12982	24.31	661	435	.78	28229	52.85
570	127	.23	5099	9.55	616	229	.41	13211	24.74	662	412	.74	28641	53.62
571	107	.19	5206	9.75	617	251	.45	13462	25.21	663	424	.76	29065	54.42

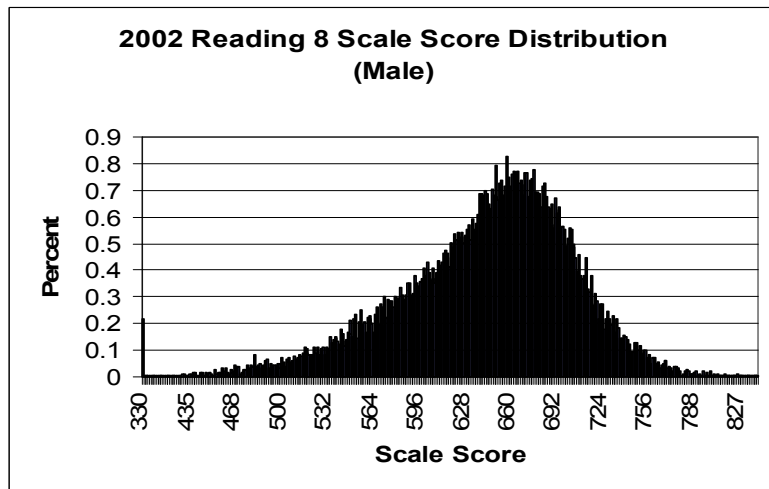
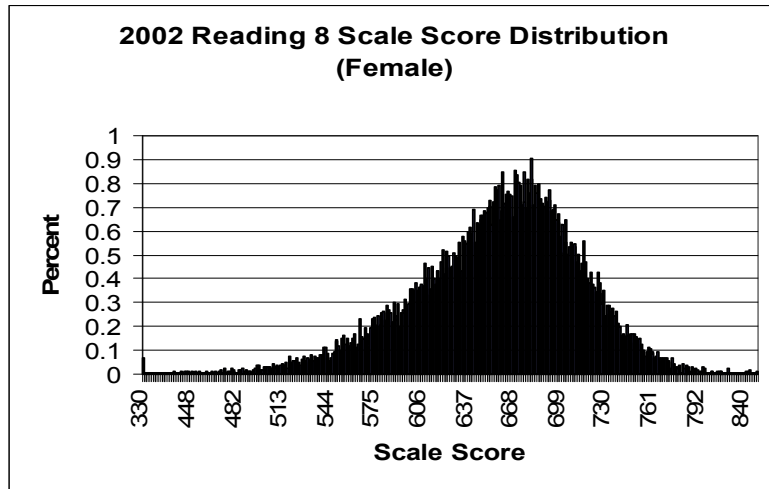
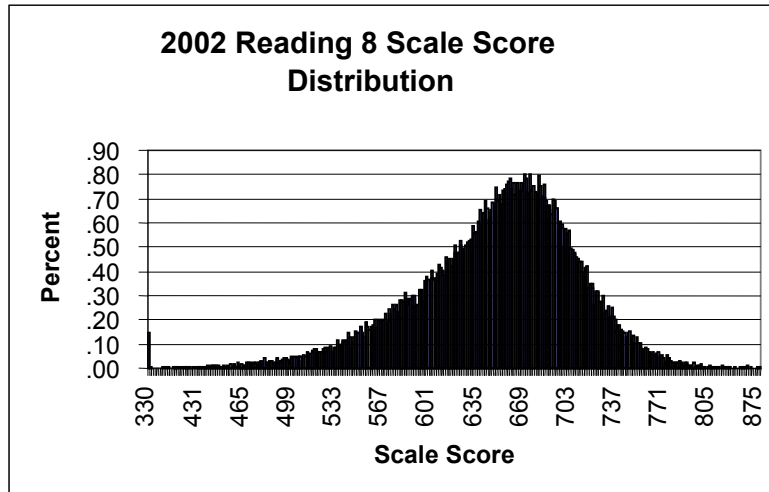
Appendix 17. Reading 8 Scale Score Distribution (Continued)

SS	Freq.	%	Cum. Freq.	Cum. %	SS	Freq.	%	Cum. Freq.	Cum. %	SS	Freq.	%	Cum. Freq.	Cum. %
664	397	.71	29462	55.16	710	252	.45	46284	86.66	756	48	.09	52387	98.08
665	397	.71	29859	55.91	711	234	.42	46518	87.10	757	44	.08	52431	98.17
666	424	.76	30283	56.70	712	244	.44	46762	87.55	758	40	.07	52471	98.24
667	410	.74	30693	57.47	713	245	.44	47007	88.01	759	41	.07	52512	98.32
668	388	.70	31081	58.19	714	220	.40	47227	88.42	760	49	.09	52561	98.41
669	426	.77	31507	58.99	715	232	.42	47459	88.86	761	45	.08	52606	98.49
670	407	.73	31914	59.75	716	210	.38	47669	89.25	762	39	.07	52645	98.57
671	445	.80	32359	60.59	717	235	.42	47904	89.69	763	34	.06	52679	98.63
672	435	.78	32794	61.40	718	185	.33	48089	90.04	764	34	.06	52713	98.70
673	406	.73	33200	62.16	719	194	.35	48283	90.40	765	36	.06	52749	98.76
674	402	.72	33602	62.91	720	194	.35	48477	90.76	766	31	.06	52780	98.82
675	446	.80	34048	63.75	721	183	.33	48660	91.11	767	33	.06	52813	98.88
676	396	.71	34444	64.49	722	145	.26	48805	91.38	768	33	.06	52846	98.94
677	410	.74	34854	65.26	723	177	.32	48982	91.71	769	37	.07	52883	99.01
678	419	.75	35273	66.04	724	172	.31	49154	92.03	770	28	.05	52911	99.07
679	404	.73	35677	66.80	725	178	.32	49332	92.36	771	30	.05	52941	99.12
680	400	.72	36077	67.55	726	154	.28	49486	92.65	772	17	.03	52958	99.15
681	442	.80	36519	68.37	727	154	.28	49640	92.94	773	25	.04	52983	99.20
682	375	.67	36894	69.08	728	140	.25	49780	93.20	774	14	.03	52997	99.23
683	420	.76	37314	69.86	729	166	.30	49946	93.51	775	30	.05	53027	99.28
684	396	.71	37710	70.60	730	127	.23	50073	93.75	776	23	.04	53050	99.33
685	422	.76	38132	71.39	731	133	.24	50206	94.00	777	19	.03	53069	99.36
686	391	.70	38523	72.13	732	143	.26	50349	94.27	778	16	.03	53085	99.39
687	383	.69	38906	72.84	733	114	.21	50463	94.48	779	13	.02	53098	99.42
688	375	.67	39281	73.55	734	120	.22	50583	94.71	780	12	.02	53110	99.44
689	375	.67	39656	74.25	735	138	.25	50721	94.97	781	5	.01	53115	99.45
690	363	.65	40019	74.93	736	118	.21	50839	95.19	782	13	.02	53128	99.47
691	355	.64	40374	75.59	737	113	.20	50952	95.40	783	14	.03	53142	99.50
692	387	.70	40761	76.32	738	84	.15	51036	95.56	784	18	.03	53160	99.53
693	385	.69	41146	77.04	739	99	.18	51135	95.74	785	12	.02	53172	99.55
694	368	.66	41514	77.73	740	98	.18	51233	95.92	786	11	.02	53183	99.57
695	366	.66	41880	78.41	741	87	.16	51320	96.09	787	7	.01	53190	99.59
696	316	.57	42196	79.00	742	86	.15	51406	96.25	788	12	.02	53202	99.61
697	336	.60	42532	79.63	743	78	.14	51484	96.39	789	9	.02	53211	99.63
698	330	.59	42862	80.25	744	82	.15	51566	96.55	790	12	.02	53223	99.65
699	322	.58	43184	80.85	745	71	.13	51637	96.68	791	8	.01	53231	99.66
700	278	.50	43462	81.37	746	71	.13	51708	96.81	792	8	.01	53239	99.68
701	319	.57	43781	81.97	747	83	.15	51791	96.97	793	6	.01	53245	99.69
702	297	.53	44078	82.53	748	84	.15	51875	97.13	794	5	.01	53250	99.70
703	308	.55	44386	83.10	749	69	.12	51944	97.26	795	14	.03	53264	99.73
704	318	.57	44704	83.70	750	75	.13	52019	97.40	796	5	.01	53269	99.74
705	275	.49	44979	84.21	751	75	.13	52094	97.54	797	7	.01	53276	99.75
706	271	.49	45250	84.72	752	59	.11	52153	97.65	798	6	.01	53282	99.76
707	265	.48	45515	85.22	753	70	.13	52223	97.78	799	4	.01	53286	99.77
708	263	.47	45778	85.71	754	59	.11	52282	97.89	800	9	.02	53295	99.78
709	254	.46	46032	86.19	755	57	.10	52339	97.99	801	3	.01	53298	99.79

Appendix 17. Reading 8 Scale Score Distribution (Continued)

SS	Freq.	%	Cum. Freq.	Cum. %	SS	Freq.	%	Cum. Freq.	Cum. %	SS	Freq.	%	Cum. Freq.	Cum. %
802	5	.01	53303	99.80	818	2	.00	53353	99.89	849	6	.01	53390	99.96
803	5	.01	53308	99.81	819	3	.01	53356	99.90	856	1	.00	53391	99.96
804	1	.00	53309	99.81	820	2	.00	53358	99.90	867	5	.01	53396	99.97
805	2	.00	53311	99.81	821	2	.00	53360	99.91	869	1	.00	53397	99.98
806	6	.01	53317	99.83	822	1	.00	53361	99.91	874	1	.00	53398	99.98
807	1	.00	53318	99.83	825	1	.00	53362	99.91	875	1	.00	53399	99.98
808	4	.01	53322	99.84	826	4	.01	53366	99.92	882	1	.00	53400	99.98
809	4	.01	53326	99.84	827	1	.00	53367	99.92	887	3	.01	53403	99.99
810	5	.01	53331	99.85	829	1	.00	53368	99.92	889	2	.00	53405	99.99
811	2	.00	53333	99.86	830	1	.00	53369	99.92	990	5	.01	53410	100.00
812	1	.00	53334	99.86	832	4	.01	53373	99.93					
813	5	.01	53339	99.87	833	1	.00	53374	99.93					
814	1	.00	53340	99.87	835	3	.01	53377	99.94					
815	1	.00	53341	99.87	840	2	.00	53379	99.94					
816	7	.01	53348	99.88	841	4	.01	53383	99.95					
817	3	.01	53351	99.89	847	1	.00	53384	99.95					

Figure 17. Reading 8 Scale Score Distributions for the Total Population, Female, and Male Students



Appendix 16. Mathematics 7 Scale Score Distribution

(SS = Scale Score, Freq. = Frequency, Cum. = Cumulative)

SS	Freq.	%	Cum. Freq.	Cum. %	SS	Freq.	%	Cum. Freq.	Cum. %	SS	Freq.	%	Cum. Freq.	Cum. %
280	280	.49	280	.51	323	12	.02	564	1.04	366	22	.04	1249	2.30
281	3	.01	283	.52	324	11	.02	575	1.06	367	26	.05	1275	2.34
282	7	.01	290	.53	325	6	.01	581	1.07	368	29	.05	1304	2.40
283	5	.01	295	.54	326	12	.02	593	1.09	369	18	.03	1322	2.43
284	7	.01	302	.56	327	13	.02	606	1.11	370	30	.05	1352	2.49
285	7	.01	309	.57	328	11	.02	617	1.13	371	32	.06	1384	2.54
286	3	.01	312	.57	329	19	.03	636	1.17	372	29	.05	1413	2.60
287	4	.01	316	.58	330	15	.03	651	1.20	373	28	.05	1441	2.65
288	7	.01	323	.59	331	10	.02	661	1.22	374	21	.04	1462	2.69
289	2	.00	325	.60	332	9	.02	670	1.23	375	28	.05	1490	2.74
290	6	.01	331	.61	333	12	.02	682	1.25	376	34	.06	1524	2.80
291	7	.01	338	.62	334	9	.02	691	1.27	377	27	.05	1551	2.85
292	6	.01	344	.63	335	11	.02	702	1.29	378	34	.06	1585	2.91
293	5	.01	349	.64	336	12	.02	714	1.31	379	30	.05	1615	2.97
294	4	.01	353	.65	337	16	.03	730	1.34	380	25	.04	1640	3.01
295	4	.01	357	.66	338	13	.02	743	1.37	381	25	.04	1665	3.06
296	3	.01	360	.66	339	8	.01	751	1.38	382	34	.06	1699	3.12
297	5	.01	365	.67	340	18	.03	769	1.41	383	33	.06	1732	3.18
298	8	.01	373	.69	341	11	.02	780	1.43	384	37	.07	1769	3.25
299	5	.01	378	.69	342	12	.02	792	1.46	385	31	.05	1800	3.31
300	8	.01	386	.71	343	20	.04	812	1.49	386	29	.05	1829	3.36
301	6	.01	392	.72	344	18	.03	830	1.53	387	40	.07	1869	3.44
302	4	.01	396	.73	345	12	.02	842	1.55	388	37	.07	1906	3.50
303	4	.01	400	.74	346	21	.04	863	1.59	389	34	.06	1940	3.57
304	4	.01	404	.74	347	13	.02	876	1.61	390	35	.06	1975	3.63
305	4	.01	408	.75	348	16	.03	892	1.64	391	36	.06	2011	3.70
306	4	.01	412	.76	349	16	.03	908	1.67	392	37	.07	2048	3.76
307	7	.01	419	.77	350	5	.01	913	1.68	393	50	.09	2098	3.86
308	9	.02	428	.79	351	12	.02	925	1.70	394	27	.05	2125	3.91
309	6	.01	434	.80	352	11	.02	936	1.72	395	40	.07	2165	3.98
310	7	.01	441	.81	353	22	.04	958	1.76	396	40	.07	2205	4.05
311	8	.01	449	.83	354	15	.03	973	1.79	397	28	.05	2233	4.10
312	8	.01	457	.84	355	20	.04	993	1.83	398	49	.09	2282	4.20
313	5	.01	462	.85	356	29	.05	1022	1.88	399	50	.09	2332	4.29
314	11	.02	473	.87	357	13	.02	1035	1.90	400	40	.07	2372	4.36
315	5	.01	478	.88	358	16	.03	1051	1.93	401	54	.10	2426	4.46
316	8	.01	486	.89	359	20	.04	1071	1.97	402	51	.09	2477	4.55
317	7	.01	493	.91	360	24	.04	1095	2.01	403	50	.09	2527	4.65
318	16	.03	509	.94	361	30	.05	1125	2.07	404	54	.10	2581	4.74
319	8	.01	517	.95	362	26	.05	1151	2.12	405	39	.07	2620	4.82
320	11	.02	528	.97	363	24	.04	1175	2.16	406	47	.08	2667	4.90
321	7	.01	535	.98	364	24	.04	1199	2.20	407	65	.11	2732	5.02
322	17	.03	552	1.01	365	28	.05	1227	2.26	408	50	.09	2782	5.11

Appendix 16. Mathematics 7 Scale Score Distribution (Continued)

SS	Freq.	%	Cum. Freq.	Cum. %	SS	Freq.	%	Cum. Freq.	Cum. %	SS	Freq.	%	Cum. Freq.	Cum. %
409	54	.10	2836	5.21	455	122	.21	6965	12.80	501	225	.40	15447	28.40
410	71	.13	2907	5.34	456	136	.24	7101	13.05	502	231	.41	15678	28.82
411	68	.12	2975	5.47	457	141	.25	7242	13.31	503	262	.46	15940	29.30
412	67	.12	3042	5.59	458	129	.23	7371	13.55	504	256	.45	16196	29.77
413	59	.10	3101	5.70	459	131	.23	7502	13.79	505	239	.42	16435	30.21
414	70	.12	3171	5.83	460	142	.25	7644	14.05	506	234	.41	16669	30.64
415	59	.10	3230	5.94	461	142	.25	7786	14.31	507	257	.45	16926	31.12
416	67	.12	3297	6.06	462	100	.18	7886	14.50	508	233	.41	17159	31.54
417	73	.13	3370	6.20	463	144	.25	8030	14.76	509	257	.45	17416	32.02
418	82	.14	3452	6.35	464	157	.28	8187	15.05	510	248	.44	17664	32.47
419	70	.12	3522	6.47	465	162	.29	8349	15.35	511	236	.42	17900	32.91
420	72	.13	3594	6.61	466	145	.26	8494	15.61	512	287	.51	18187	33.43
421	56	.10	3650	6.71	467	149	.26	8643	15.89	513	303	.53	18490	33.99
422	75	.13	3725	6.85	468	153	.27	8796	16.17	514	276	.49	18766	34.50
423	74	.13	3799	6.98	469	164	.29	8960	16.47	515	277	.49	19043	35.01
424	70	.12	3869	7.11	470	173	.30	9133	16.79	516	270	.48	19313	35.50
425	76	.13	3945	7.25	471	141	.25	9274	17.05	517	271	.48	19584	36.00
426	67	.12	4012	7.38	472	177	.31	9451	17.37	518	257	.45	19841	36.47
427	69	.12	4081	7.50	473	188	.33	9639	17.72	519	282	.50	20123	36.99
428	65	.11	4146	7.62	474	173	.30	9812	18.04	520	241	.42	20364	37.44
429	97	.17	4243	7.80	475	163	.29	9975	18.34	521	270	.48	20634	37.93
430	94	.17	4337	7.97	476	167	.29	10142	18.64	522	304	.54	20938	38.49
431	96	.17	4433	8.15	477	177	.31	10319	18.97	523	285	.50	21223	39.01
432	106	.19	4539	8.34	478	183	.32	10502	19.31	524	291	.51	21514	39.55
433	90	.16	4629	8.51	479	179	.32	10681	19.63	525	287	.51	21801	40.08
434	77	.14	4706	8.65	480	191	.34	10872	19.99	526	309	.54	22110	40.64
435	83	.15	4789	8.80	481	200	.35	11072	20.35	527	296	.52	22406	41.19
436	72	.13	4861	8.94	482	181	.32	11253	20.69	528	291	.51	22697	41.72
437	98	.17	4959	9.12	483	196	.35	11449	21.05	529	286	.50	22983	42.25
438	92	.16	5051	9.29	484	220	.39	11669	21.45	530	313	.55	23296	42.83
439	80	.14	5131	9.43	485	211	.37	11880	21.84	531	343	.60	23639	43.46
440	99	.17	5230	9.61	486	197	.35	12077	22.20	532	305	.54	23944	44.02
441	104	.18	5334	9.81	487	230	.40	12307	22.62	533	296	.52	24240	44.56
442	108	.19	5442	10.00	488	213	.38	12520	23.02	534	350	.62	24590	45.20
443	111	.20	5553	10.21	489	192	.34	12712	23.37	535	331	.58	24921	45.81
444	92	.16	5645	10.38	490	222	.39	12934	23.78	536	297	.52	25218	46.36
445	94	.17	5739	10.55	491	232	.41	13166	24.20	537	324	.57	25542	46.95
446	122	.21	5861	10.77	492	234	.41	13400	24.63	538	330	.58	25872	47.56
447	120	.21	5981	10.99	493	221	.39	13621	25.04	539	323	.57	26195	48.15
448	130	.23	6111	11.23	494	227	.40	13848	25.46	540	296	.52	26491	48.70
449	112	.20	6223	11.44	495	226	.40	14074	25.87	541	290	.51	26781	49.23
450	111	.20	6334	11.64	496	232	.41	14306	26.30	542	331	.58	27112	49.84
451	117	.21	6451	11.86	497	228	.40	14534	26.72	543	303	.53	27415	50.40
452	120	.21	6571	12.08	498	216	.38	14750	27.11	544	321	.57	27736	50.99
453	133	.23	6704	12.32	499	247	.43	14997	27.57	545	338	.60	28074	51.61
454	139	.24	6843	12.58	500	225	.40	15222	27.98	546	342	.60	28416	52.24

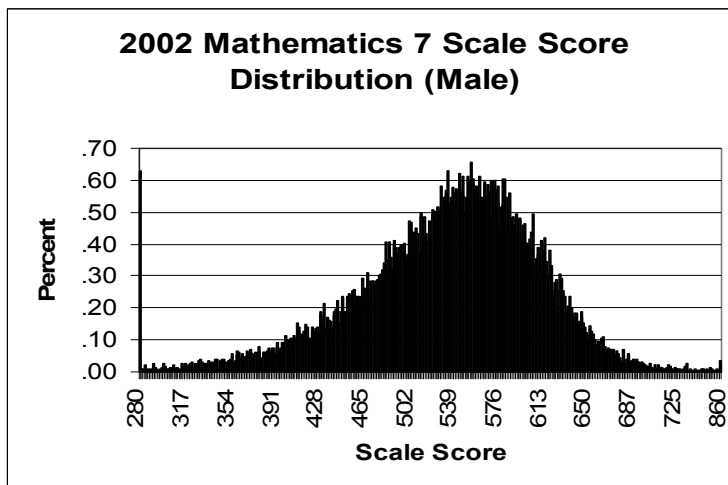
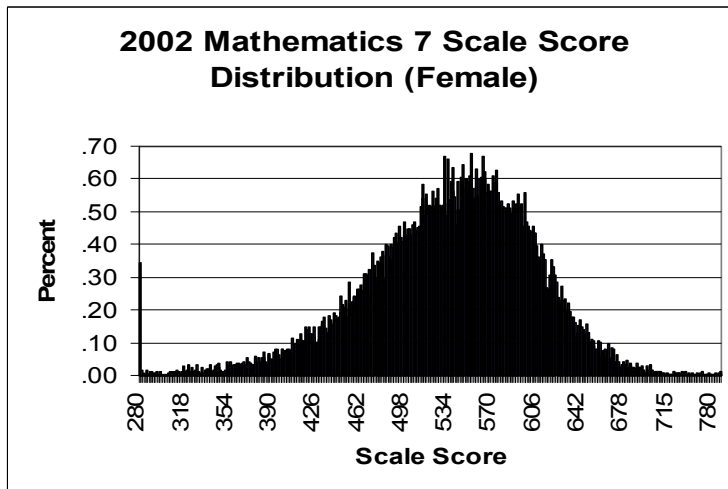
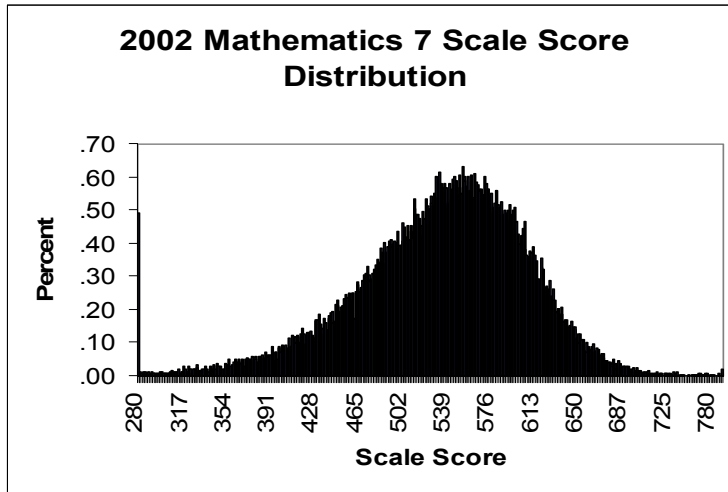
Appendix 16. Mathematics 7 Scale Score Distribution (Continued)

SS	Freq.	%	Cum. Freq.	Cum. %	SS	Freq.	%	Cum. Freq.	Cum. %	SS	Freq.	%	Cum. Freq.	Cum. %
547	327	.58	28743	52.84	593	266	.47	43167	79.35	639	96	.17	51654	94.96
548	336	.59	29079	53.46	594	277	.49	43444	79.86	640	86	.15	51740	95.11
549	312	.55	29391	54.03	595	284	.50	43728	80.39	641	96	.17	51836	95.29
550	322	.57	29713	54.62	596	253	.45	43981	80.85	642	85	.15	51921	95.45
551	344	.61	30057	55.25	597	288	.51	44269	81.38	643	84	.15	52005	95.60
552	314	.55	30371	55.83	598	209	.37	44478	81.76	644	86	.15	52091	95.76
553	360	.63	30731	56.49	599	266	.47	44744	82.25	645	94	.17	52185	95.93
554	341	.60	31072	57.12	600	243	.43	44987	82.70	646	85	.15	52270	96.09
555	334	.59	31406	57.73	601	227	.40	45214	83.12	647	79	.14	52349	96.23
556	326	.57	31732	58.33	602	237	.42	45451	83.55	648	85	.15	52434	96.39
557	317	.56	32049	58.92	603	242	.43	45693	84.00	649	66	.12	52500	96.51
558	343	.60	32392	59.55	604	254	.45	45947	84.46	650	72	.13	52572	96.64
559	318	.56	32710	60.13	605	217	.38	46164	84.86	651	58	.10	52630	96.75
560	333	.59	33043	60.74	606	264	.46	46428	85.35	652	73	.13	52703	96.88
561	345	.61	33388	61.38	607	208	.37	46636	85.73	653	63	.11	52766	97.00
562	306	.54	33694	61.94	608	204	.36	46840	86.11	654	62	.11	52828	97.11
563	346	.61	34040	62.58	609	214	.38	47054	86.50	655	56	.10	52884	97.22
564	328	.58	34368	63.18	610	197	.35	47251	86.86	656	44	.08	52928	97.30
565	333	.59	34701	63.79	611	213	.38	47464	87.25	657	59	.10	52987	97.41
566	327	.58	35028	64.39	612	204	.36	47668	87.63	658	42	.07	53029	97.48
567	321	.57	35349	64.98	613	222	.39	47890	88.04	659	50	.09	53079	97.58
568	319	.56	35668	65.57	614	208	.37	48098	88.42	660	45	.08	53124	97.66
569	320	.56	35988	66.16	615	197	.35	48295	88.78	661	46	.08	53170	97.74
570	312	.55	36300	66.73	616	167	.29	48462	89.09	662	51	.09	53221	97.84
571	343	.60	36643	67.36	617	167	.29	48629	89.39	663	55	.10	53276	97.94
572	306	.54	36949	67.92	618	165	.29	48794	89.70	664	44	.08	53320	98.02
573	331	.58	37280	68.53	619	186	.33	48980	90.04	665	41	.07	53361	98.09
574	321	.57	37601	69.12	620	203	.36	49183	90.41	666	47	.08	53408	98.18
575	320	.56	37921	69.71	621	183	.32	49366	90.75	667	33	.06	53441	98.24
576	308	.54	38229	70.28	622	152	.27	49518	91.03	668	45	.08	53486	98.32
577	313	.55	38542	70.85	623	155	.27	49673	91.31	669	36	.06	53522	98.39
578	280	.49	38822	71.37	624	145	.26	49818	91.58	670	38	.07	53560	98.46
579	289	.51	39111	71.90	625	150	.26	49968	91.86	671	32	.06	53592	98.52
580	296	.52	39407	72.44	626	114	.20	50082	92.07	672	38	.07	53630	98.59
581	318	.56	39725	73.03	627	165	.29	50247	92.37	673	26	.05	53656	98.64
582	317	.56	40042	73.61	628	138	.24	50385	92.62	674	22	.04	53678	98.68
583	295	.52	40337	74.15	629	149	.26	50534	92.90	675	26	.05	53704	98.72
584	288	.51	40625	74.68	630	130	.23	50664	93.14	676	24	.04	53728	98.77
585	281	.49	40906	75.20	631	129	.23	50793	93.37	677	23	.04	53751	98.81
586	300	.53	41206	75.75	632	111	.20	50904	93.58	678	21	.04	53772	98.85
587	276	.49	41482	76.26	633	115	.20	51019	93.79	679	17	.03	53789	98.88
588	278	.49	41760	76.77	634	115	.20	51134	94.00	680	28	.05	53817	98.93
589	284	.50	42044	77.29	635	107	.19	51241	94.20	681	21	.04	53838	98.97
590	279	.49	42323	77.80	636	117	.21	51358	94.41	682	13	.02	53851	98.99
591	284	.50	42607	78.32	637	105	.18	51463	94.60	683	22	.04	53873	99.03
592	294	.52	42901	78.87	638	95	.17	51558	94.78	684	26	.05	53899	99.08

Appendix 16. Mathematics 7 Scale Score Distribution (Continued)

SS	Freq.	%	Cum. Freq.	Cum. %	SS	Freq.	%	Cum. Freq.	Cum. %	SS	Freq.	%	Cum. Freq.	Cum. %
685	22	.04	53921	99.12	715	4	.01	54222	99.68	751	1	.00	54323	99.86
686	16	.03	53937	99.15	716	5	.01	54227	99.69	752	2	.00	54325	99.87
687	14	.02	53951	99.18	717	7	.01	54234	99.70	753	2	.00	54327	99.87
688	18	.03	53969	99.21	718	2	.00	54236	99.70	757	3	.01	54330	99.87
689	17	.03	53986	99.24	719	6	.01	54242	99.71	761	3	.01	54333	99.88
690	16	.03	54002	99.27	720	6	.01	54248	99.72	763	2	.00	54335	99.88
691	12	.02	54014	99.29	721	5	.01	54253	99.73	765	1	.00	54336	99.89
692	18	.03	54032	99.33	722	1	.00	54254	99.74	766	5	.01	54341	99.90
693	17	.03	54049	99.36	723	5	.01	54259	99.74	767	4	.01	54345	99.90
694	12	.02	54061	99.38	725	4	.01	54263	99.75	768	3	.01	54348	99.91
695	12	.02	54073	99.40	726	5	.01	54268	99.76	770	2	.00	54350	99.91
696	9	.02	54082	99.42	727	5	.01	54273	99.77	772	2	.00	54352	99.92
697	15	.03	54097	99.45	728	2	.00	54275	99.77	773	5	.01	54357	99.92
698	8	.01	54105	99.46	729	5	.01	54280	99.78	777	1	.00	54358	99.93
699	10	.02	54115	99.48	730	2	.00	54282	99.79	778	5	.01	54363	99.94
700	14	.02	54129	99.51	731	3	.01	54285	99.79	779	1	.00	54364	99.94
701	9	.02	54138	99.52	733	7	.01	54292	99.81	780	1	.00	54365	99.94
702	9	.02	54147	99.54	734	6	.01	54298	99.82	782	2	.00	54367	99.94
703	8	.01	54155	99.55	735	2	.00	54300	99.82	784	2	.00	54369	99.95
704	4	.01	54159	99.56	736	7	.01	54307	99.83	785	1	.00	54370	99.95
705	5	.01	54164	99.57	737	1	.00	54308	99.83	791	2	.00	54372	99.95
706	8	.01	54172	99.58	738	2	.00	54310	99.84	799	1	.00	54373	99.95
707	7	.01	54179	99.60	739	1	.00	54311	99.84	808	1	.00	54374	99.96
708	7	.01	54186	99.61	741	2	.00	54313	99.84	810	1	.00	54375	99.96
709	10	.02	54196	99.63	742	3	.01	54316	99.85	820	4	.01	54379	99.97
710	5	.01	54201	99.64	744	1	.00	54317	99.85	834	1	.00	54380	99.97
711	5	.01	54206	99.65	746	1	.00	54318	99.85	851	5	.01	54385	99.98
712	6	.01	54212	99.66	747	1	.00	54319	99.85	860	13	.02	54398	100.00
713	2	.00	54214	99.66	749	2	.00	54321	99.86					
714	4	.01	54218	99.67	750	1	.00	54322	99.86					

Figure 16 Mathematics 7 Scale Score Distributions for the Total Population, Female, and Male Students



Appendix 15. Writing 7 Scale Score Distribution

(SS = Scale Score, Freq. = Frequency, Cum. = Cumulative)

SS	Freq.	%	Cum. Freq.	Cum. %	SS	Freq.	%	Cum. Freq.	Cum. %	SS	Freq.	%	Cum. Freq.	Cum. %
240	13	.02	13	.02	315	3	.01	82	.15	361	10	.02	246	.45
241	1	.00	14	.03	317	1	.00	83	.15	362	5	.01	251	.46
242	1	.00	15	.03	318	2	.00	85	.16	363	5	.01	256	.47
245	1	.00	16	.03	319	1	.00	86	.16	364	6	.01	262	.48
246	1	.00	17	.03	320	1	.00	87	.16	365	7	.01	269	.50
248	2	.00	19	.03	321	3	.01	90	.17	366	6	.01	275	.51
249	2	.00	21	.04	323	1	.00	91	.17	367	8	.01	283	.52
250	1	.00	22	.04	324	3	.01	94	.17	368	12	.02	295	.54
251	1	.00	23	.04	325	1	.00	95	.17	369	10	.02	305	.56
252	1	.00	24	.04	326	2	.00	97	.18	370	7	.01	312	.57
254	1	.00	25	.05	327	1	.00	98	.18	371	7	.01	319	.59
255	1	.00	26	.05	328	2	.00	100	.18	372	10	.02	329	.61
257	1	.00	27	.05	329	2	.00	102	.19	373	14	.02	343	.63
258	1	.00	28	.05	330	2	.00	104	.19	374	11	.02	354	.65
260	1	.00	29	.05	332	3	.01	107	.20	375	8	.01	362	.67
266	1	.00	30	.06	333	3	.01	110	.20	376	14	.02	376	.69
269	1	.00	31	.06	334	3	.01	113	.21	377	15	.03	391	.72
271	1	.00	32	.06	335	1	.00	114	.21	378	11	.02	402	.74
272	1	.00	33	.06	336	2	.00	116	.21	379	17	.03	419	.77
275	2	.00	35	.06	337	2	.00	118	.22	380	13	.02	432	.80
276	1	.00	36	.07	338	5	.01	123	.23	381	8	.01	440	.81
278	1	.00	37	.07	339	4	.01	127	.23	382	16	.03	456	.84
280	3	.01	40	.07	340	1	.00	128	.24	383	14	.02	470	.87
287	2	.00	42	.08	341	2	.00	130	.24	384	19	.03	489	.90
288	2	.00	44	.08	342	5	.01	135	.25	385	15	.03	504	.93
290	2	.00	46	.08	343	7	.01	142	.26	386	15	.03	519	.96
291	1	.00	47	.09	344	8	.01	150	.28	387	19	.03	538	.99
292	2	.00	49	.09	345	7	.01	157	.29	388	19	.03	557	1.03
293	1	.00	50	.09	346	5	.01	162	.30	389	17	.03	574	1.06
296	1	.00	51	.09	347	4	.01	166	.31	390	20	.04	594	1.09
298	5	.01	56	.10	348	3	.01	169	.31	391	26	.05	620	1.14
299	5	.01	61	.11	349	5	.01	174	.32	392	30	.05	650	1.20
300	1	.00	62	.11	350	6	.01	180	.33	393	25	.04	675	1.24
301	2	.00	64	.12	351	7	.01	187	.34	394	26	.05	701	1.29
302	1	.00	65	.12	352	5	.01	192	.35	395	24	.04	725	1.33
304	2	.00	67	.12	353	7	.01	199	.37	396	35	.06	760	1.40
306	3	.01	70	.13	354	5	.01	204	.38	397	27	.05	787	1.45
307	1	.00	71	.13	355	5	.01	209	.38	398	29	.05	816	1.50
309	1	.00	72	.13	356	4	.01	213	.39	399	35	.06	851	1.57
310	1	.00	73	.13	357	8	.01	221	.41	400	32	.06	883	1.63
311	2	.00	75	.14	358	3	.01	224	.41	401	32	.06	915	1.68
312	2	.00	77	.14	359	2	.00	226	.42	402	34	.06	949	1.75
313	2	.00	79	.15	360	10	.02	236	.43	403	32	.06	981	1.81

Appendix 15. Writing 7 Scale Score Distribution (Continued)

SS	Freq.	%	Cum. Freq	Cum. %	SS	Freq.	%	Cum. Freq	Cum. %	SS	Freq.	%	Cum. Freq	Cum. %
404	35	.06	1016	1.87	450	108	.19	4286	7.89	496	230	.40	12766	23.50
405	45	.08	1061	1.95	451	126	.22	4412	8.12	497	264	.46	13030	23.98
406	31	.05	1092	2.01	452	115	.20	4527	8.33	498	279	.49	13309	24.50
407	39	.07	1131	2.08	453	142	.25	4669	8.59	499	242	.43	13551	24.94
408	32	.06	1163	2.14	454	139	.24	4808	8.85	500	249	.44	13800	25.40
409	40	.07	1203	2.21	455	141	.25	4949	9.11	501	297	.52	14097	25.95
410	50	.09	1253	2.31	456	136	.24	5085	9.36	502	273	.48	14370	26.45
411	33	.06	1286	2.37	457	128	.23	5213	9.59	503	269	.47	14639	26.94
412	41	.07	1327	2.44	458	137	.24	5350	9.85	504	279	.49	14918	27.46
413	38	.07	1365	2.51	459	157	.28	5507	10.14	505	287	.51	15205	27.99
414	43	.08	1408	2.59	460	137	.24	5644	10.39	506	305	.54	15510	28.55
415	44	.08	1452	2.67	461	190	.33	5834	10.74	507	292	.51	15802	29.08
416	63	.11	1515	2.79	462	160	.28	5994	11.03	508	280	.49	16082	29.60
417	52	.09	1567	2.88	463	153	.27	6147	11.31	509	312	.55	16394	30.17
418	59	.10	1626	2.99	464	160	.28	6307	11.61	510	290	.51	16684	30.71
419	69	.12	1695	3.12	465	160	.28	6467	11.90	511	303	.53	16987	31.27
420	51	.09	1746	3.21	466	151	.27	6618	12.18	512	276	.49	17263	31.77
421	55	.10	1801	3.31	467	169	.30	6787	12.49	513	295	.52	17558	32.32
422	51	.09	1852	3.41	468	158	.28	6945	12.78	514	306	.54	17864	32.88
423	60	.11	1912	3.52	469	162	.29	7107	13.08	515	307	.54	18171	33.44
424	66	.12	1978	3.64	470	167	.29	7274	13.39	516	334	.59	18505	34.06
425	65	.11	2043	3.76	471	167	.29	7441	13.70	517	297	.52	18802	34.61
426	55	.10	2098	3.86	472	165	.29	7606	14.00	518	326	.57	19128	35.21
427	78	.14	2176	4.01	473	174	.31	7780	14.32	519	299	.53	19427	35.76
428	65	.11	2241	4.12	474	194	.34	7974	14.68	520	336	.59	19763	36.38
429	75	.13	2316	4.26	475	200	.35	8174	15.04	521	336	.59	20099	36.99
430	74	.13	2390	4.40	476	188	.33	8362	15.39	522	350	.62	20449	37.64
431	77	.14	2467	4.54	477	184	.32	8546	15.73	523	323	.57	20772	38.23
432	83	.15	2550	4.69	478	192	.34	8738	16.08	524	324	.57	21096	38.83
433	98	.17	2648	4.87	479	213	.38	8951	16.47	525	353	.62	21449	39.48
434	89	.16	2737	5.04	480	190	.33	9141	16.82	526	337	.59	21786	40.10
435	74	.13	2811	5.17	481	205	.36	9346	17.20	527	362	.64	22148	40.76
436	104	.18	2915	5.37	482	222	.39	9568	17.61	528	351	.62	22499	41.41
437	92	.16	3007	5.53	483	203	.36	9771	17.98	529	355	.63	22854	42.06
438	76	.13	3083	5.67	484	204	.36	9975	18.36	530	371	.65	23225	42.75
439	86	.15	3169	5.83	485	236	.42	10211	18.79	531	376	.66	23601	43.44
440	95	.17	3264	6.01	486	237	.42	10448	19.23	532	334	.59	23935	44.05
441	86	.15	3350	6.17	487	228	.40	10676	19.65	533	338	.60	24273	44.68
442	93	.16	3443	6.34	488	200	.35	10876	20.02	534	348	.61	24621	45.32
443	99	.17	3542	6.52	489	225	.40	11101	20.43	535	329	.58	24950	45.92
444	96	.17	3638	6.70	490	220	.39	11321	20.84	536	318	.56	25268	46.51
445	101	.18	3739	6.88	491	250	.44	11571	21.30	537	341	.60	25609	47.14
446	111	.20	3850	7.09	492	222	.39	11793	21.71	538	337	.59	25946	47.76
447	109	.19	3959	7.29	493	247	.43	12040	22.16	539	355	.63	26301	48.41
448	108	.19	4067	7.49	494	234	.41	12274	22.59	540	350	.62	26651	49.05
449	111	.20	4178	7.69	495	262	.46	12536	23.07	541	362	.64	27013	49.72

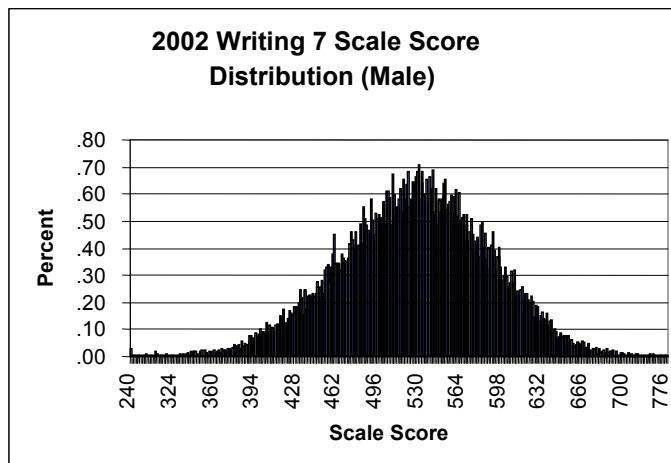
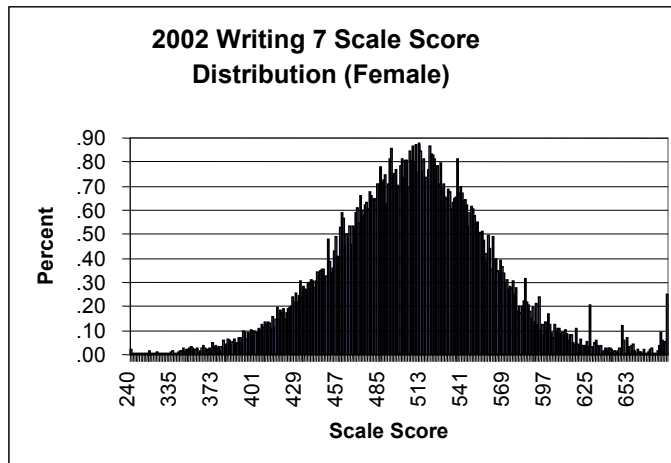
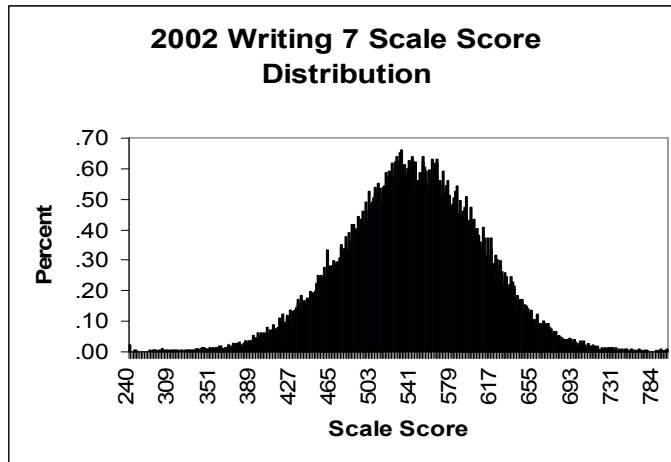
Appendix 15. Writing 7 Scale Score Distribution (Continued)

SS	Freq.	%	Cum. Freq	Cum. %	SS	Freq.	%	Cum. Freq	Cum. %	SS	Freq.	%	Cum. Freq	Cum. %
542	359	.63	27372	50.38	588	254	.45	41690	76.73	634	138	.24	50593	93.12
543	346	.61	27718	51.02	589	255	.45	41945	77.20	635	116	.20	50709	93.33
544	301	.53	28019	51.57	590	261	.46	42206	77.68	636	128	.23	50837	93.57
545	353	.62	28372	52.22	591	268	.47	42474	78.18	637	123	.22	50960	93.80
546	317	.56	28689	52.80	592	289	.51	42763	78.71	638	118	.21	51078	94.01
547	319	.56	29008	53.39	593	251	.44	43014	79.17	639	99	.17	51177	94.19
548	334	.59	29342	54.01	594	244	.43	43258	79.62	640	95	.17	51272	94.37
549	310	.55	29652	54.58	595	244	.43	43502	80.07	641	105	.18	51377	94.56
550	332	.58	29984	55.19	596	245	.43	43747	80.52	642	77	.14	51454	94.70
551	352	.62	30336	55.84	597	268	.47	44015	81.01	643	96	.17	51550	94.88
552	363	.64	30699	56.50	598	242	.43	44257	81.46	644	97	.17	51647	95.06
553	344	.61	31043	57.14	599	245	.43	44502	81.91	645	96	.17	51743	95.24
554	308	.54	31351	57.70	600	211	.37	44713	82.30	646	73	.13	51816	95.37
555	336	.59	31687	58.32	601	226	.40	44939	82.71	647	87	.15	51903	95.53
556	314	.55	32001	58.90	602	214	.38	45153	83.11	648	80	.14	51983	95.68
557	316	.56	32317	59.48	603	229	.40	45382	83.53	649	84	.15	52067	95.83
558	337	.59	32654	60.10	604	216	.38	45598	83.93	650	79	.14	52146	95.98
559	299	.53	32953	60.65	605	205	.36	45803	84.30	651	72	.13	52218	96.11
560	326	.57	33279	61.25	606	185	.33	45988	84.64	652	72	.13	52290	96.24
561	357	.63	33636	61.91	607	196	.35	46184	85.00	653	77	.14	52367	96.39
562	335	.59	33971	62.53	608	231	.41	46415	85.43	654	75	.13	52442	96.52
563	350	.62	34321	63.17	609	199	.35	46614	85.80	655	59	.10	52501	96.63
564	359	.63	34680	63.83	610	210	.37	46824	86.18	656	57	.10	52558	96.74
565	350	.62	35030	64.48	611	179	.32	47003	86.51	657	60	.11	52618	96.85
566	313	.55	35343	65.05	612	174	.31	47177	86.83	658	42	.07	52660	96.92
567	318	.56	35661	65.64	613	211	.37	47388	87.22	659	69	.12	52729	97.05
568	314	.55	35975	66.21	614	178	.31	47566	87.55	660	43	.08	52772	97.13
569	289	.51	36264	66.75	615	192	.34	47758	87.90	661	49	.09	52821	97.22
570	292	.51	36556	67.28	616	210	.37	47968	88.29	662	51	.09	52872	97.31
571	335	.59	36891	67.90	617	159	.28	48127	88.58	663	47	.08	52919	97.40
572	294	.52	37185	68.44	618	153	.27	48280	88.86	664	46	.08	52965	97.49
573	308	.54	37493	69.01	619	164	.29	48444	89.16	665	56	.10	53021	97.59
574	308	.54	37801	69.58	620	178	.31	48622	89.49	666	42	.07	53063	97.67
575	319	.56	38120	70.16	621	145	.26	48767	89.76	667	50	.09	53113	97.76
576	288	.51	38408	70.69	622	171	.30	48938	90.07	668	52	.09	53165	97.85
577	290	.51	38698	71.23	623	159	.28	49097	90.37	669	53	.09	53218	97.95
578	272	.48	38970	71.73	624	168	.30	49265	90.68	670	39	.07	53257	98.02
579	274	.48	39244	72.23	625	142	.25	49407	90.94	671	45	.08	53302	98.11
580	275	.48	39519	72.74	626	148	.26	49555	91.21	672	42	.07	53344	98.18
581	285	.50	39804	73.26	627	125	.22	49680	91.44	673	32	.06	53376	98.24
582	298	.52	40102	73.81	628	147	.26	49827	91.71	674	32	.06	53408	98.30
583	246	.43	40348	74.26	629	139	.24	49966	91.97	675	38	.07	53446	98.37
584	308	.54	40656	74.83	630	139	.24	50105	92.22	676	30	.05	53476	98.43
585	255	.45	40911	75.30	631	117	.21	50222	92.44	677	37	.07	53513	98.49
586	282	.50	41193	75.82	632	108	.19	50330	92.64	678	28	.05	53541	98.55
587	243	.43	41436	76.27	633	125	.22	50455	92.87	679	19	.03	53560	98.58

Appendix 15. Writing 7 Scale Score Distribution (Continued)

SS	Freq.	%	Cum. Freq	Cum. %	SS	Freq.	%	Cum. Freq	Cum. %	SS	Freq.	%	Cum. Freq	Cum. %
680	30	.05	53590	98.64	715	9	.02	54136	99.64	753	2	.00	54273	99.89
681	28	.05	53618	98.69	716	9	.02	54145	99.66	754	2	.00	54275	99.90
682	25	.04	53643	98.73	717	3	.01	54148	99.66	755	2	.00	54277	99.90
683	25	.04	53668	98.78	718	2	.00	54150	99.67	756	1	.00	54278	99.90
684	21	.04	53689	98.82	719	4	.01	54154	99.67	758	1	.00	54279	99.90
685	20	.04	53709	98.86	720	3	.01	54157	99.68	759	1	.00	54280	99.91
686	23	.04	53732	98.90	721	7	.01	54164	99.69	760	4	.01	54284	99.91
687	23	.04	53755	98.94	722	4	.01	54168	99.70	762	2	.00	54286	99.92
688	22	.04	53777	98.98	723	8	.01	54176	99.71	763	1	.00	54287	99.92
689	18	.03	53795	99.01	724	5	.01	54181	99.72	764	2	.00	54289	99.92
690	24	.04	53819	99.06	725	3	.01	54184	99.73	766	1	.00	54290	99.92
691	16	.03	53835	99.09	726	7	.01	54191	99.74	768	2	.00	54292	99.93
692	23	.04	53858	99.13	727	8	.01	54199	99.76	770	3	.01	54295	99.93
693	14	.02	53872	99.16	728	2	.00	54201	99.76	772	2	.00	54297	99.94
694	23	.04	53895	99.20	729	7	.01	54208	99.77	774	1	.00	54298	99.94
695	18	.03	53913	99.23	730	8	.01	54216	99.79	775	1	.00	54299	99.94
696	8	.01	53921	99.25	731	2	.00	54218	99.79	776	1	.00	54300	99.94
697	11	.02	53932	99.27	732	3	.01	54221	99.80	777	1	.00	54301	99.94
698	13	.02	53945	99.29	733	3	.01	54224	99.80	782	1	.00	54302	99.95
699	15	.03	53960	99.32	734	8	.01	54232	99.82	784	1	.00	54303	99.95
700	20	.04	53980	99.35	735	1	.00	54233	99.82	786	1	.00	54304	99.95
701	16	.03	53996	99.38	736	4	.01	54237	99.83	794	1	.00	54305	99.95
702	13	.02	54009	99.41	737	3	.01	54240	99.83	795	2	.00	54307	99.96
703	19	.03	54028	99.44	738	2	.00	54242	99.84	803	1	.00	54308	99.96
704	7	.01	54035	99.46	739	5	.01	54247	99.85	816	2	.00	54310	99.96
705	12	.02	54047	99.48	740	1	.00	54248	99.85	819	3	.01	54313	99.97
706	5	.01	54052	99.49	741	1	.00	54249	99.85	829	5	.01	54318	99.98
707	14	.02	54066	99.51	742	5	.01	54254	99.86	831	2	.00	54320	99.98
708	4	.01	54070	99.52	743	2	.00	54256	99.86	837	1	.00	54321	99.98
709	9	.02	54079	99.54	744	4	.01	54260	99.87	849	1	.00	54322	99.98
710	9	.02	54088	99.55	746	1	.00	54261	99.87	873	2	.00	54324	99.99
711	12	.02	54100	99.57	747	1	.00	54262	99.87	889	4	.01	54328	99.99
712	8	.01	54108	99.59	749	2	.00	54264	99.88	890	3	.01	54331	100.00
713	11	.02	54119	99.61	751	4	.01	54268	99.88					
714	8	.01	54127	99.62	752	3	.01	54271	99.89					

Figure 15. Writing 7 Scale Score Distributions for the Total Population, Female, and Male Students



Appendix 14. Reading 7 Scale Score Distribution

(SS = Scale Score, Freq. = Frequency, Cum. = Cumulative)

SS	Freq.	%	Cum. Freq.	Cum. %	SS	Freq.	%	Cum. Freq.	Cum. %	SS	Freq.	%	Cum. Freq.	Cum. %
300	173	.30	173	.32	399	3	.01	266	.49	442	7	.01	492	.91
307	1	.00	174	.32	400	3	.01	269	.50	443	8	.01	500	.92
324	1	.00	175	.32	401	5	.01	274	.50	444	8	.01	508	.94
326	1	.00	176	.32	402	2	.00	276	.51	445	10	.02	518	.95
337	1	.00	177	.33	403	3	.01	279	.51	446	10	.02	528	.97
342	1	.00	178	.33	404	3	.01	282	.52	447	13	.02	541	1.00
347	1	.00	179	.33	405	3	.01	285	.52	448	23	.04	564	1.04
350	1	.00	180	.33	406	2	.00	287	.53	449	14	.02	578	1.06
351	2	.00	182	.34	407	3	.01	290	.53	450	11	.02	589	1.08
352	2	.00	184	.34	408	6	.01	296	.54	451	12	.02	601	1.11
355	1	.00	185	.34	409	3	.01	299	.55	452	16	.03	617	1.14
356	1	.00	186	.34	410	3	.01	302	.56	453	11	.02	628	1.16
357	1	.00	187	.34	411	4	.01	306	.56	454	10	.02	638	1.17
358	2	.00	189	.35	412	3	.01	309	.57	455	16	.03	654	1.20
360	1	.00	190	.35	413	3	.01	312	.57	456	9	.02	663	1.22
361	1	.00	191	.35	414	9	.02	321	.59	457	11	.02	674	1.24
362	1	.00	192	.35	415	6	.01	327	.60	458	19	.03	693	1.28
366	1	.00	193	.36	416	3	.01	330	.61	459	15	.03	708	1.30
368	1	.00	194	.36	417	2	.00	332	.61	460	13	.02	721	1.33
369	2	.00	196	.36	418	3	.01	335	.62	461	14	.02	735	1.35
371	1	.00	197	.36	419	3	.01	338	.62	462	18	.03	753	1.39
372	2	.00	199	.37	420	10	.02	348	.64	463	12	.02	765	1.41
376	1	.00	200	.37	421	3	.01	351	.65	464	15	.03	780	1.44
377	1	.00	201	.37	422	4	.01	355	.65	465	22	.04	802	1.48
378	3	.01	204	.38	423	5	.01	360	.66	466	22	.04	824	1.52
379	2	.00	206	.38	424	5	.01	365	.67	467	9	.02	833	1.53
380	3	.01	209	.38	425	5	.01	370	.68	468	10	.02	843	1.55
381	2	.00	211	.39	426	5	.01	375	.69	469	30	.05	873	1.61
382	5	.01	216	.40	427	5	.01	380	.70	470	27	.05	900	1.66
383	4	.01	220	.41	428	6	.01	386	.71	471	22	.04	922	1.70
384	5	.01	225	.41	429	7	.01	393	.72	472	20	.04	942	1.73
385	1	.00	226	.42	430	7	.01	400	.74	473	22	.04	964	1.77
386	5	.01	231	.43	431	14	.02	414	.76	474	33	.06	997	1.84
387	5	.01	236	.43	432	5	.01	419	.77	475	25	.04	1022	1.88
388	3	.01	239	.44	433	5	.01	424	.78	476	20	.04	1042	1.92
389	1	.00	240	.44	434	10	.02	434	.80	477	22	.04	1064	1.96
390	4	.01	244	.45	435	5	.01	439	.81	478	23	.04	1087	2.00
391	3	.01	247	.45	436	5	.01	444	.82	479	24	.04	1111	2.05
392	1	.00	248	.46	437	8	.01	452	.83	480	24	.04	1135	2.09
395	5	.01	253	.47	438	6	.01	458	.84	481	19	.03	1154	2.12
396	3	.01	256	.47	439	6	.01	464	.85	482	32	.06	1186	2.18
397	6	.01	262	.48	440	12	.02	476	.88	483	32	.06	1218	2.24
398	1	.00	263	.48	441	9	.02	485	.89	484	24	.04	1242	2.29

Appendix 14. Reading 7 Scale Score Distribution (Continued)

SS	Freq.	%	Cum. Freq.	Cum. %	SS	Freq.	%	Cum. Freq.	Cum. %	SS	Freq.	%	Cum. Freq.	Cum. %
485	26	.05	1268	2.33	531	73	.13	3738	6.88	577	226	.40	9804	18.05
486	31	.05	1299	2.39	532	66	.12	3804	7.00	578	167	.29	9971	18.36
487	42	.07	1341	2.47	533	74	.13	3878	7.14	579	197	.35	10168	18.72
488	29	.05	1370	2.52	534	83	.15	3961	7.29	580	183	.32	10351	19.06
489	38	.07	1408	2.59	535	88	.15	4049	7.45	581	204	.36	10555	19.43
490	29	.05	1437	2.65	536	98	.17	4147	7.64	582	225	.40	10780	19.85
491	39	.07	1476	2.72	537	96	.17	4243	7.81	583	209	.37	10989	20.23
492	30	.05	1506	2.77	538	93	.16	4336	7.98	584	187	.33	11176	20.58
493	41	.07	1547	2.85	539	92	.16	4428	8.15	585	238	.42	11414	21.02
494	43	.08	1590	2.93	540	102	.18	4530	8.34	586	209	.37	11623	21.40
495	38	.07	1628	3.00	541	110	.19	4640	8.54	587	206	.36	11829	21.78
496	40	.07	1668	3.07	542	87	.15	4727	8.70	588	235	.41	12064	22.21
497	45	.08	1713	3.15	543	85	.15	4812	8.86	589	250	.44	12314	22.67
498	31	.05	1744	3.21	544	98	.17	4910	9.04	590	232	.41	12546	23.10
499	43	.08	1787	3.29	545	102	.18	5012	9.23	591	240	.42	12786	23.54
500	49	.09	1836	3.38	546	103	.18	5115	9.42	592	248	.44	13034	24.00
501	43	.08	1879	3.46	547	95	.17	5210	9.59	593	242	.43	13276	24.44
502	36	.06	1915	3.53	548	100	.18	5310	9.78	594	235	.41	13511	24.88
503	38	.07	1953	3.60	549	123	.22	5433	10.00	595	235	.41	13746	25.31
504	41	.07	1994	3.67	550	100	.18	5533	10.19	596	269	.47	14015	25.80
505	46	.08	2040	3.76	551	147	.26	5680	10.46	597	269	.47	14284	26.30
506	53	.09	2093	3.85	552	128	.23	5808	10.69	598	267	.47	14551	26.79
507	48	.08	2141	3.94	553	116	.20	5924	10.91	599	246	.43	14797	27.24
508	54	.10	2195	4.04	554	122	.21	6046	11.13	600	273	.48	15070	27.75
509	55	.10	2250	4.14	555	131	.23	6177	11.37	601	279	.49	15349	28.26
510	43	.08	2293	4.22	556	165	.29	6342	11.68	602	272	.48	15621	28.76
511	66	.12	2359	4.34	557	140	.25	6482	11.93	603	275	.48	15896	29.27
512	50	.09	2409	4.44	558	113	.20	6595	12.14	604	259	.46	16155	29.74
513	68	.12	2477	4.56	559	176	.31	6771	12.47	605	296	.52	16451	30.29
514	54	.10	2531	4.66	560	127	.22	6898	12.70	606	294	.52	16745	30.83
515	54	.10	2585	4.76	561	146	.26	7044	12.97	607	277	.49	17022	31.34
516	68	.12	2653	4.88	562	157	.28	7201	13.26	608	273	.48	17295	31.84
517	65	.11	2718	5.00	563	164	.29	7365	13.56	609	326	.57	17621	32.44
518	69	.12	2787	5.13	564	158	.28	7523	13.85	610	293	.52	17914	32.98
519	58	.10	2845	5.24	565	142	.25	7665	14.11	611	271	.48	18185	33.48
520	75	.13	2920	5.38	566	151	.27	7816	14.39	612	309	.54	18494	34.05
521	55	.10	2975	5.48	567	162	.29	7978	14.69	613	321	.57	18815	34.64
522	64	.11	3039	5.60	568	168	.30	8146	15.00	614	334	.59	19149	35.26
523	58	.10	3097	5.70	569	176	.31	8322	15.32	615	301	.53	19450	35.81
524	82	.14	3179	5.85	570	148	.26	8470	15.59	616	294	.52	19744	36.35
525	70	.12	3249	5.98	571	175	.31	8645	15.92	617	318	.56	20062	36.94
526	71	.13	3320	6.11	572	170	.30	8815	16.23	618	310	.55	20372	37.51
527	72	.13	3392	6.25	573	183	.32	8998	16.57	619	312	.55	20684	38.08
528	85	.15	3477	6.40	574	195	.34	9193	16.93	620	322	.57	21006	38.68
529	98	.17	3575	6.58	575	180	.32	9373	17.26	621	320	.56	21326	39.27
530	90	.16	3665	6.75	576	205	.36	9578	17.63	622	322	.57	21648	39.86

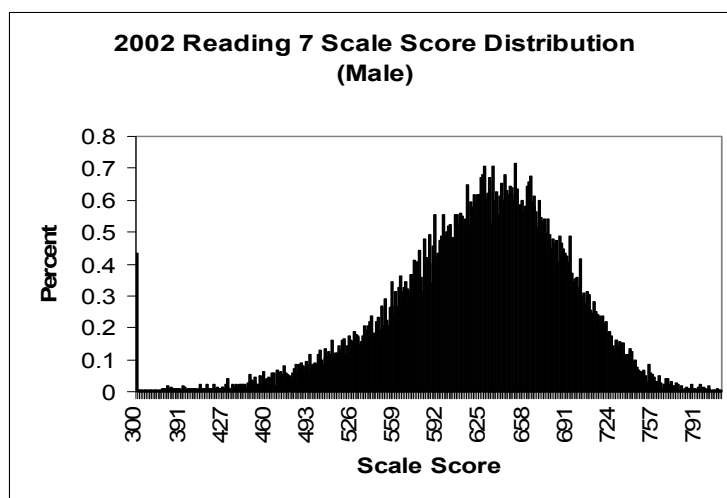
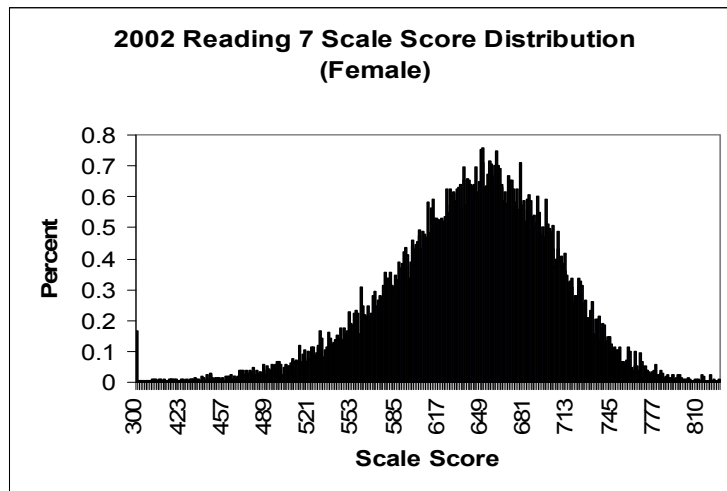
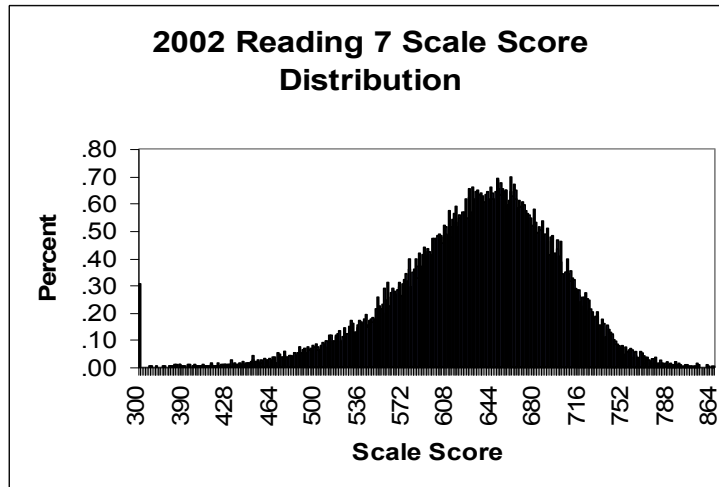
Appendix 14. Reading 7 Scale Score Distribution (Continued)

SS	Freq.	%	Cum. Freq.	Cum. %	SS	Freq.	%	Cum. Freq.	Cum. %	SS	Freq.	%	Cum. Freq.	Cum. %
623	352	.62	22000	40.51	669	346	.61	38434	70.76	715	148	.26	50023	92.10
624	312	.55	22312	41.08	670	335	.59	38769	71.38	716	163	.29	50186	92.40
625	353	.62	22665	41.73	671	339	.60	39108	72.00	717	136	.24	50322	92.65
626	372	.65	23037	42.42	672	327	.58	39435	72.61	718	147	.26	50469	92.92
627	324	.57	23361	43.01	673	319	.56	39754	73.19	719	129	.23	50598	93.16
628	376	.66	23737	43.70	674	298	.52	40052	73.74	720	147	.26	50745	93.43
629	338	.60	24075	44.33	675	318	.56	40370	74.33	721	157	.28	50902	93.72
630	350	.62	24425	44.97	676	312	.55	40682	74.90	722	144	.25	51046	93.98
631	366	.64	24791	45.64	677	296	.52	40978	75.45	723	141	.25	51187	94.24
632	369	.65	25160	46.32	678	329	.58	41307	76.05	724	119	.21	51306	94.46
633	330	.58	25490	46.93	679	289	.51	41596	76.59	725	122	.21	51428	94.69
634	360	.63	25850	47.59	680	301	.53	41897	77.14	726	115	.20	51543	94.90
635	363	.64	26213	48.26	681	280	.49	42177	77.66	727	98	.17	51641	95.08
636	356	.63	26569	48.92	682	282	.50	42459	78.17	728	104	.18	51745	95.27
637	341	.60	26910	49.55	683	292	.51	42751	78.71	729	108	.19	51853	95.47
638	345	.61	27255	50.18	684	287	.51	43038	79.24	730	106	.19	51959	95.67
639	360	.63	27615	50.84	685	304	.54	43342	79.80	731	117	.21	52076	95.88
640	330	.58	27945	51.45	686	261	.46	43603	80.28	732	88	.15	52164	96.04
641	367	.65	28312	52.13	687	278	.49	43881	80.79	733	87	.15	52251	96.20
642	351	.62	28663	52.77	688	279	.49	44160	81.31	734	101	.18	52352	96.39
643	375	.66	29038	53.46	689	263	.46	44423	81.79	735	73	.13	52425	96.52
644	363	.64	29401	54.13	690	290	.51	44713	82.32	736	92	.16	52517	96.69
645	351	.62	29752	54.78	691	236	.42	44949	82.76	737	64	.11	52581	96.81
646	350	.62	30102	55.42	692	271	.48	45220	83.26	738	86	.15	52667	96.97
647	366	.64	30468	56.10	693	274	.48	45494	83.76	739	87	.15	52754	97.13
648	394	.69	30862	56.82	694	234	.41	45728	84.19	740	79	.14	52833	97.28
649	389	.68	31251	57.54	695	238	.42	45966	84.63	741	73	.13	52906	97.41
650	371	.65	31622	58.22	696	239	.42	46205	85.07	742	68	.12	52974	97.53
651	383	.67	32005	58.93	697	266	.47	46471	85.56	743	70	.12	53044	97.66
652	361	.64	32366	59.59	698	247	.43	46718	86.02	744	59	.10	53103	97.77
653	371	.65	32737	60.27	699	233	.41	46951	86.45	745	56	.10	53159	97.88
654	365	.64	33102	60.95	700	220	.39	47171	86.85	746	49	.09	53208	97.97
655	369	.65	33471	61.63	701	261	.46	47432	87.33	747	49	.09	53257	98.06
656	370	.65	33841	62.31	702	195	.34	47627	87.69	748	47	.08	53304	98.14
657	338	.60	34179	62.93	703	191	.34	47818	88.04	749	41	.07	53345	98.22
658	349	.61	34528	63.57	704	199	.35	48017	88.41	750	43	.08	53388	98.30
659	366	.64	34894	64.25	705	199	.35	48216	88.77	751	45	.08	53433	98.38
660	395	.70	35289	64.97	706	227	.40	48443	89.19	752	27	.05	53460	98.43
661	357	.63	35646	65.63	707	195	.34	48638	89.55	753	43	.08	53503	98.51
662	382	.67	36028	66.33	708	201	.35	48839	89.92	754	26	.05	53529	98.56
663	370	.65	36398	67.02	709	180	.32	49019	90.25	755	34	.06	53563	98.62
664	351	.62	36749	67.66	710	187	.33	49206	90.60	756	36	.06	53599	98.69
665	332	.58	37081	68.27	711	182	.32	49388	90.93	757	41	.07	53640	98.76
666	348	.61	37429	68.91	712	165	.29	49553	91.24	758	22	.04	53662	98.80
667	323	.57	37752	69.51	713	161	.28	49714	91.53	759	36	.06	53698	98.87
668	336	.59	38088	70.13	714	161	.28	49875	91.83	760	22	.04	53720	98.91

Appendix 14. Reading 7 Scale Score Distribution (Continued)

SS	Freq.	%	Cum. Freq.	Cum. %	SS	Freq.	%	Cum. Freq.	Cum. %	SS	Freq.	%	Cum. Freq.	Cum. %
761	24	.04	53744	98.95	783	10	.02	54129	99.66	805	2	.00	54264	99.91
762	35	.06	53779	99.02	784	8	.01	54137	99.68	807	2	.00	54266	99.91
763	22	.04	53801	99.06	785	3	.01	54140	99.68	808	2	.00	54268	99.92
764	18	.03	53819	99.09	786	8	.01	54148	99.70	809	3	.01	54271	99.92
765	17	.03	53836	99.12	787	12	.02	54160	99.72	810	2	.00	54273	99.93
766	33	.06	53869	99.18	788	7	.01	54167	99.73	811	2	.00	54275	99.93
767	29	.05	53898	99.24	789	6	.01	54173	99.74	812	2	.00	54277	99.93
768	25	.04	53923	99.28	790	9	.02	54182	99.76	813	9	.02	54286	99.95
769	10	.02	53933	99.30	791	7	.01	54189	99.77	815	1	.00	54287	99.95
770	21	.04	53954	99.34	792	3	.01	54192	99.78	816	5	.01	54292	99.96
771	20	.04	53974	99.38	793	7	.01	54199	99.79	821	1	.00	54293	99.96
772	15	.03	53989	99.40	794	11	.02	54210	99.81	822	1	.00	54294	99.97
773	14	.02	54003	99.43	795	13	.02	54223	99.83	823	1	.00	54295	99.97
774	12	.02	54015	99.45	796	5	.01	54228	99.84	831	1	.00	54296	99.97
775	17	.03	54032	99.48	797	8	.01	54236	99.86	832	1	.00	54297	99.97
776	18	.03	54050	99.52	798	3	.01	54239	99.86	834	7	.01	54304	99.98
777	10	.02	54060	99.53	799	5	.01	54244	99.87	836	1	.00	54305	99.99
778	21	.04	54081	99.57	800	2	.00	54246	99.88	837	2	.00	54307	99.99
779	8	.01	54089	99.59	801	2	.00	54248	99.88	851	1	.00	54308	99.99
780	7	.01	54096	99.60	802	6	.01	54254	99.89	864	2	.00	54310	99.99
781	9	.02	54105	99.62	803	2	.00	54256	99.90	878	1	.00	54311	100.00
782	14	.02	54119	99.64	804	6	.01	54262	99.91	980	2	.00	54313	100.00

Figure 14. Reading 7 Scale Score Distributions for the Total Population, Female, and Male Students



Appendix 13. Mathematics 6 Scale Score Distribution

(SS = Scale Score, Freq. = Frequency, Cum. = Cumulative)

SS	Freq.	%	Cum. Freq.	Cum. %	SS	Freq.	%	Cum. Freq.	Cum. %	SS	Freq.	%	Cum. Freq.	Cum. %
240	127	.22	127	.23	290	2	.00	279	.50	333	11	.02	648	1.16
241	2	.00	129	.23	291	5	.01	284	.51	334	26	.05	674	1.21
243	3	.01	132	.24	292	2	.00	286	.51	335	14	.02	688	1.24
244	2	.00	134	.24	293	6	.01	292	.52	336	15	.03	703	1.26
246	2	.00	136	.24	294	6	.01	298	.54	337	9	.02	712	1.28
248	4	.01	140	.25	295	9	.02	307	.55	338	23	.04	735	1.32
249	4	.01	144	.26	296	7	.01	314	.56	339	12	.02	747	1.34
251	4	.01	148	.27	297	4	.01	318	.57	340	15	.03	762	1.37
252	3	.01	151	.27	298	5	.01	323	.58	341	16	.03	778	1.40
253	4	.01	155	.28	299	3	.01	326	.59	342	18	.03	796	1.43
254	2	.00	157	.28	300	1	.00	327	.59	343	20	.03	816	1.47
255	6	.01	163	.29	301	8	.01	335	.60	344	26	.05	842	1.51
256	2	.00	165	.30	302	6	.01	341	.61	345	18	.03	860	1.54
257	3	.01	168	.30	303	6	.01	347	.62	346	21	.04	881	1.58
258	1	.00	169	.30	304	6	.01	353	.63	347	20	.03	901	1.62
259	3	.01	172	.31	305	6	.01	359	.64	348	24	.04	925	1.66
261	3	.01	175	.31	306	4	.01	363	.65	349	21	.04	946	1.70
262	6	.01	181	.32	307	11	.02	374	.67	350	21	.04	967	1.74
263	1	.00	182	.33	308	3	.01	377	.68	351	19	.03	986	1.77
264	2	.00	184	.33	309	4	.01	381	.68	352	20	.03	1006	1.81
265	3	.01	187	.34	310	5	.01	386	.69	353	35	.06	1041	1.87
266	4	.01	191	.34	311	11	.02	397	.71	354	26	.05	1067	1.92
267	3	.01	194	.35	312	12	.02	409	.73	355	25	.04	1092	1.96
269	3	.01	197	.35	313	7	.01	416	.75	356	27	.05	1119	2.01
271	6	.01	203	.36	314	7	.01	423	.76	357	25	.04	1144	2.05
272	1	.00	204	.37	315	8	.01	431	.77	358	25	.04	1169	2.10
273	2	.00	206	.37	316	10	.02	441	.79	359	32	.06	1201	2.16
274	5	.01	211	.38	317	9	.02	450	.81	360	36	.06	1237	2.22
275	10	.02	221	.40	318	15	.03	465	.83	361	26	.05	1263	2.27
276	3	.01	224	.40	319	18	.03	483	.87	362	24	.04	1287	2.31
277	6	.01	230	.41	320	12	.02	495	.89	363	33	.06	1320	2.37
278	3	.01	233	.42	321	9	.02	504	.90	364	35	.06	1355	2.43
279	3	.01	236	.42	322	13	.02	517	.93	365	42	.07	1397	2.51
280	6	.01	242	.43	323	9	.02	526	.94	366	26	.05	1423	2.56
281	4	.01	246	.44	324	17	.03	543	.97	367	37	.06	1460	2.62
282	5	.01	251	.45	325	8	.01	551	.99	368	32	.06	1492	2.68
283	6	.01	257	.46	326	8	.01	559	1.00	369	37	.06	1529	2.75
284	4	.01	261	.47	327	10	.02	569	1.02	370	40	.07	1569	2.82
285	1	.00	262	.47	328	14	.02	583	1.05	371	26	.05	1595	2.86
286	4	.01	266	.48	329	10	.02	593	1.06	372	48	.08	1643	2.95
287	3	.01	269	.48	330	20	.03	613	1.10	373	31	.05	1674	3.01
288	7	.01	276	.50	331	12	.02	625	1.12	374	45	.08	1719	3.09
289	1	.00	277	.50	332	12	.02	637	1.14	375	43	.07	1762	3.16

Appendix 13. Mathematics 6 Scale Score Distribution (Continued)

SS	Freq.	%	Cum. Freq.	Cum. %	SS	Freq.	%	Cum. Freq.	Cum. %	SS	Freq.	%	Cum. Freq.	Cum. %
376	31	.05	1793	3.22	422	105	.18	4911	8.82	468	231	.40	12150	21.82
377	43	.07	1836	3.30	423	97	.17	5008	8.99	469	221	.38	12371	22.21
378	40	.07	1876	3.37	424	100	.17	5108	9.17	470	199	.35	12570	22.57
379	47	.08	1923	3.45	425	106	.18	5214	9.36	471	188	.33	12758	22.91
380	44	.08	1967	3.53	426	120	.21	5334	9.58	472	223	.39	12981	23.31
381	46	.08	2013	3.61	427	100	.17	5434	9.76	473	202	.35	13183	23.67
382	42	.07	2055	3.69	428	114	.20	5548	9.96	474	212	.37	13395	24.05
383	49	.09	2104	3.78	429	105	.18	5653	10.15	475	224	.39	13619	24.45
384	63	.11	2167	3.89	430	126	.22	5779	10.38	476	246	.43	13865	24.89
385	47	.08	2214	3.98	431	119	.21	5898	10.59	477	230	.40	14095	25.31
386	53	.09	2267	4.07	432	156	.27	6054	10.87	478	247	.43	14342	25.75
387	45	.08	2312	4.15	433	138	.24	6192	11.12	479	258	.45	14600	26.21
388	47	.08	2359	4.24	434	122	.21	6314	11.34	480	253	.44	14853	26.67
389	54	.09	2413	4.33	435	143	.25	6457	11.59	481	278	.48	15131	27.17
390	53	.09	2466	4.43	436	147	.26	6604	11.86	482	237	.41	15368	27.59
391	53	.09	2519	4.52	437	116	.20	6720	12.07	483	260	.45	15628	28.06
392	33	.06	2552	4.58	438	117	.20	6837	12.28	484	248	.43	15876	28.51
393	64	.11	2616	4.70	439	125	.22	6962	12.50	485	283	.49	16159	29.01
394	59	.10	2675	4.80	440	158	.27	7120	12.78	486	255	.44	16414	29.47
395	62	.11	2737	4.91	441	151	.26	7271	13.06	487	263	.46	16677	29.94
396	67	.12	2804	5.03	442	155	.27	7426	13.33	488	263	.46	16940	30.42
397	64	.11	2868	5.15	443	136	.24	7562	13.58	489	285	.49	17225	30.93
398	57	.10	2925	5.25	444	156	.27	7718	13.86	490	302	.52	17527	31.47
399	72	.12	2997	5.38	445	155	.27	7873	14.14	491	277	.48	17804	31.97
400	62	.11	3059	5.49	446	142	.25	8015	14.39	492	279	.48	18083	32.47
401	69	.12	3128	5.62	447	139	.24	8154	14.64	493	270	.47	18353	32.95
402	73	.13	3201	5.75	448	160	.28	8314	14.93	494	301	.52	18654	33.49
403	59	.10	3260	5.85	449	163	.28	8477	15.22	495	284	.49	18938	34.00
404	78	.14	3338	5.99	450	156	.27	8633	15.50	496	280	.49	19218	34.51
405	90	.16	3428	6.16	451	155	.27	8788	15.78	497	289	.50	19507	35.03
406	77	.13	3505	6.29	452	180	.31	8968	16.10	498	285	.49	19792	35.54
407	74	.13	3579	6.43	453	173	.30	9141	16.41	499	303	.53	20095	36.08
408	81	.14	3660	6.57	454	171	.30	9312	16.72	500	291	.50	20386	36.60
409	89	.15	3749	6.73	455	183	.32	9495	17.05	501	269	.47	20655	37.09
410	82	.14	3831	6.88	456	176	.31	9671	17.36	502	276	.48	20931	37.58
411	66	.11	3897	7.00	457	166	.29	9837	17.66	503	299	.52	21230	38.12
412	97	.17	3994	7.17	458	194	.34	10031	18.01	504	280	.49	21510	38.62
413	74	.13	4068	7.30	459	207	.36	10238	18.38	505	305	.53	21815	39.17
414	82	.14	4150	7.45	460	206	.36	10444	18.75	506	289	.50	22104	39.69
415	99	.17	4249	7.63	461	222	.39	10666	19.15	507	307	.53	22411	40.24
416	71	.12	4320	7.76	462	179	.31	10845	19.47	508	303	.53	22714	40.78
417	99	.17	4419	7.93	463	190	.33	11035	19.81	509	302	.52	23016	41.33
418	90	.16	4509	8.10	464	189	.33	11224	20.15	510	315	.55	23331	41.89
419	105	.18	4614	8.28	465	237	.41	11461	20.58	511	338	.59	23669	42.50
420	94	.16	4708	8.45	466	234	.41	11695	21.00	512	329	.57	23998	43.09
421	98	.17	4806	8.63	467	224	.39	11919	21.40	513	320	.56	24318	43.66

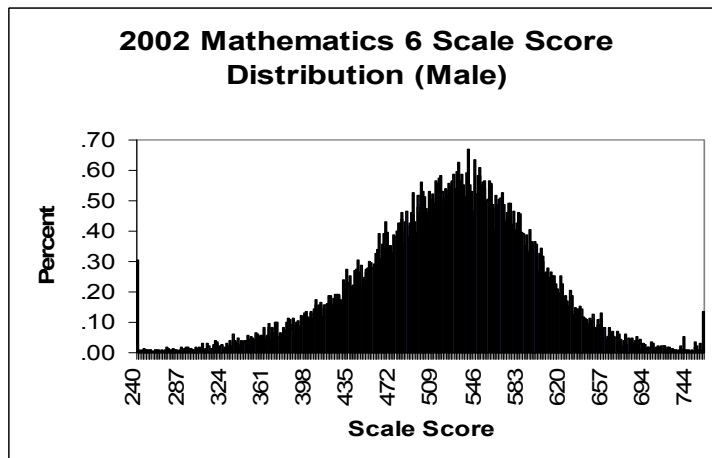
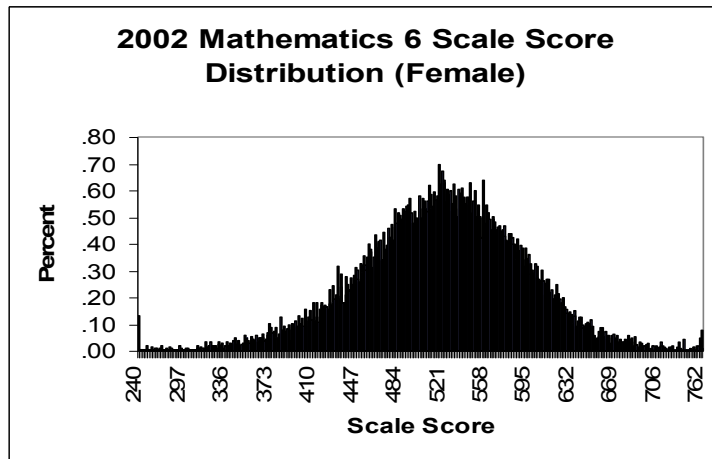
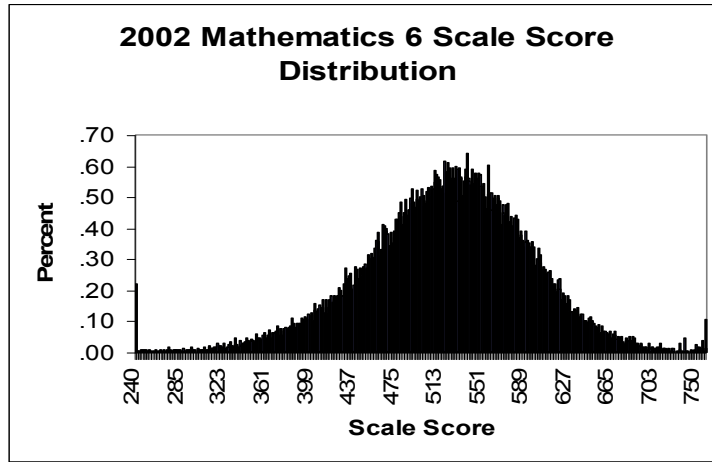
Appendix 13. Mathematics 6 Scale Score Distribution (Continued)

SS	Freq.	%	Cum. Freq.	Cum. %	SS	Freq.	%	Cum. Freq.	Cum. %	SS	Freq.	%	Cum. Freq.	Cum. %
514	324	.56	24642	44.25	560	297	.52	39342	70.64	606	153	.27	49802	89.42
515	321	.56	24963	44.82	561	264	.46	39606	71.11	607	160	.28	49962	89.71
516	302	.52	25265	45.36	562	287	.50	39893	71.63	608	155	.27	50117	89.99
517	309	.54	25574	45.92	563	291	.50	40184	72.15	609	147	.26	50264	90.25
518	308	.53	25882	46.47	564	272	.47	40456	72.64	610	126	.22	50390	90.48
519	355	.62	26237	47.11	565	275	.48	40731	73.13	611	150	.26	50540	90.75
520	295	.51	26532	47.64	566	291	.50	41022	73.66	612	151	.26	50691	91.02
521	334	.58	26866	48.24	567	287	.50	41309	74.17	613	137	.24	50828	91.26
522	353	.61	27219	48.87	568	281	.49	41590	74.68	614	124	.22	50952	91.49
523	341	.59	27560	49.48	569	236	.41	41826	75.10	615	128	.22	51080	91.72
524	342	.59	27902	50.10	570	273	.47	42099	75.59	616	126	.22	51206	91.94
525	322	.56	28224	50.68	571	259	.45	42358	76.05	617	117	.20	51323	92.15
526	343	.60	28567	51.29	572	255	.44	42613	76.51	618	113	.20	51436	92.35
527	323	.56	28890	51.87	573	244	.42	42857	76.95	619	134	.23	51570	92.60
528	310	.54	29200	52.43	574	273	.47	43130	77.44	620	137	.24	51707	92.84
529	345	.60	29545	53.05	575	277	.48	43407	77.94	621	117	.20	51824	93.05
530	339	.59	29884	53.66	576	243	.42	43650	78.37	622	99	.17	51923	93.23
531	282	.49	30166	54.16	577	241	.42	43891	78.81	623	111	.19	52034	93.43
532	343	.60	30509	54.78	578	253	.44	44144	79.26	624	97	.17	52131	93.60
533	323	.56	30832	55.36	579	235	.41	44379	79.68	625	106	.18	52237	93.79
534	326	.57	31158	55.94	580	243	.42	44622	80.12	626	91	.16	52328	93.96
535	292	.51	31450	56.47	581	249	.43	44871	80.57	627	82	.14	52410	94.10
536	317	.55	31767	57.04	582	255	.44	45126	81.02	628	104	.18	52514	94.29
537	340	.59	32107	57.65	583	208	.36	45334	81.40	629	97	.17	52611	94.46
538	324	.56	32431	58.23	584	248	.43	45582	81.84	630	76	.13	52687	94.60
539	370	.64	32801	58.90	585	212	.37	45794	82.22	631	77	.13	52764	94.74
540	322	.56	33123	59.47	586	225	.39	46019	82.63	632	75	.13	52839	94.87
541	318	.55	33441	60.04	587	218	.38	46237	83.02	633	80	.14	52919	95.02
542	310	.54	33751	60.60	588	209	.36	46446	83.39	634	72	.12	52991	95.15
543	300	.52	34051	61.14	589	196	.34	46642	83.75	635	79	.14	53070	95.29
544	341	.59	34392	61.75	590	224	.39	46866	84.15	636	82	.14	53152	95.44
545	312	.54	34704	62.31	591	205	.36	47071	84.52	637	69	.12	53221	95.56
546	332	.58	35036	62.91	592	208	.36	47279	84.89	638	66	.11	53287	95.68
547	318	.55	35354	63.48	593	204	.35	47483	85.26	639	72	.12	53359	95.81
548	322	.56	35676	64.06	594	190	.33	47673	85.60	640	60	.10	53419	95.92
549	332	.58	36008	64.65	595	196	.34	47869	85.95	641	70	.12	53489	96.04
550	331	.57	36339	65.25	596	206	.36	48075	86.32	642	59	.10	53548	96.15
551	307	.53	36646	65.80	597	189	.33	48264	86.66	643	52	.09	53600	96.24
552	308	.53	36954	66.35	598	196	.34	48460	87.01	644	59	.10	53659	96.35
553	314	.54	37268	66.92	599	161	.28	48621	87.30	645	57	.10	53716	96.45
554	285	.49	37553	67.43	600	162	.28	48783	87.59	646	56	.10	53772	96.55
555	288	.50	37841	67.94	601	173	.30	48956	87.90	647	64	.11	53836	96.66
556	267	.46	38108	68.42	602	193	.33	49149	88.25	648	65	.11	53901	96.78
557	347	.60	38455	69.05	603	166	.29	49315	88.55	649	50	.09	53951	96.87
558	293	.51	38748	69.57	604	182	.32	49497	88.87	650	58	.10	54009	96.97
559	297	.52	39045	70.11	605	152	.26	49649	89.15	651	53	.09	54062	97.07

Appendix 13. Mathematics 6 Scale Score Distribution (Continued)

SS	Freq.	%	Cum. Freq.	Cum. %	SS	Freq.	%	Cum. Freq.	Cum. %	SS	Freq.	%	Cum. Freq.	Cum. %
652	49	.09	54111	97.16	685	30	.05	55110	98.95	718	2	.00	55450	99.56
653	37	.06	54148	97.22	686	13	.02	55123	98.97	719	7	.01	55457	99.57
654	46	.08	54194	97.31	687	26	.05	55149	99.02	721	2	.00	55459	99.58
655	52	.09	54246	97.40	688	17	.03	55166	99.05	722	7	.01	55466	99.59
656	33	.06	54279	97.46	689	16	.03	55182	99.08	725	1	.00	55467	99.59
657	37	.06	54316	97.53	690	8	.01	55190	99.10	726	1	.00	55468	99.59
658	49	.09	54365	97.61	691	13	.02	55203	99.12	727	2	.00	55470	99.60
659	38	.07	54403	97.68	692	15	.03	55218	99.15	729	3	.01	55473	99.60
660	31	.05	54434	97.74	693	16	.03	55234	99.17	731	6	.01	55479	99.61
661	38	.07	54472	97.81	694	9	.02	55243	99.19	733	16	.03	55495	99.64
662	37	.06	54509	97.87	695	10	.02	55253	99.21	734	3	.01	55498	99.65
663	35	.06	54544	97.94	696	11	.02	55264	99.23	736	3	.01	55501	99.65
664	29	.05	54573	97.99	697	11	.02	55275	99.25	737	1	.00	55502	99.66
665	38	.07	54611	98.06	698	6	.01	55281	99.26	738	27	.05	55529	99.70
666	23	.04	54634	98.10	699	18	.03	55299	99.29	739	3	.01	55532	99.71
667	27	.05	54661	98.15	700	10	.02	55309	99.31	741	3	.01	55535	99.71
668	35	.06	54696	98.21	701	7	.01	55316	99.32	742	2	.00	55537	99.72
669	39	.07	54735	98.28	702	10	.02	55326	99.34	743	1	.00	55538	99.72
670	32	.06	54767	98.34	703	10	.02	55336	99.36	744	4	.01	55542	99.73
671	25	.04	54792	98.38	704	7	.01	55343	99.37	745	3	.01	55545	99.73
672	29	.05	54821	98.43	705	8	.01	55351	99.38	746	3	.01	55548	99.74
673	16	.03	54837	98.46	706	8	.01	55359	99.40	747	4	.01	55552	99.75
674	21	.04	54858	98.50	707	9	.02	55368	99.41	749	3	.01	55555	99.75
675	30	.05	54888	98.55	708	11	.02	55379	99.43	750	14	.02	55569	99.78
676	19	.03	54907	98.59	709	16	.03	55395	99.46	751	9	.02	55578	99.79
677	18	.03	54925	98.62	710	11	.02	55406	99.48	754	2	.00	55580	99.80
678	15	.03	54940	98.65	711	6	.01	55412	99.49	757	11	.02	55591	99.82
679	26	.05	54966	98.69	712	7	.01	55419	99.51	759	2	.00	55593	99.82
680	21	.04	54987	98.73	713	7	.01	55426	99.52	760	8	.01	55601	99.83
681	22	.04	55009	98.77	714	8	.01	55434	99.53	762	22	.04	55623	99.87
682	30	.05	55039	98.82	715	3	.01	55437	99.54	771	2	.00	55625	99.88
683	20	.03	55059	98.86	716	3	.01	55440	99.54	806	7	.01	55632	99.89
684	21	.04	55080	98.90	717	8	.01	55448	99.56	830	62	.11	55694	100.00

Figure 13. Mathematics 6 Scale Score Distributions for the Total Population, Female, and Male Students



Appendix 12. Writing 6 Scale Score Distribution

(SS = Scale Score, Freq. = Frequency, Cum. = Cumulative)

SS	Freq.	%	Cum. Freq.	Cum. %	SS	Freq.	%	Cum. Freq.	Cum. %	SS	Freq.	%	Cum. Freq.	Cum. %
230	26	.05	26	.05	292	1	.00	92	.17	339	7	.01	292	.52
232	1	.00	27	.05	293	3	.01	95	.17	338	4	.01	285	.51
233	1	.00	28	.05	294	1	.00	96	.17	340	7	.01	299	.54
234	2	.00	30	.05	295	2	.00	98	.18	341	7	.01	306	.55
235	1	.00	31	.06	296	2	.00	100	.18	342	6	.01	312	.56
236	1	.00	32	.06	297	2	.00	102	.18	343	7	.01	319	.57
237	1	.00	33	.06	298	5	.01	107	.19	344	13	.02	332	.60
238	1	.00	34	.06	301	3	.01	110	.20	345	12	.02	344	.62
239	1	.00	35	.06	302	4	.01	114	.20	346	13	.02	357	.64
241	1	.00	36	.06	303	5	.01	119	.21	347	10	.02	367	.66
242	1	.00	37	.07	304	7	.01	126	.23	348	20	.03	387	.70
243	1	.00	38	.07	305	4	.01	130	.23	349	14	.02	401	.72
245	1	.00	39	.07	306	3	.01	133	.24	350	14	.02	415	.75
246	1	.00	40	.07	307	1	.00	134	.24	351	13	.02	428	.77
247	1	.00	41	.07	308	1	.00	135	.24	352	12	.02	440	.79
249	1	.00	42	.08	309	3	.01	138	.25	353	16	.03	456	.82
250	1	.00	43	.08	310	2	.00	140	.25	354	9	.02	465	.84
251	1	.00	44	.08	311	4	.01	144	.26	355	27	.05	492	.88
252	1	.00	45	.08	312	3	.01	147	.26	356	21	.04	513	.92
253	2	.00	47	.08	313	8	.01	155	.28	357	15	.03	528	.95
255	2	.00	49	.09	315	1	.00	156	.28	358	22	.04	550	.99
258	1	.00	50	.09	316	3	.01	159	.29	359	21	.04	571	1.03
259	2	.00	52	.09	317	3	.01	162	.29	360	18	.03	589	1.06
263	1	.00	53	.10	318	6	.01	168	.30	361	20	.03	609	1.09
264	1	.00	54	.10	319	5	.01	173	.31	362	18	.03	627	1.13
266	1	.00	55	.10	320	1	.00	174	.31	363	20	.03	647	1.16
268	2	.00	57	.10	321	5	.01	179	.32	364	18	.03	665	1.20
269	1	.00	58	.10	322	4	.01	183	.33	365	22	.04	687	1.24
270	1	.00	59	.11	323	8	.01	191	.34	366	28	.05	715	1.29
271	1	.00	60	.11	324	7	.01	198	.36	367	33	.06	748	1.34
272	2	.00	62	.11	325	4	.01	202	.36	368	27	.05	775	1.39
276	4	.01	66	.12	326	3	.01	205	.37	369	23	.04	798	1.43
278	3	.01	69	.12	327	5	.01	210	.38	370	29	.05	827	1.49
279	2	.00	71	.13	328	4	.01	214	.38	371	25	.04	852	1.53
280	1	.00	72	.13	329	5	.01	219	.39	372	25	.04	877	1.58
281	1	.00	73	.13	330	8	.01	227	.41	373	29	.05	906	1.63
282	2	.00	75	.13	331	4	.01	231	.42	374	28	.05	934	1.68
283	1	.00	76	.14	332	7	.01	238	.43	375	24	.04	958	1.72
284	3	.01	79	.14	333	8	.01	246	.44	376	25	.04	983	1.77
285	6	.01	85	.15	334	7	.01	253	.45	377	30	.05	1013	1.82
286	3	.01	88	.16	335	8	.01	261	.47	378	39	.07	1052	1.89
287	1	.00	89	.16	336	11	.02	272	.49	379	34	.06	1086	1.95
289	2	.00	91	.16	337	9	.02	281	.51	380	39	.07	1125	2.02

Appendix 12. Writing 6 Scale Score Distribution (Continued)

SS	Freq.	%	Cum. Freq	Cum. %	SS	Freq.	%	Cum. Freq	Cum. %	SS	Freq.	%	Cum. Freq	Cum. %
381	32	.06	1157	2.08	427	114	.20	4785	8.60	473	295	.51	13867	24.93
382	47	.08	1204	2.16	428	130	.23	4915	8.84	474	279	.48	14146	25.43
383	42	.07	1246	2.24	429	140	.24	5055	9.09	475	273	.47	14419	25.92
384	33	.06	1279	2.30	430	128	.22	5183	9.32	476	285	.49	14704	26.43
385	40	.07	1319	2.37	431	118	.20	5301	9.53	477	278	.48	14982	26.93
386	35	.06	1354	2.43	432	126	.22	5427	9.76	478	310	.54	15292	27.49
387	48	.08	1402	2.52	433	140	.24	5567	10.01	479	289	.50	15581	28.01
388	49	.09	1451	2.61	434	130	.23	5697	10.24	480	264	.46	15845	28.49
389	47	.08	1498	2.69	435	145	.25	5842	10.50	481	317	.55	16162	29.06
390	57	.10	1555	2.80	436	145	.25	5987	10.76	482	268	.47	16430	29.54
391	42	.07	1597	2.87	437	148	.26	6135	11.03	483	334	.58	16764	30.14
392	53	.09	1650	2.97	438	168	.29	6303	11.33	484	315	.55	17079	30.70
393	48	.08	1698	3.05	439	165	.29	6468	11.63	485	306	.53	17385	31.25
394	51	.09	1749	3.14	440	176	.31	6644	11.94	486	318	.55	17703	31.83
395	59	.10	1808	3.25	441	173	.30	6817	12.26	487	318	.55	18021	32.40
396	42	.07	1850	3.33	442	150	.26	6967	12.52	488	324	.56	18345	32.98
397	67	.12	1917	3.45	443	189	.33	7156	12.86	489	300	.52	18645	33.52
398	52	.09	1969	3.54	444	182	.32	7338	13.19	490	327	.57	18972	34.11
399	68	.12	2037	3.66	445	189	.33	7527	13.53	491	340	.59	19312	34.72
400	75	.13	2112	3.80	446	165	.29	7692	13.83	492	354	.61	19666	35.35
401	52	.09	2164	3.89	447	177	.31	7869	14.15	493	350	.61	20016	35.98
402	68	.12	2232	4.01	448	175	.30	8044	14.46	494	327	.57	20343	36.57
403	81	.14	2313	4.16	449	183	.32	8227	14.79	495	338	.59	20681	37.18
404	73	.13	2386	4.29	450	202	.35	8429	15.15	496	350	.61	21031	37.81
405	78	.14	2464	4.43	451	215	.37	8644	15.54	497	374	.65	21405	38.48
406	62	.11	2526	4.54	452	195	.34	8839	15.89	498	366	.64	21771	39.14
407	80	.14	2606	4.68	453	213	.37	9052	16.27	499	358	.62	22129	39.78
408	80	.14	2686	4.83	454	193	.33	9245	16.62	500	349	.61	22478	40.41
409	75	.13	2761	4.96	455	221	.38	9466	17.02	501	389	.67	22867	41.11
410	74	.13	2835	5.10	456	208	.36	9674	17.39	502	343	.60	23210	41.73
411	97	.17	2932	5.27	457	213	.37	9887	17.77	503	337	.58	23547	42.33
412	101	.18	3033	5.45	458	233	.40	10120	18.19	504	379	.66	23926	43.01
413	99	.17	3132	5.63	459	225	.39	10345	18.60	505	386	.67	24312	43.71
414	85	.15	3217	5.78	460	243	.42	10588	19.03	506	328	.57	24640	44.30
415	104	.18	3321	5.97	461	235	.41	10823	19.46	507	361	.63	25001	44.95
416	108	.19	3429	6.16	462	212	.37	11035	19.84	508	350	.61	25351	45.57
417	118	.20	3547	6.38	463	222	.39	11257	20.24	509	362	.63	25713	46.23
418	117	.20	3664	6.59	464	263	.46	11520	20.71	510	320	.56	26033	46.80
419	117	.20	3781	6.80	465	252	.44	11772	21.16	511	358	.62	26391	47.44
420	111	.19	3892	7.00	466	262	.45	12034	21.63	512	374	.65	26765	48.12
421	146	.25	4038	7.26	467	239	.41	12273	22.06	513	363	.63	27128	48.77
422	128	.22	4166	7.49	468	277	.48	12550	22.56	514	369	.64	27497	49.43
423	127	.22	4293	7.72	469	248	.43	12798	23.01	515	355	.62	27852	50.07
424	128	.22	4421	7.95	470	238	.41	13036	23.44	516	351	.61	28203	50.70
425	114	.20	4535	8.15	471	270	.47	13306	23.92	517	350	.61	28553	51.33
426	136	.24	4671	8.40	472	266	.46	13572	24.40	518	353	.61	28906	51.97

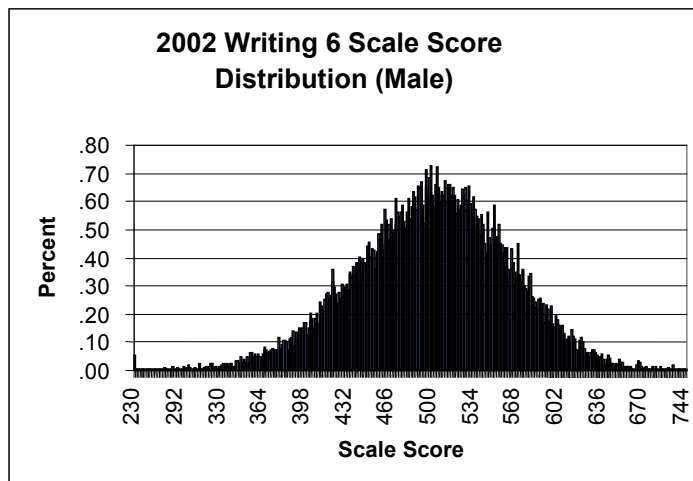
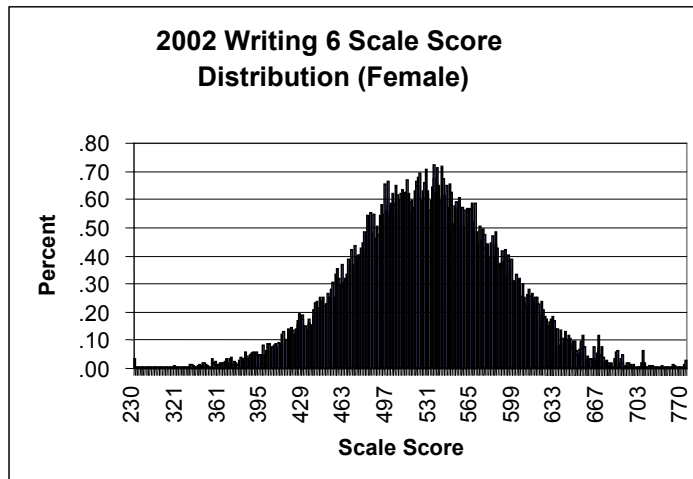
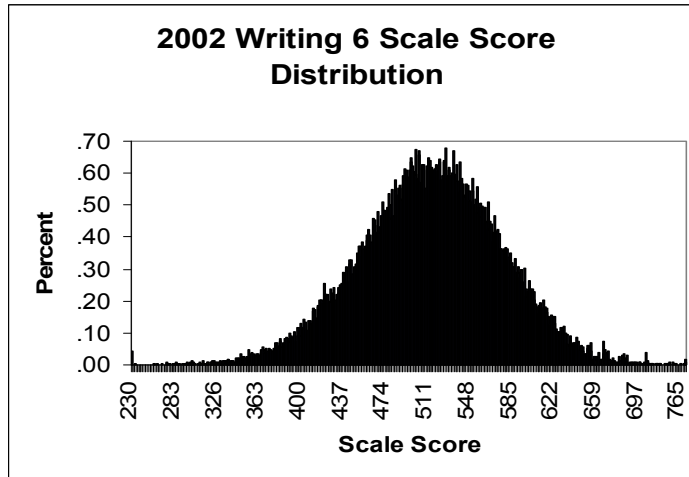
Appendix 12. Writing 6 Scale Score Distribution (Continued)

SS	Freq.	%	Cum. Freq	Cum. %	SS	Freq.	%	Cum. Freq	Cum. %	SS	Freq.	%	Cum. Freq	Cum. %
519	360	.62	29266	52.61	565	293	.51	44165	79.40	611	112	.19	52431	94.26
520	357	.62	29623	53.25	566	245	.43	44410	79.84	612	101	.18	52532	94.44
521	348	.60	29971	53.88	567	258	.45	44668	80.30	613	101	.18	52633	94.62
522	371	.64	30342	54.55	568	254	.44	44922	80.76	614	118	.20	52751	94.83
523	365	.63	30707	55.20	569	240	.42	45162	81.19	615	104	.18	52855	95.02
524	334	.58	31041	55.80	570	221	.38	45383	81.59	616	103	.18	52958	95.21
525	340	.59	31381	56.42	571	270	.47	45653	82.07	617	95	.16	53053	95.38
526	367	.64	31748	57.08	572	241	.42	45894	82.51	618	86	.15	53139	95.53
527	369	.64	32117	57.74	573	220	.38	46114	82.90	619	84	.15	53223	95.68
528	391	.68	32508	58.44	574	244	.42	46358	83.34	620	71	.12	53294	95.81
529	342	.59	32850	59.06	575	237	.41	46595	83.77	621	90	.16	53384	95.97
530	355	.62	33205	59.69	576	208	.36	46803	84.14	622	88	.15	53472	96.13
531	351	.61	33556	60.33	577	209	.36	47012	84.52	623	88	.15	53560	96.29
532	342	.59	33898	60.94	578	207	.36	47219	84.89	624	74	.13	53634	96.42
533	346	.60	34244	61.56	579	209	.36	47428	85.26	625	65	.11	53699	96.54
534	332	.58	34576	62.16	580	206	.36	47634	85.63	626	60	.10	53759	96.65
535	386	.67	34962	62.85	581	212	.37	47846	86.02	627	61	.11	53820	96.76
536	344	.60	35306	63.47	582	209	.36	48055	86.39	628	61	.11	53881	96.86
537	361	.63	35667	64.12	583	187	.32	48242	86.73	629	67	.12	53948	96.99
538	332	.58	35999	64.72	584	195	.34	48437	87.08	630	61	.11	54009	97.09
539	331	.57	36330	65.31	585	202	.35	48639	87.44	631	68	.12	54077	97.22
540	312	.54	36642	65.87	586	184	.32	48823	87.77	632	69	.12	54146	97.34
541	365	.63	37007	66.53	587	178	.31	49001	88.09	633	58	.10	54204	97.45
542	336	.58	37343	67.13	588	177	.31	49178	88.41	634	55	.10	54259	97.54
543	325	.56	37668	67.72	589	192	.33	49370	88.76	635	38	.07	54297	97.61
544	306	.53	37974	68.27	590	168	.29	49538	89.06	636	34	.06	54331	97.67
545	303	.53	38277	68.81	591	176	.31	49714	89.37	637	52	.09	54383	97.77
546	326	.57	38603	69.40	592	168	.29	49882	89.68	638	47	.08	54430	97.85
547	323	.56	38926	69.98	593	158	.27	50040	89.96	639	36	.06	54466	97.92
548	313	.54	39239	70.54	594	171	.30	50211	90.27	640	40	.07	54506	97.99
549	296	.51	39535	71.07	595	171	.30	50382	90.57	641	37	.06	54543	98.05
550	293	.51	39828	71.60	596	150	.26	50532	90.84	642	40	.07	54583	98.13
551	337	.58	40165	72.21	597	175	.30	50707	91.16	643	49	.09	54632	98.21
552	314	.54	40479	72.77	598	136	.24	50843	91.40	644	32	.06	54664	98.27
553	288	.50	40767	73.29	599	121	.21	50964	91.62	645	43	.07	54707	98.35
554	299	.52	41066	73.83	600	133	.23	51097	91.86	646	27	.05	54734	98.40
555	322	.56	41388	74.41	601	151	.26	51248	92.13	647	34	.06	54768	98.46
556	275	.48	41663	74.90	602	137	.24	51385	92.38	648	32	.06	54800	98.52
557	284	.49	41947	75.41	603	136	.24	51521	92.62	649	24	.04	54824	98.56
558	292	.51	42239	75.94	604	137	.24	51658	92.87	650	19	.03	54843	98.59
559	266	.46	42505	76.41	605	118	.20	51776	93.08	651	20	.03	54863	98.63
560	286	.50	42791	76.93	606	132	.23	51908	93.32	652	30	.05	54893	98.68
561	284	.49	43075	77.44	607	110	.19	52018	93.52	653	34	.06	54927	98.75
562	284	.49	43359	77.95	608	104	.18	52122	93.70	654	35	.06	54962	98.81
563	253	.44	43612	78.40	609	91	.16	52213	93.87	655	41	.07	55003	98.88
564	260	.45	43872	78.87	610	106	.18	52319	94.06	656	26	.05	55029	98.93

Appendix 12. Writing 6 Scale Score Distribution (Continued)

SS	Freq.	%	Cum. Freq	Cum. %	SS	Freq.	%	Cum. Freq	Cum. %	SS	Freq.	%	Cum. Freq	Cum. %
657	10	.02	55039	98.95	685	8	.01	55424	99.64	716	3	.01	55566	99.89
658	14	.02	55053	98.97	686	12	.02	55436	99.66	717	2	.00	55568	99.90
659	16	.03	55069	99.00	687	17	.03	55453	99.69	719	2	.00	55570	99.90
660	11	.02	55080	99.02	688	5	.01	55458	99.70	720	2	.00	55572	99.90
661	14	.02	55094	99.05	689	2	.00	55460	99.70	724	2	.00	55574	99.91
662	11	.02	55105	99.07	690	5	.01	55465	99.71	725	1	.00	55575	99.91
663	23	.04	55128	99.11	691	2	.00	55467	99.72	727	1	.00	55576	99.91
664	10	.02	55138	99.12	692	6	.01	55473	99.73	728	3	.01	55579	99.92
665	11	.02	55149	99.14	693	6	.01	55479	99.74	730	1	.00	55580	99.92
666	21	.04	55170	99.18	694	6	.01	55485	99.75	731	2	.00	55582	99.92
667	42	.07	55212	99.26	695	1	.00	55486	99.75	732	2	.00	55584	99.93
668	28	.05	55240	99.31	697	5	.01	55491	99.76	733	3	.01	55587	99.93
669	23	.04	55263	99.35	698	1	.00	55492	99.76	734	4	.01	55591	99.94
670	26	.05	55289	99.40	699	4	.01	55496	99.77	735	1	.00	55592	99.94
671	11	.02	55300	99.42	700	5	.01	55501	99.78	736	1	.00	55593	99.94
672	9	.02	55309	99.43	701	3	.01	55504	99.78	738	4	.01	55597	99.95
673	3	.01	55312	99.44	702	3	.01	55507	99.79	744	2	.00	55599	99.95
674	8	.01	55320	99.45	703	1	.00	55508	99.79	748	3	.01	55602	99.96
675	12	.02	55332	99.47	704	6	.01	55514	99.80	755	1	.00	55603	99.96
676	7	.01	55339	99.49	705	23	.04	55537	99.84	763	1	.00	55604	99.96
677	3	.01	55342	99.49	706	4	.01	55541	99.85	765	1	.00	55605	99.96
678	4	.01	55346	99.50	707	7	.01	55548	99.86	768	1	.00	55606	99.97
679	6	.01	55352	99.51	708	2	.00	55550	99.87	769	2	.00	55608	99.97
680	3	.01	55355	99.51	709	3	.01	55553	99.87	770	1	.00	55609	99.97
681	14	.02	55369	99.54	711	3	.01	55556	99.88	774	2	.00	55611	99.97
682	8	.01	55377	99.55	712	3	.01	55559	99.88	778	4	.01	55615	99.98
683	18	.03	55395	99.59	713	1	.00	55560	99.88	840	10	.02	55625	100.00
684	21	.04	55416	99.62	714	3	.01	55563	99.89					

Figure 12. Writing 6 Scale Score Distributions for the Total Population, Female, and Male Students



Appendix 11. Reading 6 Scale Score Distribution

(SS = Scale Score, Freq. = Frequency, Cum. = Cumulative)

SS	Freq.	%	Cum. Freq.	Cum. %	SS	Freq.	%	Cum. Freq.	Cum. %	SS	Freq.	%	Cum. Freq.	Cum. %
260	196	.34	196	.35	330	2	.00	273	.49	382	3	.01	377	.68
261	2	.00	198	.36	331	1	.00	274	.49	383	4	.01	381	.69
263	3	.01	201	.36	332	2	.00	276	.50	384	4	.01	385	.69
268	2	.00	203	.37	333	2	.00	278	.50	385	2	.00	387	.70
269	1	.00	204	.37	334	3	.01	281	.51	386	3	.01	390	.70
271	1	.00	205	.37	336	1	.00	282	.51	387	4	.01	394	.71
273	2	.00	207	.37	337	1	.00	283	.51	388	6	.01	400	.72
274	2	.00	209	.38	338	2	.00	285	.51	389	4	.01	404	.73
275	1	.00	210	.38	340	1	.00	286	.51	390	8	.01	412	.74
276	2	.00	212	.38	341	1	.00	287	.52	391	5	.01	417	.75
277	5	.01	217	.39	342	3	.01	290	.52	392	2	.00	419	.75
279	3	.01	220	.40	343	6	.01	296	.53	393	2	.00	421	.76
280	2	.00	222	.40	344	1	.00	297	.53	394	7	.01	428	.77
281	1	.00	223	.40	346	1	.00	298	.54	395	4	.01	432	.78
285	1	.00	224	.40	347	2	.00	300	.54	396	6	.01	438	.79
286	2	.00	226	.41	348	1	.00	301	.54	397	3	.01	441	.79
288	1	.00	227	.41	350	2	.00	303	.55	398	2	.00	443	.80
289	2	.00	229	.41	351	1	.00	304	.55	399	7	.01	450	.81
291	1	.00	230	.41	352	4	.01	308	.55	400	3	.01	453	.82
292	2	.00	232	.42	354	3	.01	311	.56	401	4	.01	457	.82
294	1	.00	233	.42	357	1	.00	312	.56	402	5	.01	462	.83
295	1	.00	234	.42	358	3	.01	315	.57	403	6	.01	468	.84
298	2	.00	236	.42	359	2	.00	317	.57	404	8	.01	476	.86
300	2	.00	238	.43	360	2	.00	319	.57	405	6	.01	482	.87
301	2	.00	240	.43	361	1	.00	320	.58	406	7	.01	489	.88
302	3	.01	243	.44	363	3	.01	323	.58	407	10	.02	499	.90
307	1	.00	244	.44	364	5	.01	328	.59	408	7	.01	506	.91
309	1	.00	245	.44	365	1	.00	329	.59	409	11	.02	517	.93
311	1	.00	246	.44	366	3	.01	332	.60	410	5	.01	522	.94
312	2	.00	248	.45	368	6	.01	338	.61	411	6	.01	528	.95
314	2	.00	250	.45	369	3	.01	341	.61	412	3	.01	531	.96
315	1	.00	251	.45	370	2	.00	343	.62	413	7	.01	538	.97
316	1	.00	252	.45	371	1	.00	344	.62	414	17	.03	555	1.00
317	3	.01	255	.46	372	3	.01	347	.62	415	4	.01	559	1.01
318	2	.00	257	.46	373	2	.00	349	.63	416	8	.01	567	1.02
319	1	.00	258	.46	374	4	.01	353	.64	417	6	.01	573	1.03
321	2	.00	260	.47	375	2	.00	355	.64	418	5	.01	578	1.04
322	1	.00	261	.47	376	4	.01	359	.65	419	10	.02	588	1.06
323	3	.01	264	.48	377	2	.00	361	.65	420	6	.01	594	1.07
324	1	.00	265	.48	378	4	.01	365	.66	421	9	.02	603	1.09
325	1	.00	266	.48	379	3	.01	368	.66	422	1	.00	604	1.09
328	2	.00	268	.48	380	5	.01	373	.67	423	4	.01	608	1.09
329	3	.01	271	.49	381	1	.00	374	.67	424	5	.01	613	1.10

Appendix 11. Reading 6 Scale Score Distribution (Continued)

SS	Freq.	%	Cum. Freq.	Cum. %	SS	Freq.	%	Cum. Freq.	Cum. %	SS	Freq.	%	Cum. Freq.	Cum. %
425	11	.02	624	1.12	471	19	.03	1293	2.33	517	70	.12	3301	5.94
426	6	.01	630	1.13	472	24	.04	1317	2.37	518	79	.14	3380	6.08
427	12	.02	642	1.16	473	22	.04	1339	2.41	519	77	.13	3457	6.22
428	6	.01	648	1.17	474	19	.03	1358	2.44	520	83	.14	3540	6.37
429	4	.01	652	1.17	475	21	.04	1379	2.48	521	71	.12	3611	6.50
430	4	.01	656	1.18	476	37	.06	1416	2.55	522	98	.17	3709	6.68
431	10	.02	666	1.20	477	36	.06	1452	2.61	523	108	.19	3817	6.87
432	6	.01	672	1.21	478	24	.04	1476	2.66	524	76	.13	3893	7.01
433	14	.02	686	1.23	479	18	.03	1494	2.69	525	70	.12	3963	7.13
434	8	.01	694	1.25	480	24	.04	1518	2.73	526	107	.19	4070	7.33
435	8	.01	702	1.26	481	36	.06	1554	2.80	527	90	.16	4160	7.49
436	16	.03	718	1.29	482	32	.06	1586	2.85	528	100	.17	4260	7.67
437	15	.03	733	1.32	483	28	.05	1614	2.90	529	92	.16	4352	7.83
438	12	.02	745	1.34	484	34	.06	1648	2.97	530	104	.18	4456	8.02
439	13	.02	758	1.36	485	32	.06	1680	3.02	531	79	.14	4535	8.16
440	9	.02	767	1.38	486	39	.07	1719	3.09	532	118	.20	4653	8.37
441	10	.02	777	1.40	487	35	.06	1754	3.16	533	111	.19	4764	8.57
442	12	.02	789	1.42	488	41	.07	1795	3.23	534	117	.20	4881	8.78
443	20	.03	809	1.46	489	42	.07	1837	3.31	535	95	.16	4976	8.96
444	9	.02	818	1.47	490	41	.07	1878	3.38	536	109	.19	5085	9.15
445	14	.02	832	1.50	491	32	.06	1910	3.44	537	108	.19	5193	9.35
446	16	.03	848	1.53	492	40	.07	1950	3.51	538	89	.15	5282	9.51
447	22	.04	870	1.57	493	28	.05	1978	3.56	539	117	.20	5399	9.72
448	14	.02	884	1.59	494	49	.09	2027	3.65	540	119	.21	5518	9.93
449	14	.02	898	1.62	495	46	.08	2073	3.73	541	118	.20	5636	10.14
450	12	.02	910	1.64	496	37	.06	2110	3.80	542	124	.22	5760	10.37
451	6	.01	916	1.65	497	52	.09	2162	3.89	543	125	.22	5885	10.59
452	14	.02	930	1.67	498	44	.08	2206	3.97	544	136	.24	6021	10.84
453	20	.03	950	1.71	499	48	.08	2254	4.06	545	129	.22	6150	11.07
454	15	.03	965	1.74	500	47	.08	2301	4.14	546	121	.21	6271	11.29
455	20	.03	985	1.77	501	40	.07	2341	4.21	547	163	.28	6434	11.58
456	13	.02	998	1.80	502	42	.07	2383	4.29	548	130	.23	6564	11.81
457	25	.04	1023	1.84	503	58	.10	2441	4.39	549	124	.22	6688	12.04
458	11	.02	1034	1.86	504	51	.09	2492	4.49	550	149	.26	6837	12.31
459	28	.05	1062	1.91	505	50	.09	2542	4.58	551	155	.27	6992	12.58
460	15	.03	1077	1.94	506	56	.10	2598	4.68	552	164	.28	7156	12.88
461	15	.03	1092	1.97	507	52	.09	2650	4.77	553	143	.25	7299	13.14
462	13	.02	1105	1.99	508	53	.09	2703	4.86	554	166	.29	7465	13.44
463	19	.03	1124	2.02	509	55	.10	2758	4.96	555	155	.27	7620	13.71
464	22	.04	1146	2.06	510	56	.10	2814	5.06	556	139	.24	7759	13.96
465	21	.04	1167	2.10	511	65	.11	2879	5.18	557	172	.30	7931	14.27
466	21	.04	1188	2.14	512	67	.12	2946	5.30	558	181	.31	8112	14.60
467	18	.03	1206	2.17	513	79	.14	3025	5.44	559	162	.28	8274	14.89
468	34	.06	1240	2.23	514	71	.12	3096	5.57	560	180	.31	8454	15.22
469	18	.03	1258	2.26	515	75	.13	3171	5.71	561	177	.31	8631	15.53
470	16	.03	1274	2.29	516	60	.10	3231	5.82	562	189	.33	8820	15.87

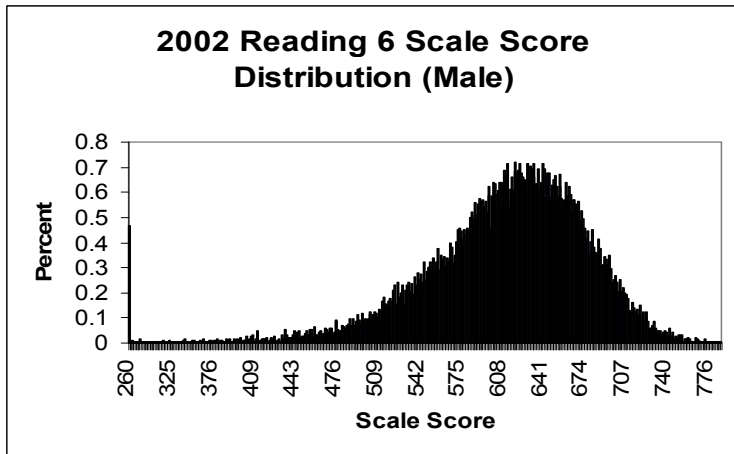
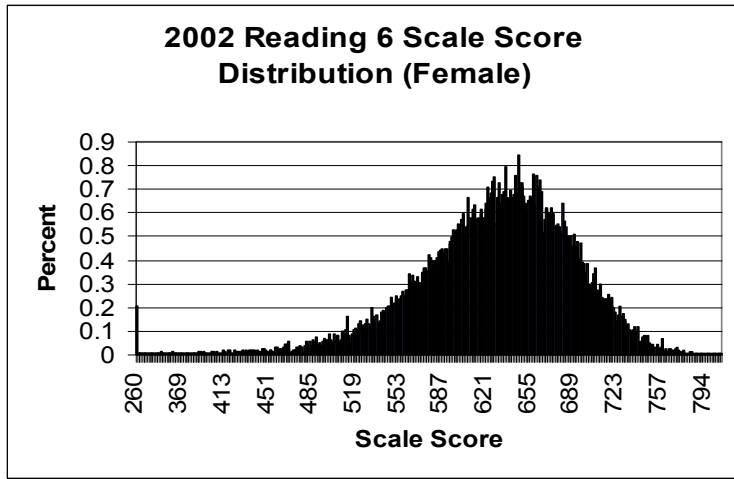
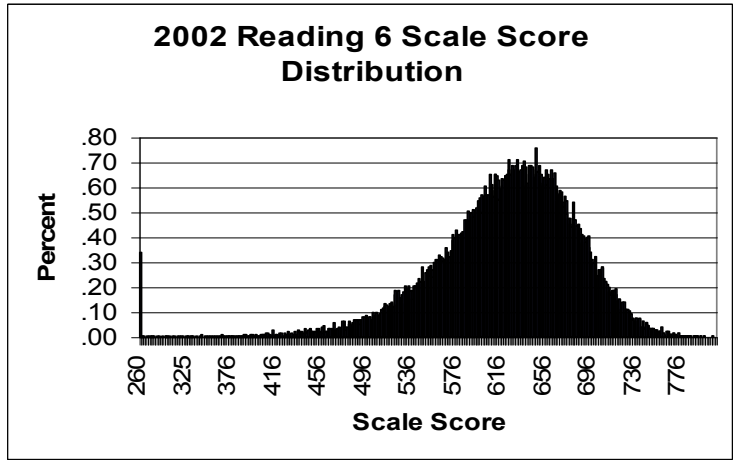
Appendix 11. Reading 6 Scale Score Distribution (Continued)

SS	Freq.	%	Cum. Freq.	Cum. %	SS	Freq.	%	Cum. Freq.	Cum. %	SS	Freq.	%	Cum. Freq.	Cum. %
563	187	.32	9007	16.21	609	351	.61	21251	38.25	655	369	.64	38584	69.44
564	184	.32	9191	16.54	610	324	.56	21575	38.83	656	387	.67	38971	70.14
565	176	.31	9367	16.86	611	376	.65	21951	39.51	657	354	.61	39325	70.78
566	181	.31	9548	17.18	612	377	.65	22328	40.19	658	376	.65	39701	71.45
567	172	.30	9720	17.49	613	372	.65	22700	40.86	659	334	.58	40035	72.06
568	208	.36	9928	17.87	614	363	.63	23063	41.51	660	366	.64	40401	72.71
569	198	.34	10126	18.23	615	320	.56	23383	42.09	661	385	.67	40786	73.41
570	176	.31	10302	18.54	616	344	.60	23727	42.70	662	367	.64	41153	74.07
571	188	.33	10490	18.88	617	366	.64	24093	43.36	663	365	.63	41518	74.73
572	199	.35	10689	19.24	618	348	.60	24441	43.99	664	381	.66	41899	75.41
573	223	.39	10912	19.64	619	364	.63	24805	44.64	665	349	.61	42248	76.04
574	238	.41	11150	20.07	620	374	.65	25179	45.32	666	315	.55	42563	76.61
575	231	.40	11381	20.48	621	372	.65	25551	45.99	667	330	.57	42893	77.20
576	212	.37	11593	20.87	622	376	.65	25927	46.66	668	339	.59	43232	77.81
577	249	.43	11842	21.31	623	409	.71	26336	47.40	669	333	.58	43565	78.41
578	238	.41	12080	21.74	624	386	.67	26722	48.09	670	334	.58	43899	79.01
579	230	.40	12310	22.16	625	376	.65	27098	48.77	671	312	.54	44211	79.57
580	239	.41	12549	22.59	626	380	.66	27478	49.46	672	303	.53	44514	80.12
581	241	.42	12790	23.02	627	397	.69	27875	50.17	673	324	.56	44838	80.70
582	243	.42	13033	23.46	628	388	.67	28263	50.87	674	316	.55	45154	81.27
583	245	.43	13278	23.90	629	349	.61	28612	51.50	675	286	.50	45440	81.78
584	271	.47	13549	24.39	630	396	.69	29008	52.21	676	275	.48	45715	82.28
585	266	.46	13815	24.86	631	410	.71	29418	52.95	677	275	.48	45990	82.77
586	271	.47	14086	25.35	632	381	.66	29799	53.63	678	260	.45	46250	83.24
587	290	.50	14376	25.87	633	384	.67	30183	54.32	679	255	.44	46505	83.70
588	270	.47	14646	26.36	634	385	.67	30568	55.02	680	265	.46	46770	84.18
589	272	.47	14918	26.85	635	395	.69	30963	55.73	681	312	.54	47082	84.74
590	287	.50	15205	27.37	636	380	.66	31343	56.41	682	231	.40	47313	85.16
591	294	.51	15499	27.90	637	408	.71	31751	57.15	683	271	.47	47584	85.64
592	277	.48	15776	28.39	638	392	.68	32143	57.85	684	258	.45	47842	86.11
593	286	.50	16062	28.91	639	350	.61	32493	58.48	685	246	.43	48088	86.55
594	299	.52	16361	29.45	640	357	.62	32850	59.12	686	260	.45	48348	87.02
595	299	.52	16660	29.99	641	377	.65	33227	59.80	687	252	.44	48600	87.47
596	314	.54	16974	30.55	642	397	.69	33624	60.52	688	239	.41	48839	87.90
597	301	.52	17275	31.09	643	395	.69	34019	61.23	689	216	.37	49055	88.29
598	321	.56	17596	31.67	644	385	.67	34404	61.92	690	235	.41	49290	88.71
599	328	.57	17924	32.26	645	392	.68	34796	62.63	691	228	.40	49518	89.12
600	289	.50	18213	32.78	646	370	.64	35166	63.29	692	219	.38	49737	89.52
601	325	.56	18538	33.37	647	438	.76	35604	64.08	693	231	.40	49968	89.93
602	348	.60	18886	33.99	648	375	.65	35979	64.76	694	206	.36	50174	90.30
603	330	.57	19216	34.59	649	383	.66	36362	65.45	695	235	.41	50409	90.73
604	328	.57	19544	35.18	650	396	.69	36758	66.16	696	195	.34	50604	91.08
605	309	.54	19853	35.73	651	374	.65	37132	66.83	697	181	.31	50785	91.40
606	330	.57	20183	36.33	652	378	.66	37510	67.51	698	168	.29	50953	91.71
607	377	.65	20560	37.00	653	355	.62	37865	68.15	699	172	.30	51125	92.02
608	340	.59	20900	37.62	654	350	.61	38215	68.78	700	188	.33	51313	92.35

Appendix 11. Reading 6 Scale Score Distribution (Continued)

SS	Freq.	%	Cum. Freq.	Cum. %	SS	Freq.	%	Cum. Freq.	Cum. %	SS	Freq.	%	Cum. Freq.	Cum. %
701	156	.27	51469	92.64	747	27	.05	55201	99.35	795	1	.00	55542	99.97
702	142	.25	51611	92.89	748	17	.03	55218	99.38	796	2	.00	55544	99.97
703	157	.27	51768	93.17	749	20	.03	55238	99.42	798	1	.00	55545	99.97
704	143	.25	51911	93.43	750	21	.04	55259	99.46	799	1	.00	55546	99.97
705	156	.27	52067	93.71	751	16	.03	55275	99.49	802	3	.01	55549	99.98
706	160	.28	52227	94.00	752	19	.03	55294	99.52	810	1	.00	55550	99.98
707	162	.28	52389	94.29	753	17	.03	55311	99.55	812	1	.00	55551	99.98
708	134	.23	52523	94.53	754	9	.02	55320	99.57	814	1	.00	55552	99.98
709	127	.22	52650	94.76	755	16	.03	55336	99.60	815	1	.00	55553	99.99
710	128	.22	52778	94.99	756	12	.02	55348	99.62	816	1	.00	55554	99.99
711	121	.21	52899	95.21	757	12	.02	55360	99.64	819	1	.00	55555	99.99
712	105	.18	53004	95.40	758	13	.02	55373	99.66	848	1	.00	55556	99.99
713	114	.20	53118	95.60	759	24	.04	55397	99.70	852	2	.00	55558	99.99
714	99	.17	53217	95.78	760	5	.01	55402	99.71	863	1	.00	55559	100.00
715	107	.19	53324	95.97	761	9	.02	55411	99.73	866	1	.00	55560	100.00
716	97	.17	53421	96.15	762	4	.01	55415	99.74	887	1	.00	55561	100.00
717	110	.19	53531	96.35	763	6	.01	55421	99.75					
718	100	.17	53631	96.53	764	14	.02	55435	99.77					
719	111	.19	53742	96.73	765	12	.02	55447	99.79					
720	86	.15	53828	96.88	766	8	.01	55455	99.81					
721	88	.15	53916	97.04	767	6	.01	55461	99.82					
722	87	.15	54003	97.20	768	2	.00	55463	99.82					
723	65	.11	54068	97.31	769	8	.01	55471	99.84					
724	71	.12	54139	97.44	770	9	.02	55480	99.85					
725	83	.14	54222	97.59	771	2	.00	55482	99.86					
726	83	.14	54305	97.74	772	6	.01	55488	99.87					
727	63	.11	54368	97.85	773	5	.01	55493	99.88					
728	65	.11	54433	97.97	774	4	.01	55497	99.88					
729	63	.11	54496	98.08	775	9	.02	55506	99.90					
730	59	.10	54555	98.19	776	5	.01	55511	99.91					
731	60	.10	54615	98.30	777	2	.00	55513	99.91					
732	54	.09	54669	98.39	778	2	.00	55515	99.92					
733	45	.08	54714	98.48	780	2	.00	55517	99.92					
734	41	.07	54755	98.55	781	1	.00	55518	99.92					
735	37	.06	54792	98.62	782	3	.01	55521	99.93					
736	44	.08	54836	98.70	783	4	.01	55525	99.94					
737	43	.07	54879	98.77	784	2	.00	55527	99.94					
738	36	.06	54915	98.84	785	2	.00	55529	99.94					
739	42	.07	54957	98.91	786	2	.00	55531	99.95					
740	45	.08	55002	98.99	787	1	.00	55532	99.95					
741	23	.04	55025	99.04	788	1	.00	55533	99.95					
742	24	.04	55049	99.08	790	2	.00	55535	99.95					
743	38	.07	55087	99.15	791	2	.00	55537	99.96					
744	22	.04	55109	99.19	792	1	.00	55538	99.96					
745	35	.06	55144	99.25	793	2	.00	55540	99.96					
746	30	.05	55174	99.30	794	1	.00	55541	99.96					

Figure 11. Reading 6 Scale Score Distributions for the Total Population, Female, and Male Students



Appendix 10. Mathematics 5 Scale Score Distribution

(SS = Scale Score, Freq. = Frequency, Cum. = Cumulative)

SS	Freq.	%	Cum. Freq.	Cum. %	SS	Freq.	%	Cum. Freq.	Cum. %	SS	Freq.	%	Cum. Freq.	Cum. %
220	76	.13	76	.13	269	3	.01	206	.36	312	17	.03	532	.94
222	4	.01	80	.14	270	8	.01	214	.38	313	17	.03	549	.97
223	1	.00	81	.14	271	4	.01	218	.39	314	18	.03	567	1.00
224	1	.00	82	.14	272	3	.01	221	.39	315	6	.01	573	1.01
226	1	.00	83	.15	273	6	.01	227	.40	316	16	.03	589	1.04
227	3	.01	86	.15	274	3	.01	230	.41	317	10	.02	599	1.06
229	3	.01	89	.16	275	4	.01	234	.41	318	14	.02	613	1.08
230	2	.00	91	.16	276	6	.01	240	.42	319	9	.02	622	1.10
231	3	.01	94	.17	277	4	.01	244	.43	320	16	.03	638	1.13
232	2	.00	96	.17	278	2	.00	246	.43	321	20	.03	658	1.16
233	2	.00	98	.17	279	8	.01	254	.45	322	9	.02	667	1.18
234	3	.01	101	.18	280	3	.01	257	.45	323	16	.03	683	1.21
235	1	.00	102	.18	281	3	.01	260	.46	324	11	.02	694	1.23
237	2	.00	104	.18	282	9	.02	269	.48	325	20	.03	714	1.26
238	1	.00	105	.19	283	3	.01	272	.48	326	14	.02	728	1.29
239	3	.01	108	.19	284	7	.01	279	.49	327	12	.02	740	1.31
240	3	.01	111	.20	285	3	.01	282	.50	328	18	.03	758	1.34
241	3	.01	114	.20	286	8	.01	290	.51	329	17	.03	775	1.37
242	3	.01	117	.21	287	6	.01	296	.52	330	13	.02	788	1.39
243	2	.00	119	.21	288	6	.01	302	.53	331	21	.04	809	1.43
244	3	.01	122	.22	289	10	.02	312	.55	332	27	.05	836	1.48
245	3	.01	125	.22	290	7	.01	319	.56	333	24	.04	860	1.52
246	2	.00	127	.22	291	11	.02	330	.58	334	24	.04	884	1.56
247	1	.00	128	.23	292	5	.01	335	.59	335	21	.04	905	1.60
249	2	.00	130	.23	293	6	.01	341	.60	336	20	.03	925	1.63
250	6	.01	136	.24	294	6	.01	347	.61	337	26	.04	951	1.68
251	1	.00	137	.24	295	9	.02	356	.63	338	26	.04	977	1.73
253	4	.01	141	.25	296	12	.02	368	.65	339	24	.04	1001	1.77
254	4	.01	145	.26	297	7	.01	375	.66	340	24	.04	1025	1.81
255	2	.00	147	.26	298	8	.01	383	.68	341	26	.04	1051	1.86
256	2	.00	149	.26	299	7	.01	390	.69	342	23	.04	1074	1.90
257	4	.01	153	.27	300	12	.02	402	.71	343	28	.05	1102	1.95
258	7	.01	160	.28	301	10	.02	412	.73	344	27	.05	1129	1.99
259	6	.01	166	.29	302	10	.02	422	.75	345	34	.06	1163	2.05
260	5	.01	171	.30	303	6	.01	428	.76	346	28	.05	1191	2.10
261	4	.01	175	.31	304	14	.02	442	.78	347	30	.05	1221	2.16
262	6	.01	181	.32	305	7	.01	449	.79	348	34	.06	1255	2.22
263	6	.01	187	.33	306	10	.02	459	.81	349	35	.06	1290	2.28
264	4	.01	191	.34	307	14	.02	473	.84	350	41	.07	1331	2.35
265	3	.01	194	.34	308	15	.03	488	.86	351	32	.06	1363	2.41
266	4	.01	198	.35	309	9	.02	497	.88	352	29	.05	1392	2.46
267	3	.01	201	.36	310	13	.02	510	.90	353	41	.07	1433	2.53
268	2	.00	203	.36	311	5	.01	515	.91	354	24	.04	1457	2.57

Appendix 10. Mathematics 5 Scale Score Distribution (Continued)

SS	Freq.	%	Cum. Freq.	Cum. %	SS	Freq.	%	Cum. Freq.	Cum. %	SS	Freq.	%	Cum. Freq.	Cum. %
355	44	.08	1501	2.65	401	107	.18	4614	8.15	447	212	.36	12049	21.29
356	29	.05	1530	2.70	402	91	.16	4705	8.31	448	226	.39	12275	21.69
357	36	.06	1566	2.77	403	110	.19	4815	8.51	449	262	.45	12537	22.15
358	40	.07	1606	2.84	404	121	.21	4936	8.72	450	268	.46	12805	22.62
359	49	.08	1655	2.92	405	107	.18	5043	8.91	451	247	.43	13052	23.06
360	46	.08	1701	3.01	406	124	.21	5167	9.13	452	253	.44	13305	23.51
361	43	.07	1744	3.08	407	122	.21	5289	9.34	453	244	.42	13549	23.94
362	44	.08	1788	3.16	408	123	.21	5412	9.56	454	243	.42	13792	24.37
363	40	.07	1828	3.23	409	131	.23	5543	9.79	455	239	.41	14031	24.79
364	45	.08	1873	3.31	410	132	.23	5675	10.03	456	244	.42	14275	25.22
365	49	.08	1922	3.40	411	128	.22	5803	10.25	457	258	.44	14533	25.68
366	36	.06	1958	3.46	412	140	.24	5943	10.50	458	270	.46	14803	26.15
367	51	.09	2009	3.55	413	112	.19	6055	10.70	459	228	.39	15031	26.56
368	45	.08	2054	3.63	414	124	.21	6179	10.92	460	273	.47	15304	27.04
369	43	.07	2097	3.70	415	141	.24	6320	11.17	461	284	.49	15588	27.54
370	53	.09	2150	3.80	416	139	.24	6459	11.41	462	250	.43	15838	27.98
371	63	.11	2213	3.91	417	150	.26	6609	11.68	463	226	.39	16064	28.38
372	52	.09	2265	4.00	418	138	.24	6747	11.92	464	274	.47	16338	28.87
373	63	.11	2328	4.11	419	131	.23	6878	12.15	465	273	.47	16611	29.35
374	71	.12	2399	4.24	420	144	.25	7022	12.41	466	272	.47	16883	29.83
375	43	.07	2442	4.31	421	133	.23	7155	12.64	467	283	.49	17166	30.33
376	61	.10	2503	4.42	422	158	.27	7313	12.92	468	293	.50	17459	30.85
377	61	.10	2564	4.53	423	141	.24	7454	13.17	469	259	.45	17718	31.30
378	79	.14	2643	4.67	424	186	.32	7640	13.50	470	274	.47	17992	31.79
379	56	.10	2699	4.77	425	179	.31	7819	13.81	471	259	.45	18251	32.25
380	75	.13	2774	4.90	426	157	.27	7976	14.09	472	271	.47	18522	32.72
381	62	.11	2836	5.01	427	168	.29	8144	14.39	473	281	.48	18803	33.22
382	79	.14	2915	5.15	428	159	.27	8303	14.67	474	257	.44	19060	33.67
383	79	.14	2994	5.29	429	166	.29	8469	14.96	475	300	.52	19360	34.20
384	73	.13	3067	5.42	430	191	.33	8660	15.30	476	291	.50	19651	34.72
385	85	.15	3152	5.57	431	172	.30	8832	15.60	477	301	.52	19952	35.25
386	81	.14	3233	5.71	432	180	.31	9012	15.92	478	275	.47	20227	35.74
387	90	.15	3323	5.87	433	209	.36	9221	16.29	479	303	.52	20530	36.27
388	71	.12	3394	6.00	434	188	.32	9409	16.62	480	303	.52	20833	36.81
389	76	.13	3470	6.13	435	210	.36	9619	16.99	481	287	.49	21120	37.31
390	84	.14	3554	6.28	436	175	.30	9794	17.30	482	299	.51	21419	37.84
391	106	.18	3660	6.47	437	186	.32	9980	17.63	483	293	.50	21712	38.36
392	84	.14	3744	6.61	438	197	.34	10177	17.98	484	285	.49	21997	38.86
393	74	.13	3818	6.75	439	197	.34	10374	18.33	485	300	.52	22297	39.39
394	100	.17	3918	6.92	440	215	.37	10589	18.71	486	291	.50	22588	39.91
395	95	.16	4013	7.09	441	215	.37	10804	19.09	487	315	.54	22903	40.46
396	93	.16	4106	7.25	442	183	.31	10987	19.41	488	323	.56	23226	41.03
397	93	.16	4199	7.42	443	212	.36	11199	19.79	489	335	.58	23561	41.63
398	102	.18	4301	7.60	444	196	.34	11395	20.13	490	339	.58	23900	42.23
399	110	.19	4411	7.79	445	236	.41	11631	20.55	491	333	.57	24233	42.81
400	96	.17	4507	7.96	446	206	.35	11837	20.91	492	316	.54	24549	43.37

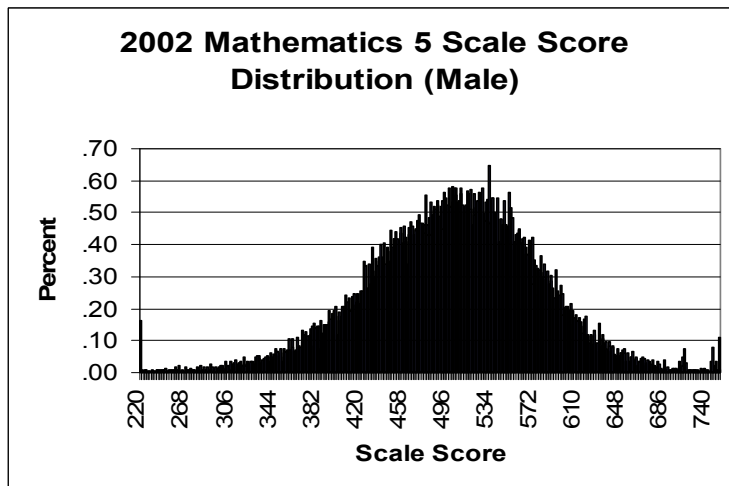
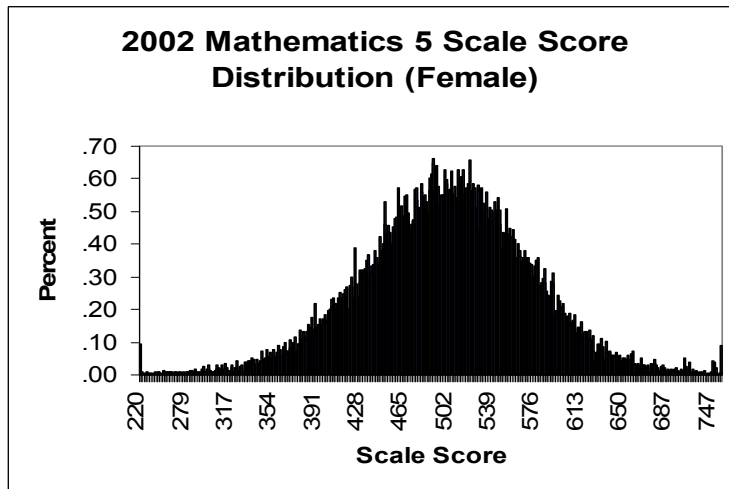
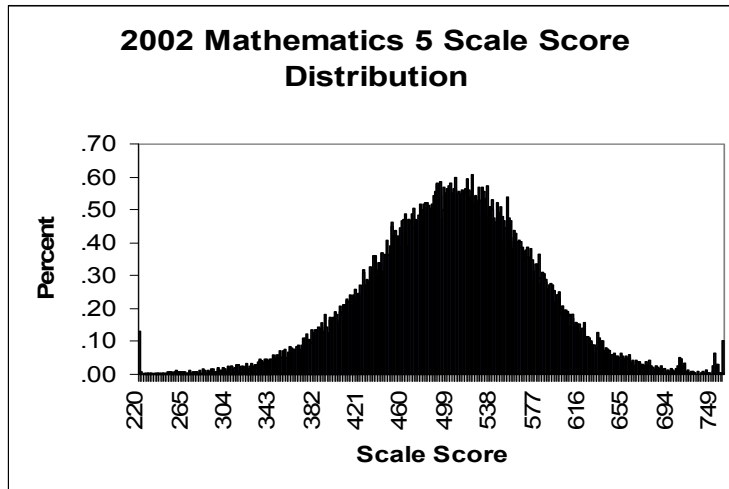
Appendix 10. Mathematics 5 Scale Score Distribution (Continued)

SS	Freq.	%	Cum. Freq.	Cum. %	SS	Freq.	%	Cum. Freq.	Cum. %	SS	Freq.	%	Cum. Freq.	Cum. %
493	341	.59	24890	43.97	539	292	.50	39421	69.65	585	163	.28	49981	88.30
494	274	.47	25164	44.46	540	277	.48	39698	70.14	586	167	.29	50148	88.60
495	331	.57	25495	45.04	541	268	.46	39966	70.61	587	151	.26	50299	88.87
496	290	.50	25785	45.56	542	304	.52	40270	71.15	588	138	.24	50437	89.11
497	320	.55	26105	46.12	543	272	.47	40542	71.63	589	158	.27	50595	89.39
498	313	.54	26418	46.67	544	286	.49	40828	72.13	590	160	.28	50755	89.67
499	327	.56	26745	47.25	545	296	.51	41124	72.66	591	158	.27	50913	89.95
500	332	.57	27077	47.84	546	269	.46	41393	73.13	592	148	.25	51061	90.21
501	325	.56	27402	48.41	547	279	.48	41672	73.62	593	147	.25	51208	90.47
502	338	.58	27740	49.01	548	270	.46	41942	74.10	594	127	.22	51335	90.70
503	320	.55	28060	49.58	549	237	.41	42179	74.52	595	120	.21	51455	90.91
504	328	.56	28388	50.15	550	260	.45	42439	74.98	596	141	.24	51596	91.16
505	326	.56	28714	50.73	551	249	.43	42688	75.42	597	145	.25	51741	91.41
506	348	.60	29062	51.35	552	312	.54	43000	75.97	598	132	.23	51873	91.65
507	317	.55	29379	51.91	553	275	.47	43275	76.46	599	105	.18	51978	91.83
508	323	.56	29702	52.48	554	242	.42	43517	76.88	600	121	.21	52099	92.05
509	321	.55	30023	53.04	555	271	.47	43788	77.36	601	109	.19	52208	92.24
510	319	.55	30342	53.61	556	223	.38	44011	77.76	602	113	.19	52321	92.44
511	309	.53	30651	54.15	557	233	.40	44244	78.17	603	113	.19	52434	92.64
512	326	.56	30977	54.73	558	254	.44	44498	78.62	604	108	.19	52542	92.83
513	324	.56	31301	55.30	559	249	.43	44747	79.06	605	110	.19	52652	93.02
514	328	.56	31629	55.88	560	232	.40	44979	79.47	606	107	.18	52759	93.21
515	321	.55	31950	56.45	561	234	.40	45213	79.88	607	104	.18	52863	93.40
516	346	.60	32296	57.06	562	236	.41	45449	80.30	608	87	.15	52950	93.55
517	324	.56	32620	57.63	563	233	.40	45682	80.71	609	98	.17	53048	93.72
518	326	.56	32946	58.21	564	224	.39	45906	81.10	610	106	.18	53154	93.91
519	314	.54	33260	58.76	565	224	.39	46130	81.50	611	83	.14	53237	94.06
520	302	.52	33562	59.30	566	218	.38	46348	81.89	612	90	.15	53327	94.22
521	352	.61	33914	59.92	567	205	.35	46553	82.25	613	91	.16	53418	94.38
522	294	.51	34208	60.44	568	219	.38	46772	82.63	614	88	.15	53506	94.53
523	312	.54	34520	60.99	569	224	.39	46996	83.03	615	89	.15	53595	94.69
524	315	.54	34835	61.54	570	206	.35	47202	83.39	616	70	.12	53665	94.81
525	306	.53	35141	62.09	571	206	.35	47408	83.76	617	77	.13	53742	94.95
526	330	.57	35471	62.67	572	223	.38	47631	84.15	618	81	.14	53823	95.09
527	308	.53	35779	63.21	573	173	.30	47804	84.46	619	90	.15	53913	95.25
528	306	.53	36085	63.75	574	201	.35	48005	84.81	620	71	.12	53984	95.38
529	331	.57	36416	64.34	575	183	.31	48188	85.14	621	66	.11	54050	95.49
530	276	.47	36692	64.83	576	166	.29	48354	85.43	622	67	.12	54117	95.61
531	322	.55	37014	65.39	577	196	.34	48550	85.78	623	66	.11	54183	95.73
532	287	.49	37301	65.90	578	194	.33	48744	86.12	624	65	.11	54248	95.84
533	310	.53	37611	66.45	579	211	.36	48955	86.49	625	60	.10	54308	95.95
534	334	.57	37945	67.04	580	170	.29	49125	86.79	626	57	.10	54365	96.05
535	297	.51	38242	67.56	581	160	.28	49285	87.07	627	51	.09	54416	96.14
536	282	.49	38524	68.06	582	181	.31	49466	87.39	628	47	.08	54463	96.22
537	297	.51	38821	68.59	583	174	.30	49640	87.70	629	53	.09	54516	96.32
538	308	.53	39129	69.13	584	178	.31	49818	88.02	630	40	.07	54556	96.39

Appendix 10. Mathematics 5 Scale Score Distribution (Continued)

SS	Freq.	%	Cum. Freq.	Cum. %	SS	Freq.	%	Cum. Freq.	Cum. %	SS	Freq.	%	Cum. Freq.	Cum. %
631	73	.13	54629	96.52	669	20	.03	55891	98.75	707	3	.01	56347	99.55
632	46	.08	54675	96.60	670	18	.03	55909	98.78	708	20	.03	56367	99.59
633	63	.11	54738	96.71	671	14	.02	55923	98.80	709	1	.00	56368	99.59
634	60	.10	54798	96.81	672	17	.03	55940	98.83	710	4	.01	56372	99.60
635	41	.07	54839	96.89	673	15	.03	55955	98.86	711	3	.01	56375	99.60
636	58	.10	54897	96.99	674	15	.03	55970	98.89	712	8	.01	56383	99.61
637	41	.07	54938	97.06	675	21	.04	55991	98.92	713	2	.00	56385	99.62
638	36	.06	54974	97.13	676	17	.03	56008	98.95	714	2	.00	56387	99.62
639	48	.08	55022	97.21	677	25	.04	56033	99.00	715	5	.01	56392	99.63
640	45	.08	55067	97.29	678	16	.03	56049	99.02	717	6	.01	56398	99.64
641	37	.06	55104	97.36	679	14	.02	56063	99.05	718	2	.00	56400	99.64
642	42	.07	55146	97.43	680	11	.02	56074	99.07	719	3	.01	56403	99.65
643	35	.06	55181	97.49	681	12	.02	56086	99.09	721	1	.00	56404	99.65
644	34	.06	55215	97.55	682	7	.01	56093	99.10	724	1	.00	56405	99.65
645	35	.06	55250	97.61	683	15	.03	56108	99.13	725	6	.01	56411	99.66
646	27	.05	55277	97.66	684	9	.02	56117	99.14	729	1	.00	56412	99.67
647	38	.07	55315	97.73	685	12	.02	56129	99.17	730	1	.00	56413	99.67
648	33	.06	55348	97.79	686	9	.02	56138	99.18	733	2	.00	56415	99.67
649	30	.05	55378	97.84	687	8	.01	56146	99.20	735	5	.01	56420	99.68
650	32	.06	55410	97.90	688	16	.03	56162	99.22	738	3	.01	56423	99.69
651	30	.05	55440	97.95	689	7	.01	56169	99.24	739	8	.01	56431	99.70
652	36	.06	55476	98.01	690	7	.01	56176	99.25	740	3	.01	56434	99.70
653	31	.05	55507	98.07	691	10	.02	56186	99.27	742	2	.00	56436	99.71
654	21	.04	55528	98.10	692	6	.01	56192	99.28	743	3	.01	56439	99.71
655	27	.05	55555	98.15	693	4	.01	56196	99.28	746	1	.00	56440	99.72
656	31	.05	55586	98.21	694	8	.01	56204	99.30	747	1	.00	56441	99.72
657	29	.05	55615	98.26	695	4	.01	56208	99.31	749	14	.02	56455	99.74
658	26	.04	55641	98.30	696	5	.01	56213	99.31	752	5	.01	56460	99.75
659	34	.06	55675	98.36	697	10	.02	56223	99.33	753	36	.06	56496	99.81
660	29	.05	55704	98.42	698	8	.01	56231	99.35	754	18	.03	56514	99.85
661	20	.03	55724	98.45	699	5	.01	56236	99.36	757	3	.01	56517	99.85
662	21	.04	55745	98.49	700	6	.01	56242	99.37	758	17	.03	56534	99.88
663	24	.04	55769	98.53	701	10	.02	56252	99.38	761	1	.00	56535	99.88
664	15	.03	55784	98.56	702	14	.02	56266	99.41	762	3	.01	56538	99.89
665	18	.03	55802	98.59	703	8	.01	56274	99.42	767	2	.00	56540	99.89
666	25	.04	55827	98.63	704	29	.05	56303	99.47	771	3	.01	56543	99.90
667	22	.04	55849	98.67	705	14	.02	56317	99.50	800	58	.10	56601	100.00
668	22	.04	55871	98.71	706	27	.05	56344	99.55					

Figure 10. Mathematics 5 Scale Score Distributions for the Total Population, Female, and Male Students



Appendix 9. Writing 5 Scale Score Distribution

(SS = Scale Score, Freq. = Frequency, Cum. = Cumulative)

SS	Freq.	%	Cum. Freq	Cum. %	SS	Freq.	%	Cum. Freq	Cum. %	SS	Freq.	%	Cum. Freq	Cum. %
220	5	.01	5	.01	301	2	.00	73	.13	345	17	.03	279	.49
228	1	.00	6	.01	302	2	.00	75	.13	346	7	.01	286	.51
234	2	.00	8	.01	303	1	.00	76	.13	347	11	.02	297	.53
237	1	.00	9	.02	304	3	.01	79	.14	348	9	.02	306	.54
238	1	.00	10	.02	305	5	.01	84	.15	349	9	.02	315	.56
240	1	.00	11	.02	306	2	.00	86	.15	350	13	.02	328	.58
243	1	.00	12	.02	307	2	.00	88	.16	351	7	.01	335	.59
244	1	.00	13	.02	308	3	.01	91	.16	352	16	.03	351	.62
245	1	.00	14	.02	309	4	.01	95	.17	353	13	.02	364	.65
249	3	.01	17	.03	310	3	.01	98	.17	354	24	.04	388	.69
251	1	.00	18	.03	311	2	.00	100	.18	355	14	.02	402	.71
252	1	.00	19	.03	312	2	.00	102	.18	356	22	.04	424	.75
253	1	.00	20	.04	313	2	.00	104	.18	357	16	.03	440	.78
255	1	.00	21	.04	314	2	.00	106	.19	358	12	.02	452	.80
260	1	.00	22	.04	315	2	.00	108	.19	359	13	.02	465	.82
261	1	.00	23	.04	316	5	.01	113	.20	360	26	.04	491	.87
263	2	.00	25	.04	317	5	.01	118	.21	361	13	.02	504	.89
264	1	.00	26	.05	319	2	.00	120	.21	362	19	.03	523	.93
265	1	.00	27	.05	320	8	.01	128	.23	363	26	.04	549	.97
266	1	.00	28	.05	321	2	.00	130	.23	364	19	.03	568	1.01
267	3	.01	31	.05	322	2	.00	132	.23	365	19	.03	587	1.04
268	2	.00	33	.06	323	5	.01	137	.24	366	16	.03	603	1.07
277	1	.00	34	.06	324	3	.01	140	.25	367	32	.06	635	1.13
278	1	.00	35	.06	325	3	.01	143	.25	368	24	.04	659	1.17
280	2	.00	37	.07	326	4	.01	147	.26	369	29	.05	688	1.22
281	2	.00	39	.07	327	3	.01	150	.27	370	25	.04	713	1.26
283	1	.00	40	.07	328	4	.01	154	.27	371	28	.05	741	1.31
284	4	.01	44	.08	329	6	.01	160	.28	372	35	.06	776	1.38
285	3	.01	47	.08	330	3	.01	163	.29	373	24	.04	800	1.42
286	2	.00	49	.09	331	4	.01	167	.30	374	22	.04	822	1.46
287	1	.00	50	.09	332	4	.01	171	.30	375	51	.09	873	1.55
288	3	.01	53	.09	333	7	.01	178	.32	376	36	.06	909	1.61
290	1	.00	54	.10	334	4	.01	182	.32	377	44	.08	953	1.69
291	2	.00	56	.10	335	10	.02	192	.34	378	38	.07	991	1.76
292	1	.00	57	.10	336	4	.01	196	.35	379	33	.06	1024	1.82
293	2	.00	59	.10	337	12	.02	208	.37	380	50	.09	1074	1.90
294	2	.00	61	.11	338	6	.01	214	.38	381	45	.08	1119	1.98
295	1	.00	62	.11	339	6	.01	220	.39	382	35	.06	1154	2.05
296	2	.00	64	.11	340	8	.01	228	.40	383	52	.09	1206	2.14
297	1	.00	65	.12	341	5	.01	233	.41	384	52	.09	1258	2.23
298	2	.00	67	.12	342	11	.02	244	.43	385	53	.09	1311	2.32
299	3	.01	70	.12	343	11	.02	255	.45	386	47	.08	1358	2.41
300	1	.00	71	.13	344	7	.01	262	.46	387	39	.07	1397	2.48

Appendix 9. Writing 5 Scale Score Distribution (Continued)

SS	Freq.	%	Cum. Freq	Cum. %	SS	Freq.	%	Cum. Freq	Cum. %	SS	Freq.	%	Cum. Freq	Cum. %
388	58	.10	1455	2.58	434	195	.34	6901	12.24	480	406	.70	20295	35.99
389	48	.08	1503	2.67	435	203	.35	7104	12.60	481	375	.65	20670	36.65
390	55	.09	1558	2.76	436	212	.36	7316	12.97	482	376	.65	21046	37.32
391	72	.12	1630	2.89	437	219	.38	7535	13.36	483	373	.64	21419	37.98
392	65	.11	1695	3.01	438	220	.38	7755	13.75	484	378	.65	21797	38.65
393	67	.12	1762	3.12	439	194	.33	7949	14.10	485	342	.59	22139	39.26
394	58	.10	1820	3.23	440	196	.34	8145	14.44	486	398	.68	22537	39.96
395	63	.11	1883	3.34	441	260	.45	8405	14.90	487	412	.71	22949	40.69
396	80	.14	1963	3.48	442	247	.42	8652	15.34	488	412	.71	23361	41.42
397	85	.15	2048	3.63	443	236	.41	8888	15.76	489	390	.67	23751	42.12
398	74	.13	2122	3.76	444	223	.38	9111	16.16	490	434	.75	24185	42.89
399	70	.12	2192	3.89	445	224	.39	9335	16.55	491	395	.68	24580	43.59
400	77	.13	2269	4.02	446	246	.42	9581	16.99	492	395	.68	24975	44.29
401	90	.15	2359	4.18	447	250	.43	9831	17.43	493	375	.65	25350	44.95
402	93	.16	2452	4.35	448	241	.41	10072	17.86	494	415	.71	25765	45.69
403	73	.13	2525	4.48	449	244	.42	10316	18.29	495	411	.71	26176	46.42
404	94	.16	2619	4.64	450	227	.39	10543	18.69	496	466	.80	26642	47.24
405	111	.19	2730	4.84	451	248	.43	10791	19.13	497	388	.67	27030	47.93
406	119	.20	2849	5.05	452	284	.49	11075	19.64	498	391	.67	27421	48.62
407	98	.17	2947	5.23	453	260	.45	11335	20.10	499	449	.77	27870	49.42
408	123	.21	3070	5.44	454	283	.49	11618	20.60	500	390	.67	28260	50.11
409	109	.19	3179	5.64	455	278	.48	11896	21.09	501	376	.65	28636	50.78
410	106	.18	3285	5.82	456	228	.39	12124	21.50	502	384	.66	29020	51.46
411	112	.19	3397	6.02	457	322	.55	12446	22.07	503	446	.77	29466	52.25
412	102	.18	3499	6.20	458	310	.53	12756	22.62	504	426	.73	29892	53.00
413	146	.25	3645	6.46	459	303	.52	13059	23.16	505	448	.77	30340	53.80
414	122	.21	3767	6.68	460	316	.54	13375	23.72	506	440	.76	30780	54.58
415	129	.22	3896	6.91	461	306	.53	13681	24.26	507	369	.63	31149	55.23
416	111	.19	4007	7.11	462	303	.52	13984	24.80	508	357	.61	31506	55.87
417	125	.22	4132	7.33	463	320	.55	14304	25.36	509	403	.69	31909	56.58
418	145	.25	4277	7.58	464	310	.53	14614	25.91	510	415	.71	32324	57.32
419	143	.25	4420	7.84	465	308	.53	14922	26.46	511	369	.63	32693	57.97
420	153	.26	4573	8.11	466	374	.64	15296	27.12	512	445	.77	33138	58.76
421	151	.26	4724	8.38	467	307	.53	15603	27.67	513	416	.72	33554	59.50
422	136	.23	4860	8.62	468	331	.57	15934	28.25	514	412	.71	33966	60.23
423	142	.24	5002	8.87	469	357	.61	16291	28.89	515	424	.73	34390	60.98
424	165	.28	5167	9.16	470	350	.60	16641	29.51	516	389	.67	34779	61.67
425	166	.29	5333	9.46	471	345	.59	16986	30.12	517	412	.71	35191	62.40
426	150	.26	5483	9.72	472	339	.58	17325	30.72	518	417	.72	35608	63.14
427	154	.26	5637	10.00	473	378	.65	17703	31.39	519	358	.62	35966	63.78
428	176	.30	5813	10.31	474	381	.66	18084	32.07	520	389	.67	36355	64.46
429	179	.31	5992	10.63	475	366	.63	18450	32.72	521	368	.63	36723	65.12
430	187	.32	6179	10.96	476	351	.60	18801	33.34	522	386	.66	37109	65.80
431	180	.31	6359	11.28	477	353	.61	19154	33.96	523	406	.70	37515	66.52
432	163	.28	6522	11.56	478	393	.68	19547	34.66	524	391	.67	37906	67.22
433	184	.32	6706	11.89	479	342	.59	19889	35.27	525	359	.62	38265	67.85

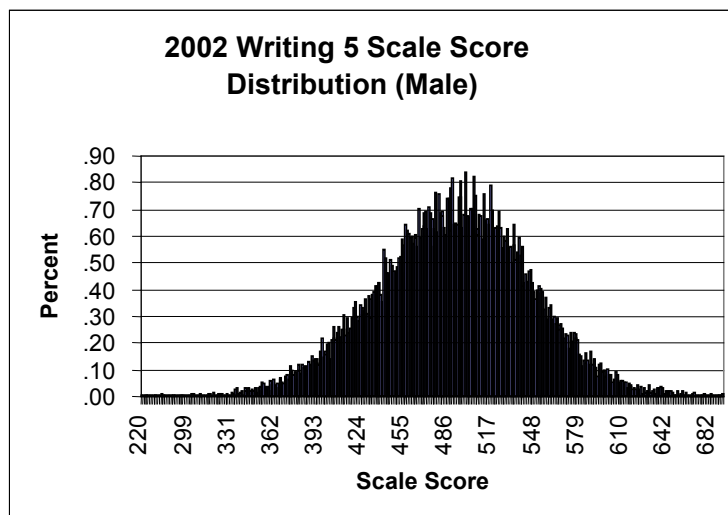
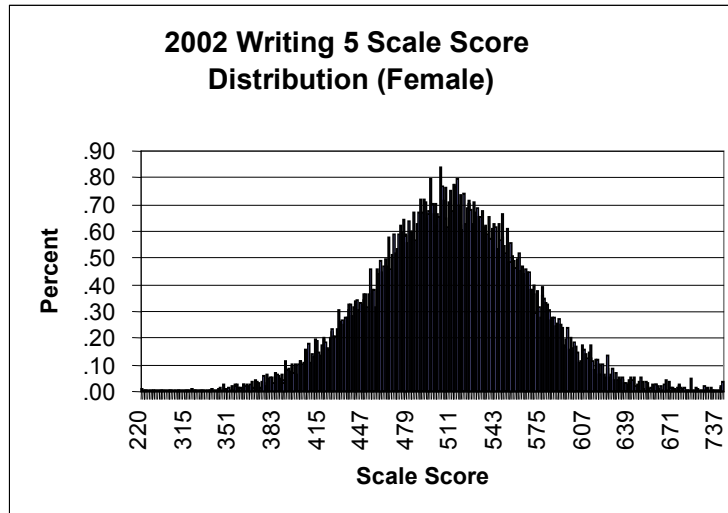
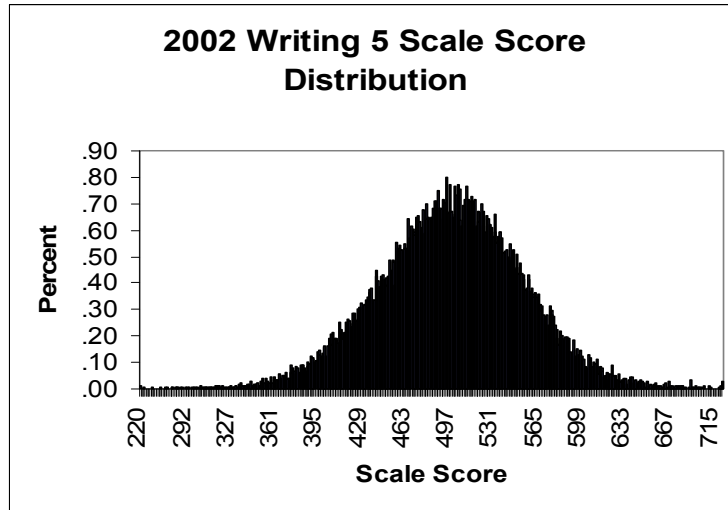
Appendix 9. Writing 5 Scale Score Distribution (Continued)

SS	Freq.	%	Cum. Freq	Cum. %	SS	Freq.	%	Cum. Freq	Cum. %	SS	Freq.	%	Cum. Freq	Cum. %
526	343	.59	38608	68.46	572	153	.26	51201	90.79	618	27	.05	55404	98.24
527	379	.65	38987	69.13	573	160	.28	51361	91.07	619	29	.05	55433	98.29
528	363	.62	39350	69.78	574	162	.28	51523	91.36	620	37	.06	55470	98.36
529	373	.64	39723	70.44	575	139	.24	51662	91.61	621	31	.05	55501	98.41
530	360	.62	40083	71.08	576	182	.31	51844	91.93	622	21	.04	55522	98.45
531	353	.61	40436	71.70	577	173	.30	52017	92.24	623	32	.06	55554	98.51
532	335	.58	40771	72.30	578	164	.28	52181	92.53	624	51	.09	55605	98.60
533	383	.66	41154	72.97	579	158	.27	52339	92.81	625	19	.03	55624	98.63
534	344	.59	41498	73.58	580	139	.24	52478	93.05	626	28	.05	55652	98.68
535	322	.55	41820	74.16	581	131	.23	52609	93.29	627	30	.05	55682	98.74
536	336	.58	42156	74.75	582	111	.19	52720	93.48	628	18	.03	55700	98.77
537	344	.59	42500	75.36	583	98	.17	52818	93.66	629	19	.03	55719	98.80
538	343	.59	42843	75.97	584	126	.22	52944	93.88	630	33	.06	55752	98.86
539	330	.57	43173	76.55	585	116	.20	53060	94.09	631	17	.03	55769	98.89
540	298	.51	43471	77.08	586	109	.19	53169	94.28	632	21	.04	55790	98.93
541	303	.52	43774	77.62	587	108	.19	53277	94.47	633	22	.04	55812	98.97
542	288	.50	44062	78.13	588	115	.20	53392	94.68	634	16	.03	55828	98.99
543	304	.52	44366	78.67	589	113	.19	53505	94.88	635	24	.04	55852	99.04
544	290	.50	44656	79.18	590	112	.19	53617	95.07	636	10	.02	55862	99.05
545	320	.55	44976	79.75	591	110	.19	53727	95.27	637	18	.03	55880	99.09
546	284	.49	45260	80.26	592	81	.14	53808	95.41	638	18	.03	55898	99.12
547	289	.50	45549	80.77	593	77	.13	53885	95.55	639	25	.04	55923	99.16
548	305	.52	45854	81.31	594	83	.14	53968	95.70	640	25	.04	55948	99.21
549	263	.45	46117	81.77	595	106	.18	54074	95.88	641	13	.02	55961	99.23
550	265	.46	46382	82.24	596	73	.13	54147	96.01	642	15	.03	55976	99.26
551	296	.51	46678	82.77	597	87	.15	54234	96.17	643	21	.04	55997	99.29
552	254	.44	46932	83.22	598	76	.13	54310	96.30	644	12	.02	56009	99.32
553	277	.48	47209	83.71	599	63	.11	54373	96.41	645	15	.03	56024	99.34
554	254	.44	47463	84.16	600	83	.14	54456	96.56	646	18	.03	56042	99.37
555	241	.41	47704	84.59	601	72	.12	54528	96.69	647	11	.02	56053	99.39
556	249	.43	47953	85.03	602	65	.11	54593	96.80	648	17	.03	56070	99.42
557	217	.37	48170	85.42	603	45	.08	54638	96.88	649	13	.02	56083	99.45
558	220	.38	48390	85.81	604	49	.08	54687	96.97	650	4	.01	56087	99.45
559	239	.41	48629	86.23	605	46	.08	54733	97.05	651	17	.03	56104	99.48
560	249	.43	48878	86.67	606	76	.13	54809	97.19	652	12	.02	56116	99.51
561	214	.37	49092	87.05	607	68	.12	54877	97.31	653	8	.01	56124	99.52
562	222	.38	49314	87.44	608	56	.10	54933	97.41	654	10	.02	56134	99.54
563	207	.36	49521	87.81	609	50	.09	54983	97.50	655	6	.01	56140	99.55
564	203	.35	49724	88.17	610	59	.10	55042	97.60	656	9	.02	56149	99.56
565	210	.36	49934	88.54	611	54	.09	55096	97.70	657	2	.00	56151	99.57
566	202	.35	50136	88.90	612	65	.11	55161	97.81	658	12	.02	56163	99.59
567	209	.36	50345	89.27	613	49	.08	55210	97.90	659	8	.01	56171	99.60
568	184	.32	50529	89.60	614	32	.06	55242	97.96	660	7	.01	56178	99.62
569	173	.30	50702	89.91	615	48	.08	55290	98.04	661	4	.01	56182	99.62
570	182	.31	50884	90.23	616	47	.08	55337	98.12	662	6	.01	56188	99.63
571	164	.28	51048	90.52	617	40	.07	55377	98.19	663	2	.00	56190	99.64

Appendix 9. Writing 5 Scale Score Distribution (Continued)

SS	Freq.	%	Cum. Freq	Cum. %	SS	Freq.	%	Cum. Freq	Cum. %	SS	Freq.	%	Cum. Freq	Cum. %
664	2	.00	56192	99.64	681	2	.00	56294	99.82	709	1	.00	56351	99.92
665	11	.02	56203	99.66	682	2	.00	56296	99.82	711	1	.00	56352	99.92
666	12	.02	56215	99.68	684	1	.00	56297	99.83	712	1	.00	56353	99.93
667	2	.00	56217	99.68	685	1	.00	56298	99.83	713	5	.01	56358	99.93
668	16	.03	56233	99.71	687	2	.00	56300	99.83	714	1	.00	56359	99.94
669	4	.01	56237	99.72	688	18	.03	56318	99.86	715	4	.01	56363	99.94
670	6	.01	56243	99.73	689	2	.00	56320	99.87	718	1	.00	56364	99.95
671	6	.01	56249	99.74	691	2	.00	56322	99.87	719	1	.00	56365	99.95
672	4	.01	56253	99.75	695	2	.00	56324	99.87	721	1	.00	56366	99.95
673	1	.00	56254	99.75	696	5	.01	56329	99.88	723	1	.00	56367	99.95
674	6	.01	56260	99.76	697	2	.00	56331	99.89	737	1	.00	56368	99.95
675	7	.01	56267	99.77	698	3	.01	56334	99.89	738	2	.00	56370	99.96
676	8	.01	56275	99.79	699	4	.01	56338	99.90	749	4	.01	56374	99.96
677	5	.01	56280	99.80	700	2	.00	56340	99.90	773	6	.01	56380	99.97
678	6	.01	56286	99.81	702	3	.01	56343	99.91	780	15	.03	56395	100.00
679	6	.01	56292	99.82	704	7	.01	56350	99.92					

Figure 9. Writing 5 Scale Score Distributions for the Total Population, Female, and Male Students



Appendix 8. Reading 5 Scale Score Distribution

(SS = Scale Score, Freq. = Frequency, Cum. = Cumulative)

SS	Freq.	%	Cum. Freq.	Cum. %	SS	Freq.	%	Cum. Freq.	Cum. %	SS	Freq.	%	Cum. Freq.	Cum. %
220	127	.22	127	.23	334	1	.00	215	.38	380	4	.01	351	.62
260	1	.00	128	.23	335	2	.00	217	.39	381	7	.01	358	.64
262	1	.00	129	.23	336	4	.01	221	.39	382	4	.01	362	.64
263	2	.00	131	.23	337	3	.01	224	.40	383	4	.01	366	.65
266	1	.00	132	.23	338	1	.00	225	.40	384	3	.01	369	.66
272	1	.00	133	.24	340	3	.01	228	.40	385	5	.01	374	.66
273	2	.00	135	.24	341	3	.01	231	.41	386	6	.01	380	.67
276	1	.00	136	.24	342	2	.00	233	.41	387	2	.00	382	.68
277	1	.00	137	.24	343	3	.01	236	.42	388	5	.01	387	.69
285	1	.00	138	.25	344	2	.00	238	.42	389	4	.01	391	.69
290	1	.00	139	.25	345	7	.01	245	.44	390	8	.01	399	.71
292	1	.00	140	.25	346	2	.00	247	.44	391	28	.05	427	.76
294	2	.00	142	.25	347	3	.01	250	.44	392	3	.01	430	.76
295	1	.00	143	.25	348	3	.01	253	.45	393	4	.01	434	.77
296	1	.00	144	.26	349	3	.01	256	.45	394	2	.00	436	.77
297	1	.00	145	.26	350	1	.00	257	.46	395	7	.01	443	.79
302	2	.00	147	.26	351	1	.00	258	.46	396	7	.01	450	.80
303	2	.00	149	.26	353	6	.01	264	.47	397	12	.02	462	.82
304	1	.00	150	.27	354	4	.01	268	.48	398	4	.01	466	.83
306	1	.00	151	.27	356	1	.00	269	.48	399	8	.01	474	.84
308	3	.01	154	.27	357	5	.01	274	.49	400	10	.02	484	.86
310	3	.01	157	.28	358	2	.00	276	.49	401	8	.01	492	.87
311	2	.00	159	.28	359	1	.00	277	.49	402	7	.01	499	.89
313	4	.01	163	.29	360	2	.00	279	.50	403	7	.01	506	.90
314	2	.00	165	.29	361	3	.01	282	.50	404	6	.01	512	.91
315	2	.00	167	.30	362	1	.00	283	.50	405	10	.02	522	.93
316	2	.00	169	.30	363	6	.01	289	.51	406	5	.01	527	.94
317	1	.00	170	.30	364	2	.00	291	.52	407	10	.02	537	.95
318	1	.00	171	.30	365	3	.01	294	.52	408	36	.06	573	1.02
319	3	.01	174	.31	366	7	.01	301	.53	409	8	.01	581	1.03
320	3	.01	177	.31	367	2	.00	303	.54	410	13	.02	594	1.05
321	3	.01	180	.32	368	3	.01	306	.54	411	5	.01	599	1.06
322	1	.00	181	.32	369	2	.00	308	.55	412	7	.01	606	1.08
323	2	.00	183	.32	370	3	.01	311	.55	413	10	.02	616	1.09
324	2	.00	185	.33	371	5	.01	316	.56	414	10	.02	626	1.11
325	5	.01	190	.34	372	2	.00	318	.56	415	13	.02	639	1.13
326	3	.01	193	.34	373	2	.00	320	.57	416	13	.02	652	1.16
327	2	.00	195	.35	374	6	.01	326	.58	417	5	.01	657	1.17
328	2	.00	197	.35	375	3	.01	329	.58	418	16	.03	673	1.20
329	5	.01	202	.36	376	7	.01	336	.60	419	6	.01	679	1.21
331	6	.01	208	.37	377	4	.01	340	.60	420	13	.02	692	1.23
332	4	.01	212	.38	378	3	.01	343	.61	421	34	.06	726	1.29
333	2	.00	214	.38	379	4	.01	347	.62	422	13	.02	739	1.31

Appendix 8. Reading 5 Scale Score Distribution (Continued)

SS	Freq.	%	Cum. Freq.	Cum. %	SS	Freq.	%	Cum. Freq.	Cum. %	SS	Freq.	%	Cum. Freq.	Cum. %
423	15	.03	754	1.34	469	28	.05	1939	3.44	515	100	.17	5137	9.12
424	13	.02	767	1.36	470	35	.06	1974	3.51	516	119	.20	5256	9.33
425	13	.02	780	1.39	471	38	.07	2012	3.57	517	101	.17	5357	9.51
426	16	.03	796	1.41	472	48	.08	2060	3.66	518	104	.18	5461	9.70
427	17	.03	813	1.44	473	72	.12	2132	3.79	519	107	.18	5568	9.89
428	21	.04	834	1.48	474	51	.09	2183	3.88	520	103	.18	5671	10.07
429	13	.02	847	1.50	475	56	.10	2239	3.98	521	99	.17	5770	10.25
430	16	.03	863	1.53	476	54	.09	2293	4.07	522	117	.20	5887	10.45
431	19	.03	882	1.57	477	47	.08	2340	4.16	523	128	.22	6015	10.68
432	32	.06	914	1.62	478	63	.11	2403	4.27	524	119	.20	6134	10.89
433	18	.03	932	1.66	479	48	.08	2451	4.35	525	134	.23	6268	11.13
434	15	.03	947	1.68	480	56	.10	2507	4.45	526	130	.22	6398	11.36
435	11	.02	958	1.70	481	38	.07	2545	4.52	527	126	.22	6524	11.59
436	17	.03	975	1.73	482	50	.09	2595	4.61	528	132	.23	6656	11.82
437	19	.03	994	1.77	483	51	.09	2646	4.70	529	158	.27	6814	12.10
438	17	.03	1011	1.80	484	57	.10	2703	4.80	530	125	.22	6939	12.32
439	21	.04	1032	1.83	485	59	.10	2762	4.90	531	132	.23	7071	12.56
440	25	.04	1057	1.88	486	48	.08	2810	4.99	532	151	.26	7222	12.82
441	31	.05	1088	1.93	487	64	.11	2874	5.10	533	151	.26	7373	13.09
442	26	.04	1114	1.98	488	60	.10	2934	5.21	534	125	.22	7498	13.31
443	21	.04	1135	2.02	489	61	.10	2995	5.32	535	150	.26	7648	13.58
444	22	.04	1157	2.05	490	66	.11	3061	5.44	536	147	.25	7795	13.84
445	33	.06	1190	2.11	491	69	.12	3130	5.56	537	178	.31	7973	14.16
446	28	.05	1218	2.16	492	52	.09	3182	5.65	538	165	.28	8138	14.45
447	29	.05	1247	2.21	493	67	.12	3249	5.77	539	159	.27	8297	14.73
448	15	.03	1262	2.24	494	63	.11	3312	5.88	540	131	.23	8428	14.97
449	30	.05	1292	2.29	495	70	.12	3382	6.01	541	182	.31	8610	15.29
450	32	.06	1324	2.35	496	76	.13	3458	6.14	542	168	.29	8778	15.59
451	21	.04	1345	2.39	497	82	.14	3540	6.29	543	159	.27	8937	15.87
452	24	.04	1369	2.43	498	80	.14	3620	6.43	544	148	.25	9085	16.13
453	23	.04	1392	2.47	499	62	.11	3682	6.54	545	159	.27	9244	16.42
454	26	.04	1418	2.52	500	86	.15	3768	6.69	546	174	.30	9418	16.72
455	25	.04	1443	2.56	501	84	.14	3852	6.84	547	177	.30	9595	17.04
456	27	.05	1470	2.61	502	95	.16	3947	7.01	548	190	.33	9785	17.38
457	40	.07	1510	2.68	503	85	.15	4032	7.16	549	190	.33	9975	17.71
458	31	.05	1541	2.74	504	74	.13	4106	7.29	550	213	.37	10188	18.09
459	40	.07	1581	2.81	505	80	.14	4186	7.43	551	195	.34	10383	18.44
460	38	.07	1619	2.87	506	73	.13	4259	7.56	552	209	.36	10592	18.81
461	35	.06	1654	2.94	507	114	.20	4373	7.77	553	227	.39	10819	19.21
462	30	.05	1684	2.99	508	112	.19	4485	7.96	554	217	.37	11036	19.60
463	37	.06	1721	3.06	509	88	.15	4573	8.12	555	197	.34	11233	19.95
464	35	.06	1756	3.12	510	81	.14	4654	8.26	556	211	.36	11444	20.32
465	33	.06	1789	3.18	511	91	.16	4745	8.43	557	226	.39	11670	20.72
466	46	.08	1835	3.26	512	89	.15	4834	8.58	558	199	.34	11869	21.08
467	38	.07	1873	3.33	513	99	.17	4933	8.76	559	216	.37	12085	21.46
468	38	.07	1911	3.39	514	104	.18	5037	8.94	560	226	.39	12311	21.86

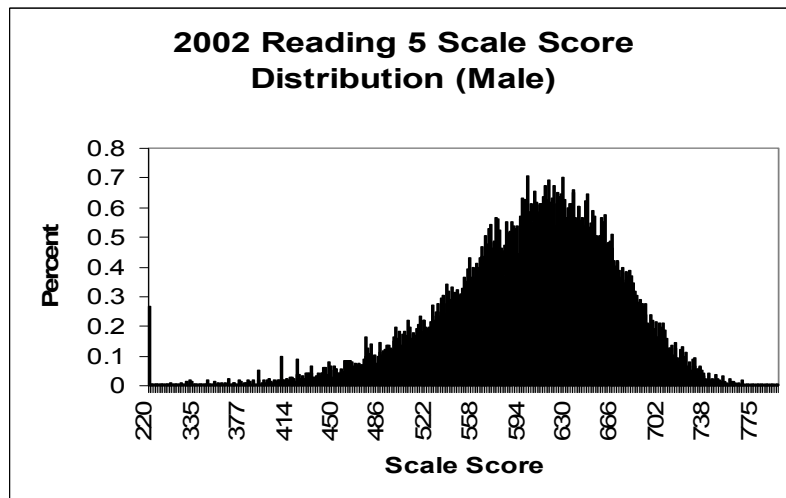
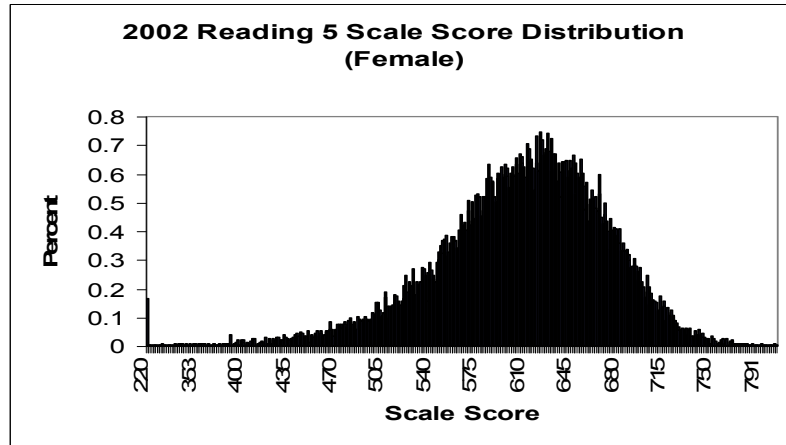
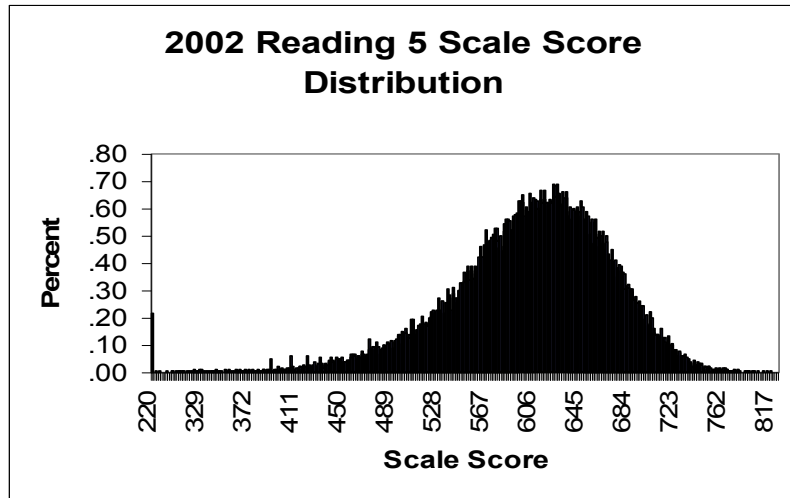
Appendix 8. Reading 5 Scale Score Distribution (Continued)

SS	Freq.	%	Cum. Freq.	Cum. %	SS	Freq.	%	Cum. Freq.	Cum. %	SS	Freq.	%	Cum. Freq.	Cum. %
561	215	.37	12526	22.24	607	346	.60	26672	47.36	653	332	.57	43194	76.70
562	225	.39	12751	22.64	608	372	.64	27044	48.02	654	294	.51	43488	77.22
563	244	.42	12995	23.08	609	368	.63	27412	48.68	655	320	.55	43808	77.79
564	269	.46	13264	23.55	610	364	.63	27776	49.32	656	327	.56	44135	78.37
565	247	.42	13511	23.99	611	348	.60	28124	49.94	657	273	.47	44408	78.86
566	244	.42	13755	24.43	612	350	.60	28474	50.56	658	326	.56	44734	79.44
567	272	.47	14027	24.91	613	367	.63	28841	51.21	659	294	.51	45028	79.96
568	256	.44	14283	25.36	614	387	.67	29228	51.90	660	287	.49	45315	80.47
569	302	.52	14585	25.90	615	362	.62	29590	52.54	661	267	.46	45582	80.94
570	278	.48	14863	26.39	616	388	.67	29978	53.23	662	299	.51	45881	81.47
571	282	.49	15145	26.89	617	368	.63	30346	53.89	663	291	.50	46172	81.99
572	262	.45	15407	27.36	618	363	.62	30709	54.53	664	299	.51	46471	82.52
573	289	.50	15696	27.87	619	354	.61	31063	55.16	665	274	.47	46745	83.01
574	294	.51	15990	28.39	620	363	.62	31426	55.80	666	260	.45	47005	83.47
575	286	.49	16276	28.90	621	367	.63	31793	56.46	667	290	.50	47295	83.98
576	306	.53	16582	29.45	622	366	.63	32159	57.11	668	277	.48	47572	84.48
577	306	.53	16888	29.99	623	363	.62	32522	57.75	669	251	.43	47823	84.92
578	280	.48	17168	30.49	624	400	.69	32922	58.46	670	237	.41	48060	85.34
579	266	.46	17434	30.96	625	396	.68	33318	59.16	671	239	.41	48299	85.77
580	269	.46	17703	31.44	626	375	.65	33693	59.83	672	262	.45	48561	86.23
581	290	.50	17993	31.95	627	400	.69	34093	60.54	673	236	.41	48797	86.65
582	259	.45	18252	32.41	628	382	.66	34475	61.22	674	216	.37	49013	87.04
583	300	.52	18552	32.94	629	379	.65	34854	61.89	675	240	.41	49253	87.46
584	318	.55	18870	33.51	630	356	.61	35210	62.52	676	202	.35	49455	87.82
585	326	.56	19196	34.09	631	383	.66	35593	63.20	677	224	.39	49679	88.22
586	322	.55	19518	34.66	632	357	.61	35950	63.84	678	229	.39	49908	88.62
587	326	.56	19844	35.24	633	372	.64	36322	64.50	679	227	.39	50135	89.03
588	323	.56	20167	35.81	634	383	.66	36705	65.18	680	215	.37	50350	89.41
589	304	.52	20471	36.35	635	370	.64	37075	65.84	681	213	.37	50563	89.79
590	293	.50	20764	36.87	636	332	.57	37407	66.43	682	211	.36	50774	90.16
591	332	.57	21096	37.46	637	343	.59	37750	67.03	683	178	.31	50952	90.48
592	297	.51	21393	37.99	638	351	.60	38101	67.66	684	185	.32	51137	90.81
593	336	.58	21729	38.59	639	326	.56	38427	68.24	685	186	.32	51323	91.14
594	339	.58	22068	39.19	640	349	.60	38776	68.86	686	180	.31	51503	91.46
595	365	.63	22433	39.84	641	344	.59	39120	69.47	687	176	.30	51679	91.77
596	334	.57	22767	40.43	642	342	.59	39462	70.07	688	178	.31	51857	92.09
597	366	.63	23133	41.08	643	343	.59	39805	70.68	689	170	.29	52027	92.39
598	363	.62	23496	41.72	644	352	.61	40157	71.31	690	156	.27	52183	92.66
599	379	.65	23875	42.40	645	343	.59	40500	71.92	691	160	.28	52343	92.95
600	332	.57	24207	42.99	646	366	.63	40866	72.57	692	141	.24	52484	93.20
601	344	.59	24551	43.60	647	334	.57	41200	73.16	693	147	.25	52631	93.46
602	352	.61	24903	44.22	648	352	.61	41552	73.79	694	151	.26	52782	93.73
603	341	.59	25244	44.83	649	324	.56	41876	74.36	695	135	.23	52917	93.97
604	338	.58	25582	45.43	650	326	.56	42202	74.94	696	141	.24	53058	94.22
605	381	.66	25963	46.10	651	341	.59	42543	75.55	697	122	.21	53180	94.43
606	363	.62	26326	46.75	652	319	.55	42862	76.11	698	142	.24	53322	94.69

Appendix 8. Reading 5 Scale Score Distribution (Continued)

SS	Freq.	%	Cum. Freq.	Cum. %	SS	Freq.	%	Cum. Freq.	Cum. %	SS	Freq.	%	Cum. Freq.	Cum. %
699	112	.19	53434	94.89	745	20	.03	56040	99.51	798	1	.00	56292	99.96
700	103	.18	53537	95.07	746	16	.03	56056	99.54	799	2	.00	56294	99.96
701	122	.21	53659	95.29	747	11	.02	56067	99.56	800	1	.00	56295	99.97
702	99	.17	53758	95.46	748	12	.02	56079	99.58	804	1	.00	56296	99.97
703	129	.22	53887	95.69	749	12	.02	56091	99.60	805	1	.00	56297	99.97
704	103	.18	53990	95.87	750	5	.01	56096	99.61	806	2	.00	56299	99.97
705	116	.20	54106	96.08	751	13	.02	56109	99.64	807	1	.00	56300	99.98
706	83	.14	54189	96.23	752	14	.02	56123	99.66	809	1	.00	56301	99.98
707	93	.16	54282	96.39	753	10	.02	56133	99.68	810	2	.00	56303	99.98
708	82	.14	54364	96.54	754	7	.01	56140	99.69	813	1	.00	56304	99.98
709	81	.14	54445	96.68	755	3	.01	56143	99.70	817	1	.00	56305	99.98
710	81	.14	54526	96.82	756	8	.01	56151	99.71	819	2	.00	56307	99.99
711	77	.13	54603	96.96	757	8	.01	56159	99.72	820	1	.00	56308	99.99
712	65	.11	54668	97.08	758	10	.02	56169	99.74	821	1	.00	56309	99.99
713	93	.16	54761	97.24	759	8	.01	56177	99.76	825	1	.00	56310	99.99
714	75	.13	54836	97.38	760	10	.02	56187	99.77	830	1	.00	56311	99.99
715	73	.13	54909	97.51	761	5	.01	56192	99.78	833	1	.00	56312	100.00
716	64	.11	54973	97.62	762	6	.01	56198	99.79	852	1	.00	56313	100.00
717	61	.10	55034	97.73	763	10	.02	56208	99.81	900	1	.00	56314	100.00
718	62	.11	55096	97.84	764	2	.00	56210	99.82					
719	77	.13	55173	97.97	765	10	.02	56220	99.83					
720	59	.10	55232	98.08	766	5	.01	56225	99.84					
721	58	.10	55290	98.18	767	7	.01	56232	99.85					
722	62	.11	55352	98.29	768	3	.01	56235	99.86					
723	50	.09	55402	98.38	769	4	.01	56239	99.87					
724	45	.08	55447	98.46	770	3	.01	56242	99.87					
725	47	.08	55494	98.54	771	3	.01	56245	99.88					
726	34	.06	55528	98.60	772	5	.01	56250	99.89					
727	42	.07	55570	98.68	773	4	.01	56254	99.89					
728	44	.08	55614	98.76	774	3	.01	56257	99.90					
729	36	.06	55650	98.82	775	5	.01	56262	99.91					
730	36	.06	55686	98.88	776	4	.01	56266	99.91					
731	34	.06	55720	98.95	777	3	.01	56269	99.92					
732	38	.07	55758	99.01	778	1	.00	56270	99.92					
733	30	.05	55788	99.07	779	1	.00	56271	99.92					
734	33	.06	55821	99.12	780	1	.00	56272	99.93					
735	28	.05	55849	99.17	781	1	.00	56273	99.93					
736	23	.04	55872	99.22	786	3	.01	56276	99.93					
737	15	.03	55887	99.24	787	4	.01	56280	99.94					
738	13	.02	55900	99.26	788	2	.00	56282	99.94					
739	27	.05	55927	99.31	790	2	.00	56284	99.95					
740	18	.03	55945	99.34	791	1	.00	56285	99.95					
741	17	.03	55962	99.37	792	2	.00	56287	99.95					
742	23	.04	55985	99.42	794	1	.00	56288	99.95					
743	17	.03	56002	99.45	796	2	.00	56290	99.96					
744	18	.03	56020	99.48	797	1	.00	56291	99.96					

Figure 8. Reading 5 Scale Score Distributions for the Total Population, Female, and Male Students



Appendix 7. Spanish Writing 4 Scale Score Distribution

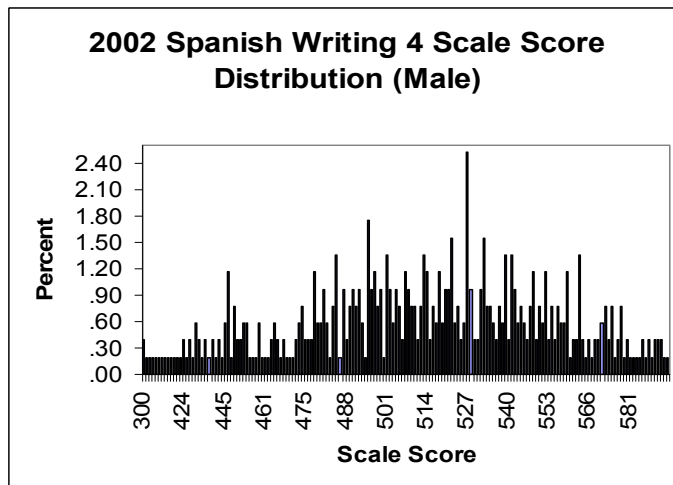
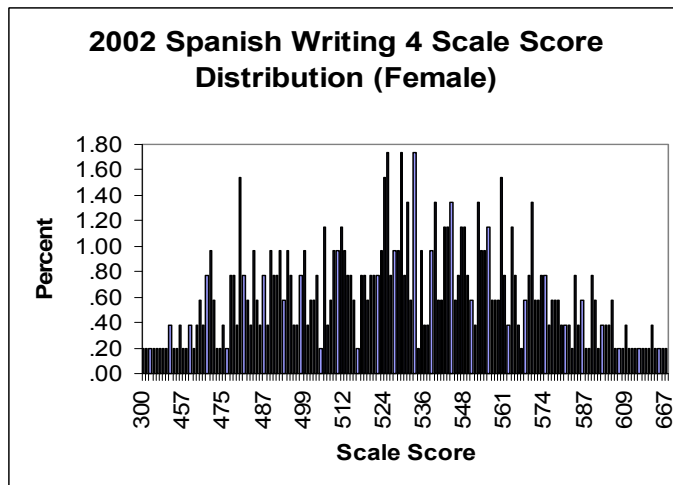
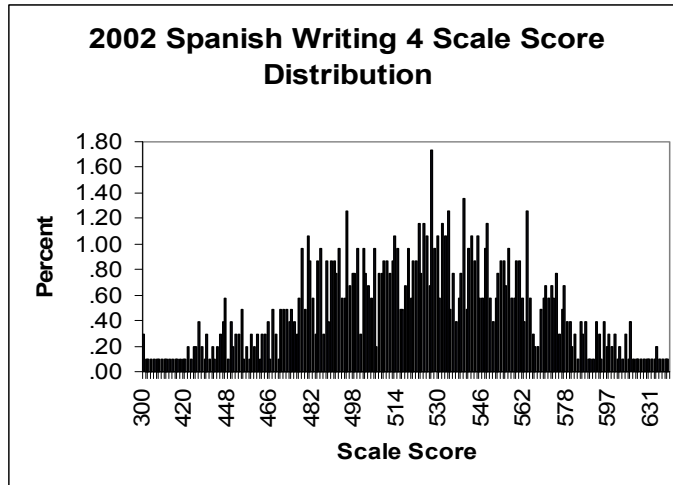
(SS = Scale Score, Freq. = Frequency, Cum. = Cumulative)

SS	Freq.	%	Cum. Freq.	Cum. %	SS	Freq.	%	Cum. Freq.	Cum. %	SS	Freq.	%	Cum. Freq.	Cum. %
300	3	.29	3	.30	461	3	.29	85	8.47	504	6	.58	350	34.90
333	1	.10	4	.40	462	1	.10	86	8.57	505	10	.97	360	35.89
336	1	.10	5	.50	463	3	.29	89	8.87	506	2	.19	362	36.09
339	1	.10	6	.60	464	3	.29	92	9.17	507	8	.77	370	36.89
353	1	.10	7	.70	465	4	.39	96	9.57	508	8	.77	378	37.69
370	1	.10	8	.80	466	1	.10	97	9.67	509	9	.87	387	38.58
379	1	.10	9	.90	467	5	.48	102	10.17	510	9	.87	396	39.48
387	1	.10	10	1.00	468	3	.29	105	10.47	511	8	.77	404	40.28
388	1	.10	11	1.10	469	1	.10	106	10.57	512	9	.87	413	41.18
399	1	.10	12	1.20	470	5	.48	111	11.07	513	11	1.06	424	42.27
403	1	.10	13	1.30	471	5	.48	116	11.57	514	10	.97	434	43.27
404	1	.10	14	1.40	472	5	.48	121	12.06	515	5	.48	439	43.77
408	1	.10	15	1.50	473	4	.39	125	12.46	516	5	.48	444	44.27
410	1	.10	16	1.60	474	5	.48	130	12.96	517	7	.68	451	44.97
414	1	.10	17	1.69	475	4	.39	134	13.36	518	10	.97	461	45.96
415	1	.10	18	1.79	476	3	.29	137	13.66	519	6	.58	467	46.56
420	1	.10	19	1.89	477	6	.58	143	14.26	520	9	.87	476	47.46
424	2	.19	21	2.09	478	10	.97	153	15.25	521	9	.87	485	48.35
425	1	.10	22	2.19	479	5	.48	158	15.75	522	12	1.16	497	49.55
429	2	.19	24	2.39	480	11	1.06	169	16.85	523	8	.77	505	50.35
431	2	.19	26	2.59	481	9	.87	178	17.75	524	12	1.16	517	51.55
434	4	.39	30	2.99	482	6	.58	184	18.34	525	11	1.06	528	52.64
436	2	.19	32	3.19	483	3	.29	187	18.64	526	7	.68	535	53.34
437	1	.10	33	3.29	484	9	.87	196	19.54	527	18	1.74	553	55.13
438	3	.29	36	3.59	485	10	.97	206	20.54	528	10	.97	563	56.13
440	1	.10	37	3.69	486	3	.29	209	20.84	529	11	1.06	574	57.23
441	2	.19	39	3.89	487	9	.87	218	21.73	530	6	.58	580	57.83
442	1	.10	40	3.99	488	4	.39	222	22.13	531	12	1.16	592	59.02
443	2	.19	42	4.19	489	9	.87	231	23.03	532	11	1.06	603	60.12
444	3	.29	45	4.49	490	9	.87	240	23.93	533	13	1.25	616	61.42
445	4	.39	49	4.89	491	8	.77	248	24.73	534	5	.48	621	61.91
446	6	.58	55	5.48	492	10	.97	258	25.72	535	8	.77	629	62.71
448	1	.10	56	5.58	493	6	.58	264	26.32	536	4	.39	633	63.11
449	4	.39	60	5.98	494	6	.58	270	26.92	537	6	.58	639	63.71
450	2	.19	62	6.18	495	13	1.25	283	28.22	538	8	.77	647	64.51
452	3	.29	65	6.48	496	7	.68	290	28.91	539	14	1.35	661	65.90
454	3	.29	68	6.78	497	8	.77	298	29.71	540	5	.48	666	66.40
455	5	.48	73	7.28	498	8	.77	306	30.51	541	10	.97	676	67.40
456	1	.10	74	7.38	499	10	.97	316	31.51	542	11	1.06	687	68.49
457	2	.19	76	7.58	500	3	.29	319	31.80	543	9	.87	696	69.39
458	1	.10	77	7.68	501	10	.97	329	32.80	544	11	1.06	707	70.49
459	3	.29	80	7.98	502	8	.77	337	33.60	545	6	.58	713	71.09
460	2	.19	82	8.18	503	7	.68	344	34.30	546	6	.58	719	71.68

Appendix 7. Spanish Writing 4 Scale Score Distribution (Continued)

SS	Freq.	%	Cum. Freq.	Cum. %	SS	Freq.	%	Cum. Freq.	Cum. %	SS	Freq.	%	Cum. Freq.	Cum. %
547	10	.97	729	72.68	571	6	.58	890	88.73	599	2	.19	973	97.01
548	12	1.16	741	73.88	572	7	.68	897	89.43	601	3	.29	976	97.31
549	6	.58	747	74.48	573	6	.58	903	90.03	602	1	.10	977	97.41
550	4	.39	751	74.88	574	8	.77	911	90.83	604	2	.19	979	97.61
551	6	.58	757	75.47	575	3	.29	914	91.13	605	1	.10	980	97.71
552	8	.77	765	76.27	576	5	.48	919	91.63	606	3	.29	983	98.01
553	9	.87	774	77.17	577	7	.68	926	92.32	608	1	.10	984	98.11
554	9	.87	783	78.07	578	4	.39	930	92.72	609	4	.39	988	98.50
555	7	.68	790	78.76	579	4	.39	934	93.12	613	1	.10	989	98.60
556	10	.97	800	79.76	580	2	.19	936	93.32	619	1	.10	990	98.70
557	6	.58	806	80.36	581	3	.29	939	93.62	620	1	.10	991	98.80
558	6	.58	812	80.96	582	1	.10	940	93.72	622	1	.10	992	98.90
559	9	.87	821	81.85	583	4	.39	944	94.12	623	1	.10	993	99.00
560	9	.87	830	82.75	584	3	.29	947	94.42	627	1	.10	994	99.10
561	6	.58	836	83.35	585	4	.39	951	94.82	629	1	.10	995	99.20
562	4	.39	840	83.75	587	1	.10	952	94.92	631	1	.10	996	99.30
563	13	1.25	853	85.04	588	1	.10	953	95.01	633	1	.10	997	99.40
564	6	.58	859	85.64	590	1	.10	954	95.11	636	2	.19	999	99.60
565	3	.29	862	85.94	591	4	.39	958	95.51	652	1	.10	1000	99.70
566	2	.19	864	86.14	592	3	.29	961	95.81	655	1	.10	1001	99.80
567	2	.19	866	86.34	593	1	.10	962	95.91	658	1	.10	1002	99.90
568	5	.48	871	86.84	595	4	.39	966	96.31	667	1	.10	1003	100.00
569	6	.58	877	87.44	596	2	.19	968	96.51					
570	7	.68	884	88.14	597	3	.29	971	96.81					

Figure 7. Spanish Writing 4 Scale Score Distributions for the Total Population, Female, and Male Students



Appendix 6. Writing 4 Scale Score Distribution

(SS = Scale Score, Freq. = Frequency, Cum. = Cumulative)

SS	Freq.	%	Cum. Freq	Cum. %	SS	Freq.	%	Cum. Freq	Cum. %	SS	Freq.	%	Cum. Freq	Cum. %
190	16	.03	16	.03	319	4	.01	107	.19	362	32	.06	681	1.23
205	1	.00	17	.03	320	4	.01	111	.20	363	26	.05	707	1.27
211	1	.00	18	.03	321	4	.01	115	.21	364	27	.05	734	1.32
224	1	.00	19	.03	322	4	.01	119	.21	365	31	.05	765	1.38
245	1	.00	20	.04	323	9	.02	128	.23	366	25	.04	790	1.42
246	1	.00	21	.04	324	4	.01	132	.24	367	38	.07	828	1.49
247	1	.00	22	.04	325	2	.00	134	.24	368	28	.05	856	1.54
255	1	.00	23	.04	326	6	.01	140	.25	369	40	.07	896	1.61
262	1	.00	24	.04	327	4	.01	144	.26	370	31	.05	927	1.67
264	1	.00	25	.05	328	5	.01	149	.27	371	44	.08	971	1.75
270	1	.00	26	.05	329	6	.01	155	.28	372	44	.08	1015	1.83
273	2	.00	28	.05	330	5	.01	160	.29	373	31	.05	1046	1.89
275	1	.00	29	.05	331	11	.02	171	.31	374	53	.09	1099	1.98
276	2	.00	31	.06	332	4	.01	175	.32	375	43	.08	1142	2.06
277	2	.00	33	.06	333	9	.02	184	.33	376	51	.09	1193	2.15
280	1	.00	34	.06	334	9	.02	193	.35	377	43	.08	1236	2.23
281	1	.00	35	.06	335	8	.01	201	.36	378	52	.09	1288	2.32
285	1	.00	36	.06	336	13	.02	214	.39	379	58	.10	1346	2.43
287	2	.00	38	.07	337	9	.02	223	.40	380	50	.09	1396	2.52
288	1	.00	39	.07	338	9	.02	232	.42	381	60	.11	1456	2.62
290	4	.01	43	.08	339	14	.02	246	.44	382	69	.12	1525	2.75
293	1	.00	44	.08	340	15	.03	261	.47	383	52	.09	1577	2.84
295	3	.01	47	.08	341	12	.02	273	.49	384	68	.12	1645	2.96
296	3	.01	50	.09	342	13	.02	286	.52	385	58	.10	1703	3.07
298	2	.00	52	.09	343	18	.03	304	.55	386	70	.12	1773	3.20
299	2	.00	54	.10	344	17	.03	321	.58	387	79	.14	1852	3.34
300	2	.00	56	.10	345	16	.03	337	.61	388	72	.13	1924	3.47
301	2	.00	58	.10	346	15	.03	352	.63	389	68	.12	1992	3.59
302	1	.00	59	.11	347	17	.03	369	.67	390	73	.13	2065	3.72
305	1	.00	60	.11	348	9	.02	378	.68	391	74	.13	2139	3.86
306	1	.00	61	.11	349	15	.03	393	.71	392	74	.13	2213	3.99
307	2	.00	63	.11	350	13	.02	406	.73	393	83	.15	2296	4.14
308	6	.01	69	.12	351	15	.03	421	.76	394	75	.13	2371	4.27
309	3	.01	72	.13	352	17	.03	438	.79	395	80	.14	2451	4.42
310	3	.01	75	.14	353	26	.05	464	.84	396	90	.16	2541	4.58
311	1	.00	76	.14	354	26	.05	490	.88	397	87	.15	2628	4.74
312	2	.00	78	.14	355	17	.03	507	.91	398	93	.16	2721	4.90
313	1	.00	79	.14	356	25	.04	532	.96	399	93	.16	2814	5.07
314	5	.01	84	.15	357	17	.03	549	.99	400	91	.16	2905	5.24
315	4	.01	88	.16	358	18	.03	567	1.02	401	99	.17	3004	5.41
316	8	.01	96	.17	359	24	.04	591	1.07	402	97	.17	3101	5.59
317	5	.01	101	.18	360	32	.06	623	1.12	403	114	.20	3215	5.79
318	2	.00	103	.19	361	26	.05	649	1.17	404	116	.20	3331	6.00

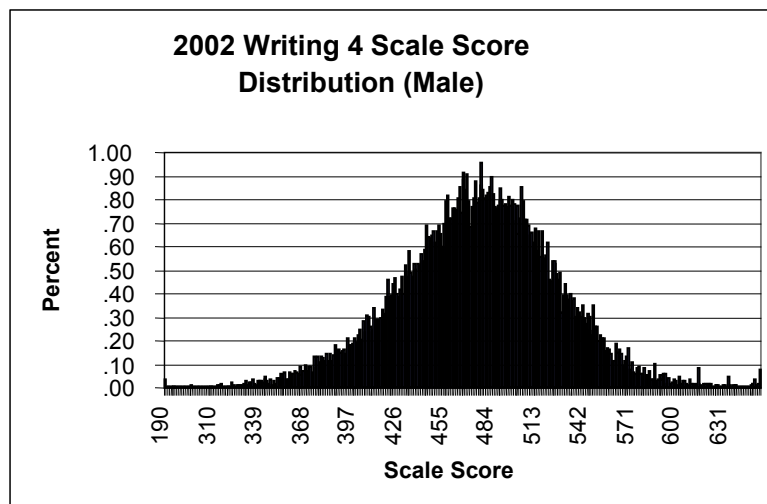
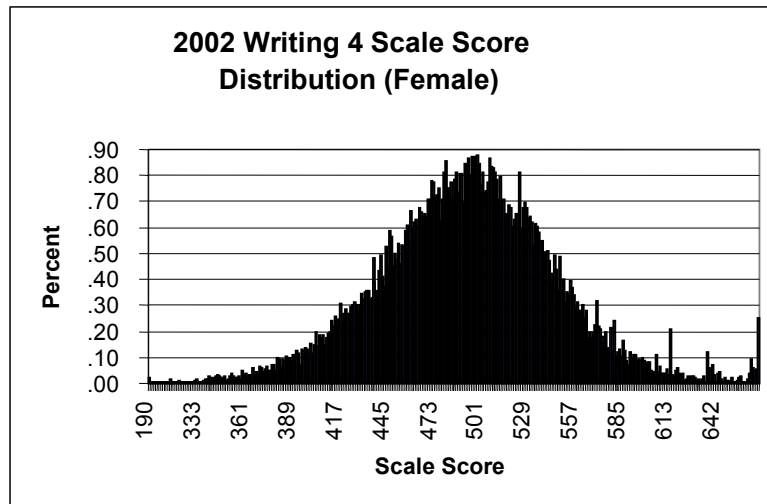
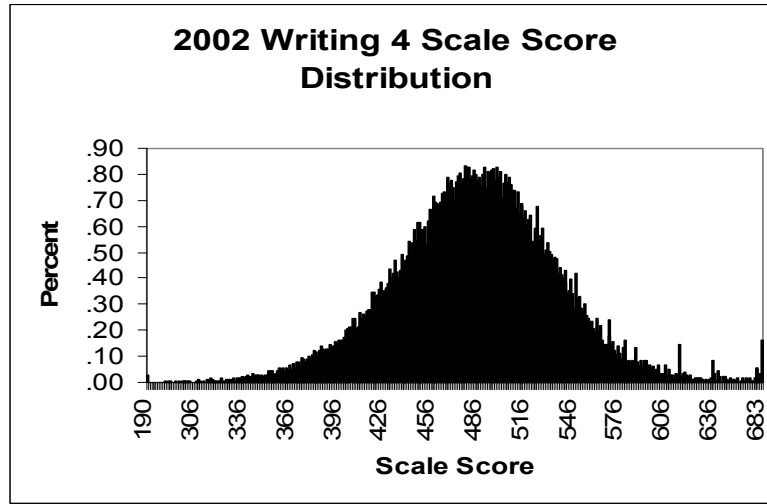
Appendix 6. Writing 4 Scale Score Distribution (Continued)

SS	Freq.	%	Cum. Freq	Cum. %	SS	Freq.	%	Cum. Freq	Cum. %	SS	Freq.	%	Cum. Freq	Cum. %
405	122	.22	3453	6.22	451	333	.59	13554	24.43	497	467	.82	32989	59.46
406	120	.21	3573	6.44	452	334	.59	13888	25.03	498	441	.78	33430	60.25
407	138	.24	3711	6.69	453	339	.60	14227	25.64	499	468	.82	33898	61.09
408	140	.25	3851	6.94	454	302	.53	14529	26.19	500	448	.79	34346	61.90
409	116	.20	3967	7.15	455	351	.62	14880	26.82	501	459	.81	34805	62.73
410	120	.21	4087	7.37	456	377	.66	15257	27.50	502	402	.71	35207	63.45
411	123	.22	4210	7.59	457	337	.59	15594	28.10	503	435	.77	35642	64.24
412	153	.27	4363	7.86	458	407	.72	16001	28.84	504	453	.80	36095	65.05
413	141	.25	4504	8.12	459	360	.63	16361	29.49	505	434	.76	36529	65.84
414	150	.26	4654	8.39	460	392	.69	16753	30.19	506	421	.74	36950	66.59
415	146	.26	4800	8.65	461	389	.69	17142	30.89	507	446	.79	37396	67.40
416	157	.28	4957	8.93	462	382	.67	17524	31.58	508	431	.76	37827	68.18
417	158	.28	5115	9.22	463	393	.69	17917	32.29	509	419	.74	38246	68.93
418	159	.28	5274	9.51	464	411	.72	18328	33.03	510	418	.74	38664	69.68
419	198	.35	5472	9.86	465	416	.73	18744	33.78	511	381	.67	39045	70.37
420	198	.35	5670	10.22	466	405	.71	19149	34.51	512	415	.73	39460	71.12
421	186	.33	5856	10.55	467	448	.79	19597	35.32	513	367	.65	39827	71.78
422	182	.32	6038	10.88	468	435	.77	20032	36.10	514	389	.69	40216	72.48
423	189	.33	6227	11.22	469	426	.75	20458	36.87	515	383	.67	40599	73.17
424	203	.36	6430	11.59	470	442	.78	20900	37.67	516	359	.63	40958	73.82
425	218	.38	6648	11.98	471	426	.75	21326	38.44	517	375	.66	41333	74.49
426	199	.35	6847	12.34	472	396	.70	21722	39.15	518	341	.60	41674	75.11
427	199	.35	7046	12.70	473	439	.77	22161	39.94	519	354	.62	42028	75.75
428	206	.36	7252	13.07	474	450	.79	22611	40.75	520	366	.65	42394	76.41
429	215	.38	7467	13.46	475	456	.80	23067	41.57	521	301	.53	42695	76.95
430	202	.36	7669	13.82	476	429	.76	23496	42.35	522	307	.54	43002	77.50
431	247	.44	7916	14.27	477	443	.78	23939	43.14	523	337	.59	43339	78.11
432	227	.40	8143	14.68	478	425	.75	24364	43.91	524	334	.59	43673	78.71
433	239	.42	8382	15.11	479	474	.84	24838	44.77	525	383	.67	44056	79.40
434	268	.47	8650	15.59	480	470	.83	25308	45.61	526	306	.54	44362	79.95
435	241	.42	8891	16.02	481	470	.83	25778	46.46	527	320	.56	44682	80.53
436	228	.40	9119	16.44	482	445	.78	26223	47.26	528	336	.59	45018	81.14
437	244	.43	9363	16.87	483	450	.79	26673	48.07	529	280	.49	45298	81.64
438	279	.49	9642	17.38	484	462	.81	27135	48.91	530	290	.51	45588	82.16
439	261	.46	9903	17.85	485	455	.80	27590	49.73	531	305	.54	45893	82.71
440	248	.44	10151	18.30	486	432	.76	28022	50.50	532	286	.50	46179	83.23
441	265	.47	10416	18.77	487	440	.78	28462	51.30	533	257	.45	46436	83.69
442	275	.48	10691	19.27	488	447	.79	28909	52.10	534	279	.49	46715	84.19
443	307	.54	10998	19.82	489	428	.75	29337	52.87	535	271	.48	46986	84.68
444	276	.49	11274	20.32	490	454	.80	29791	53.69	536	274	.48	47260	85.18
445	303	.53	11577	20.87	491	471	.83	30262	54.54	537	271	.48	47531	85.66
446	333	.59	11910	21.47	492	426	.75	30688	55.31	538	239	.42	47770	86.10
447	307	.54	12217	22.02	493	459	.81	31147	56.14	539	251	.44	48021	86.55
448	350	.62	12567	22.65	494	453	.80	31600	56.95	540	234	.41	48255	86.97
449	350	.62	12917	23.28	495	464	.82	32064	57.79	541	228	.40	48483	87.38
450	304	.54	13221	23.83	496	458	.81	32522	58.61	542	243	.43	48726	87.82

Appendix 6. Writing 4 Scale Score Distribution (Continued)

SS	Freq.	%	Cum. Freq	Cum. %	SS	Freq.	%	Cum. Freq	Cum. %	SS	Freq.	%	Cum. Freq	Cum. %
543	218	.38	48944	88.21	589	36	.06	54095	97.49	635	10	.02	55071	99.25
544	195	.34	49139	88.56	590	34	.06	54129	97.56	636	4	.01	55075	99.26
545	199	.35	49338	88.92	591	49	.09	54178	97.64	637	47	.08	55122	99.35
546	225	.40	49563	89.33	592	36	.06	54214	97.71	639	19	.03	55141	99.38
547	194	.34	49757	89.68	593	47	.08	54261	97.79	640	2	.00	55143	99.38
548	163	.29	49920	89.97	594	47	.08	54308	97.88	641	24	.04	55167	99.43
549	237	.42	50157	90.40	595	29	.05	54337	97.93	642	13	.02	55180	99.45
550	185	.33	50342	90.73	596	39	.07	54376	98.00	643	1	.00	55181	99.45
551	186	.33	50528	91.07	597	31	.05	54407	98.06	644	14	.02	55195	99.48
552	146	.26	50674	91.33	598	35	.06	54442	98.12	645	14	.02	55209	99.50
553	162	.29	50836	91.62	599	34	.06	54476	98.18	646	1	.00	55210	99.50
554	155	.27	50991	91.90	600	26	.05	54502	98.23	647	7	.01	55217	99.52
555	170	.30	51161	92.21	601	27	.05	54529	98.28	648	3	.01	55220	99.52
556	146	.26	51307	92.47	602	37	.07	54566	98.34	649	8	.01	55228	99.54
557	140	.25	51447	92.72	603	18	.03	54584	98.38	650	4	.01	55232	99.54
558	131	.23	51578	92.96	604	18	.03	54602	98.41	651	5	.01	55237	99.55
559	134	.24	51712	93.20	605	18	.03	54620	98.44	652	2	.00	55239	99.56
560	118	.21	51830	93.41	606	38	.07	54658	98.51	653	8	.01	55247	99.57
561	112	.20	51942	93.61	607	17	.03	54675	98.54	656	1	.00	55248	99.57
562	111	.20	52053	93.81	608	14	.02	54689	98.57	657	1	.00	55249	99.57
563	138	.24	52191	94.06	609	28	.05	54717	98.62	659	3	.01	55252	99.58
564	114	.20	52305	94.27	610	16	.03	54733	98.64	660	9	.02	55261	99.60
565	124	.22	52429	94.49	611	15	.03	54748	98.67	661	4	.01	55265	99.60
566	91	.16	52520	94.66	612	14	.02	54762	98.70	662	8	.01	55273	99.62
567	83	.15	52603	94.81	613	20	.04	54782	98.73	664	1	.00	55274	99.62
568	81	.14	52684	94.95	614	15	.03	54797	98.76	666	8	.01	55282	99.63
569	83	.15	52767	95.10	615	81	.14	54878	98.91	669	2	.00	55284	99.64
570	100	.18	52867	95.28	616	13	.02	54891	98.93	670	4	.01	55288	99.64
571	137	.24	53004	95.53	617	9	.02	54900	98.95	673	10	.02	55298	99.66
572	83	.15	53087	95.68	618	18	.03	54918	98.98	676	31	.05	55329	99.72
573	89	.16	53176	95.84	619	22	.04	54940	99.02	680	27	.05	55356	99.77
574	70	.12	53246	95.96	620	15	.03	54955	99.04	683	16	.03	55372	99.80
575	60	.11	53306	96.07	621	14	.02	54969	99.07	697	20	.04	55392	99.83
576	79	.14	53385	96.22	622	16	.03	54985	99.10	730	93	.16	55485	100.00
577	64	.11	53449	96.33	623	5	.01	54990	99.11					
578	50	.09	53499	96.42	624	6	.01	54996	99.12					
579	76	.13	53575	96.56	625	10	.02	55006	99.14					
580	50	.09	53625	96.65	626	4	.01	55010	99.14					
581	91	.16	53716	96.81	627	8	.01	55018	99.16					
582	44	.08	53760	96.89	628	11	.02	55029	99.18					
583	49	.09	53809	96.98	629	9	.02	55038	99.19					
584	43	.08	53852	97.06	630	5	.01	55043	99.20					
585	48	.08	53900	97.14	631	3	.01	55046	99.21					
586	40	.07	53940	97.22	632	5	.01	55051	99.22					
587	76	.13	54016	97.35	633	3	.01	55054	99.22					
588	43	.08	54059	97.43	634	7	.01	55061	99.24					

Figure 6. Writing 4 Scale Score Distributions for the Total Population, Female, and Male Students



Appendix 5. Spanish Reading 4 Scale Score Distribution

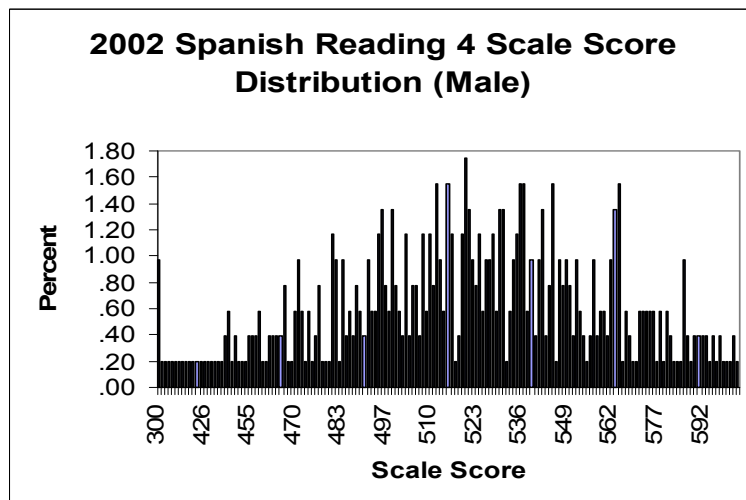
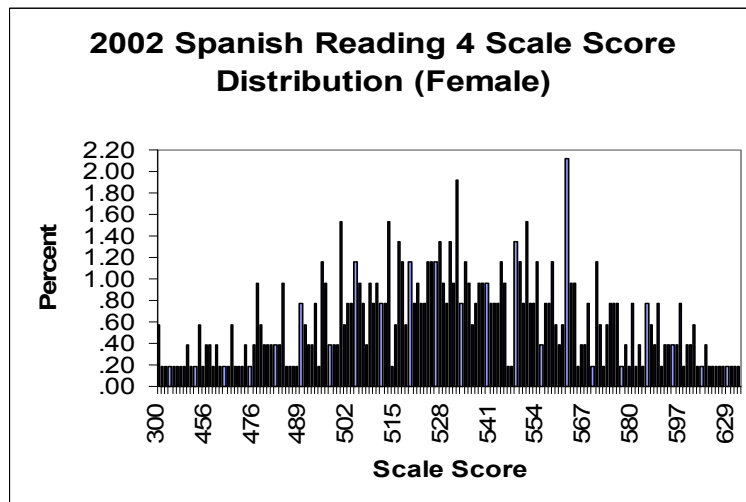
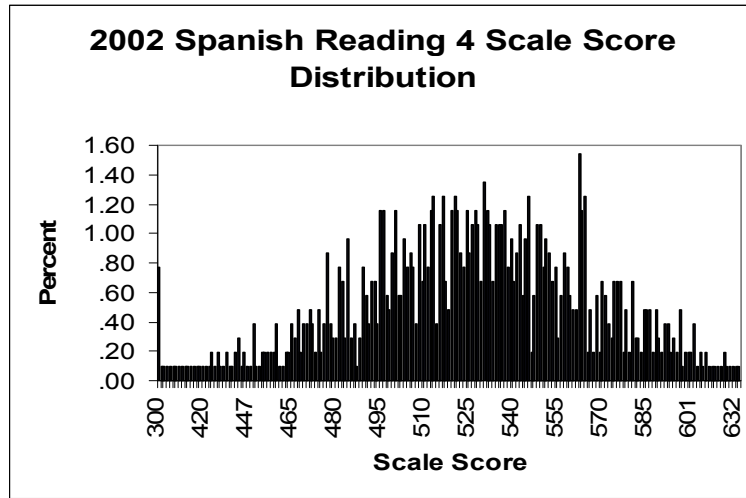
(SS = Scale Score, Freq. = Frequency, Cum. = Cumulative)

SS	Freq.	%	Cum. Freq.	Cum. %	SS	Freq.	%	Cum. Freq.	Cum. %	SS	Freq.	%	Cum. Freq.	Cum. %
300	8	.77	8	.79	463	2	.19	70	6.92	506	8	.77	313	30.96
341	1	.10	9	.89	464	2	.19	72	7.12	507	4	.39	317	31.36
348	1	.10	10	.99	465	4	.39	76	7.52	508	11	1.06	328	32.44
353	1	.10	11	1.09	466	3	.29	79	7.81	509	7	.68	335	33.14
374	1	.10	12	1.19	467	5	.48	84	8.31	510	11	1.06	346	34.22
377	1	.10	13	1.29	468	2	.19	86	8.51	511	8	.77	354	35.01
382	1	.10	14	1.38	469	4	.39	90	8.90	512	12	1.16	366	36.20
394	1	.10	15	1.48	470	4	.39	94	9.30	513	13	1.25	379	37.49
400	1	.10	16	1.58	471	5	.48	99	9.79	514	4	.39	383	37.88
407	1	.10	17	1.68	472	4	.39	103	10.19	515	11	1.06	394	38.97
409	1	.10	18	1.78	473	2	.19	105	10.39	516	13	1.25	407	40.26
410	1	.10	19	1.88	474	5	.48	110	10.88	517	7	.68	414	40.95
416	1	.10	20	1.98	475	2	.19	112	11.08	518	5	.48	419	41.44
418	1	.10	21	2.08	476	4	.39	116	11.47	519	12	1.16	431	42.63
419	1	.10	22	2.18	477	9	.87	125	12.36	520	13	1.25	444	43.92
420	1	.10	23	2.27	478	4	.39	129	12.76	521	12	1.16	456	45.10
421	1	.10	24	2.37	479	3	.29	132	13.06	522	9	.87	465	45.99
423	1	.10	25	2.47	480	3	.29	135	13.35	523	8	.77	473	46.79
426	2	.19	27	2.67	481	8	.77	143	14.14	524	12	1.16	485	47.97
428	1	.10	28	2.77	482	7	.68	150	14.84	525	9	.87	494	48.86
430	2	.19	30	2.97	483	3	.29	153	15.13	526	11	1.06	505	49.95
431	1	.10	31	3.07	484	10	.97	163	16.12	527	12	1.16	517	51.14
433	1	.10	32	3.17	485	3	.29	166	16.42	528	11	1.06	528	52.23
434	2	.19	34	3.36	486	4	.39	170	16.82	529	7	.68	535	52.92
437	1	.10	35	3.46	487	1	.10	171	16.91	530	14	1.35	549	54.30
439	1	.10	36	3.56	488	3	.29	174	17.21	531	12	1.16	561	55.49
442	2	.19	38	3.76	489	8	.77	182	18.00	532	11	1.06	572	56.58
443	3	.29	41	4.06	490	6	.58	188	18.60	533	7	.68	579	57.27
444	1	.10	42	4.15	491	4	.39	192	18.99	534	11	1.06	590	58.36
445	2	.19	44	4.35	492	7	.68	199	19.68	535	11	1.06	601	59.45
447	1	.10	45	4.45	493	7	.68	206	20.38	536	11	1.06	612	60.53
449	1	.10	46	4.55	494	4	.39	210	20.77	537	12	1.16	624	61.72
451	4	.39	50	4.95	495	12	1.16	222	21.96	538	8	.77	632	62.51
453	1	.10	51	5.04	496	12	1.16	234	23.15	539	10	.97	642	63.50
454	1	.10	52	5.14	497	6	.58	240	23.74	540	7	.68	649	64.19
455	2	.19	54	5.34	498	5	.48	245	24.23	541	9	.87	658	65.08
456	2	.19	56	5.54	499	9	.87	254	25.12	542	11	1.06	669	66.17
457	2	.19	58	5.74	500	12	1.16	266	26.31	543	6	.58	675	66.77
458	2	.19	60	5.93	501	6	.58	272	26.90	544	10	.97	685	67.75
459	2	.19	62	6.13	502	6	.58	278	27.50	545	13	1.25	698	69.04
460	4	.39	66	6.53	503	10	.97	288	28.49	546	2	.19	700	69.24
461	1	.10	67	6.63	504	8	.77	296	29.28	547	6	.58	706	69.83
462	1	.10	68	6.73	505	9	.87	305	30.17	548	11	1.06	717	70.92

Appendix 5. Spanish Reading 4 Scale Score Distribution (Continued)

SS	Freq.	%	Cum. Freq.	Cum. %	SS	Freq.	%	Cum. Freq.	Cum. %	SS	Freq.	%	Cum. Freq.	Cum. %
549	11	1.06	728	72.01	572	4	.39	887	87.73	595	2	.19	977	96.64
550	8	.77	736	72.80	573	3	.29	890	88.03	597	5	.48	982	97.13
551	10	.97	746	73.79	574	7	.68	897	88.72	598	1	.10	983	97.23
552	9	.87	755	74.68	575	7	.68	904	89.42	599	2	.19	985	97.43
553	7	.68	762	75.37	576	7	.68	911	90.11	600	2	.19	987	97.63
554	8	.77	770	76.16	577	2	.19	913	90.31	601	2	.19	989	97.82
555	3	.29	773	76.46	578	5	.48	918	90.80	603	4	.39	993	98.22
556	6	.58	779	77.05	579	2	.19	920	91.00	604	1	.10	994	98.32
557	9	.87	788	77.94	580	7	.68	927	91.69	605	2	.19	996	98.52
558	8	.77	796	78.73	581	3	.29	930	91.99	609	1	.10	997	98.62
559	6	.58	802	79.33	582	3	.29	933	92.28	610	2	.19	999	98.81
560	5	.48	807	79.82	583	2	.19	935	92.48	615	1	.10	1000	98.91
561	5	.48	812	80.32	584	5	.48	940	92.98	616	1	.10	1001	99.01
562	16	1.54	828	81.90	585	5	.48	945	93.47	618	1	.10	1002	99.11
563	12	1.16	840	83.09	586	5	.48	950	93.97	620	1	.10	1003	99.21
564	13	1.25	853	84.37	587	2	.19	952	94.16	622	1	.10	1004	99.31
565	2	.19	855	84.57	588	5	.48	957	94.66	625	2	.19	1006	99.51
566	5	.48	860	85.06	589	3	.29	960	94.96	629	1	.10	1007	99.60
567	2	.19	862	85.26	590	2	.19	962	95.15	630	1	.10	1008	99.70
568	6	.58	868	85.86	591	4	.39	966	95.55	631	1	.10	1009	99.80
569	2	.19	870	86.05	592	4	.39	970	95.94	632	1	.10	1010	99.90
570	7	.68	877	86.75	593	2	.19	972	96.14	642	1	.10	1011	100.00
571	6	.58	883	87.34	594	3	.29	975	96.44					

Figure 5. Spanish Reading 4 Scale Score Distributions for the Total Population, Female, and Male Students



Appendix 4. Reading 4 Scale Score Distribution

(SS = Scale Score, Freq. = Frequency, Cum. = Cumulative)

SS	Freq.	%	Cum. Freq.	Cum. %	SS	Freq.	%	Cum. Freq.	Cum. %	SS	Freq.	%	Cum. Freq.	Cum. %
180	72	.13	72	.13	315	2	.00	135	.24	361	5	.01	283	.51
238	1	.00	73	.13	316	4	.01	139	.25	362	3	.01	286	.52
240	1	.00	74	.13	317	2	.00	141	.25	363	6	.01	292	.53
247	1	.00	75	.14	319	4	.01	145	.26	364	11	.02	303	.55
248	1	.00	76	.14	320	1	.00	146	.26	365	6	.01	309	.56
260	1	.00	77	.14	321	1	.00	147	.27	366	5	.01	314	.57
261	1	.00	78	.14	322	3	.01	150	.27	367	7	.01	321	.58
264	1	.00	79	.14	323	2	.00	152	.27	368	9	.02	330	.60
270	1	.00	80	.14	325	3	.01	155	.28	369	6	.01	336	.61
271	1	.00	81	.15	326	6	.01	161	.29	370	2	.00	338	.61
272	1	.00	82	.15	327	2	.00	163	.29	371	8	.01	346	.62
275	1	.00	83	.15	328	1	.00	164	.30	372	11	.02	357	.64
276	1	.00	84	.15	329	2	.00	166	.30	373	8	.01	365	.66
279	2	.00	86	.16	330	2	.00	168	.30	374	6	.01	371	.67
281	1	.00	87	.16	331	4	.01	172	.31	375	4	.01	375	.68
282	3	.01	90	.16	332	1	.00	173	.31	376	8	.01	383	.69
284	2	.00	92	.17	333	2	.00	175	.32	377	8	.01	391	.71
285	1	.00	93	.17	334	1	.00	176	.32	378	9	.02	400	.72
286	1	.00	94	.17	335	6	.01	182	.33	379	7	.01	407	.73
288	1	.00	95	.17	336	4	.01	186	.34	380	10	.02	417	.75
289	2	.00	97	.17	338	3	.01	189	.34	381	13	.02	430	.78
290	2	.00	99	.18	339	2	.00	191	.34	382	6	.01	436	.79
291	1	.00	100	.18	340	3	.01	194	.35	383	4	.01	440	.79
293	1	.00	101	.18	341	5	.01	199	.36	384	15	.03	455	.82
294	2	.00	103	.19	342	4	.01	203	.37	385	11	.02	466	.84
295	1	.00	104	.19	343	3	.01	206	.37	386	8	.01	474	.85
296	1	.00	105	.19	344	6	.01	212	.38	387	6	.01	480	.87
297	1	.00	106	.19	345	6	.01	218	.39	388	11	.02	491	.89
298	2	.00	108	.19	346	3	.01	221	.40	389	8	.01	499	.90
299	2	.00	110	.20	347	6	.01	227	.41	390	16	.03	515	.93
300	1	.00	111	.20	348	3	.01	230	.41	391	7	.01	522	.94
301	1	.00	112	.20	349	13	.02	243	.44	392	5	.01	527	.95
302	3	.01	115	.21	350	3	.01	246	.44	393	15	.03	542	.98
303	1	.00	116	.21	351	3	.01	249	.45	394	11	.02	553	1.00
304	2	.00	118	.21	352	1	.00	250	.45	395	6	.01	559	1.01
306	2	.00	120	.22	353	5	.01	255	.46	396	18	.03	577	1.04
307	1	.00	121	.22	354	3	.01	258	.47	397	9	.02	586	1.06
308	3	.01	124	.22	355	6	.01	264	.48	398	10	.02	596	1.07
309	1	.00	125	.23	356	3	.01	267	.48	399	13	.02	609	1.10
310	2	.00	127	.23	357	1	.00	268	.48	400	10	.02	619	1.12
311	3	.01	130	.23	358	5	.01	273	.49	401	18	.03	637	1.15
313	1	.00	131	.24	359	3	.01	276	.50	402	8	.01	645	1.16
314	2	.00	133	.24	360	2	.00	278	.50	403	15	.03	660	1.19

Appendix 4. Reading 4 Scale Score Distribution (Continued)

SS	Freq.	%	Cum. Freq.	Cum. %	SS	Freq.	%	Cum. Freq.	Cum. %	SS	Freq.	%	Cum. Freq.	Cum. %
404	5	.01	665	1.20	450	41	.07	1826	3.29	496	110	.19	4881	8.80
405	21	.04	686	1.24	451	37	.07	1863	3.36	497	94	.17	4975	8.97
406	26	.05	712	1.28	452	51	.09	1914	3.45	498	107	.19	5082	9.17
407	16	.03	728	1.31	453	37	.07	1951	3.52	499	118	.21	5200	9.38
408	18	.03	746	1.35	454	38	.07	1989	3.59	500	117	.21	5317	9.59
409	18	.03	764	1.38	455	31	.05	2020	3.64	501	109	.19	5426	9.79
410	21	.04	785	1.42	456	31	.05	2051	3.70	502	116	.20	5542	10.00
411	17	.03	802	1.45	457	39	.07	2090	3.77	503	124	.22	5666	10.22
412	24	.04	826	1.49	458	49	.09	2139	3.86	504	121	.21	5787	10.44
413	13	.02	839	1.51	459	39	.07	2178	3.93	505	156	.27	5943	10.72
414	18	.03	857	1.55	460	41	.07	2219	4.00	506	133	.23	6076	10.96
415	16	.03	873	1.57	461	46	.08	2265	4.09	507	134	.24	6210	11.20
416	19	.03	892	1.61	462	43	.08	2308	4.16	508	131	.23	6341	11.44
417	30	.05	922	1.66	463	55	.10	2363	4.26	509	126	.22	6467	11.66
418	22	.04	944	1.70	464	54	.10	2417	4.36	510	155	.27	6622	11.94
419	24	.04	968	1.75	465	55	.10	2472	4.46	511	151	.27	6773	12.22
420	11	.02	979	1.77	466	65	.11	2537	4.58	512	123	.22	6896	12.44
421	19	.03	998	1.80	467	44	.08	2581	4.65	513	137	.24	7033	12.68
422	24	.04	1022	1.84	468	56	.10	2637	4.76	514	144	.25	7177	12.94
423	18	.03	1040	1.88	469	59	.10	2696	4.86	515	173	.30	7350	13.26
424	26	.05	1066	1.92	470	58	.10	2754	4.97	516	143	.25	7493	13.51
425	25	.04	1091	1.97	471	56	.10	2810	5.07	517	163	.29	7656	13.81
426	20	.04	1111	2.00	472	57	.10	2867	5.17	518	141	.25	7797	14.06
427	12	.02	1123	2.03	473	62	.11	2929	5.28	519	181	.32	7978	14.39
428	24	.04	1147	2.07	474	83	.15	3012	5.43	520	157	.28	8135	14.67
429	33	.06	1180	2.13	475	75	.13	3087	5.57	521	172	.30	8307	14.98
430	24	.04	1204	2.17	476	66	.12	3153	5.69	522	148	.26	8455	15.25
431	25	.04	1229	2.22	477	67	.12	3220	5.81	523	155	.27	8610	15.53
432	38	.07	1267	2.29	478	60	.11	3280	5.92	524	180	.32	8790	15.85
433	22	.04	1289	2.32	479	70	.12	3350	6.04	525	182	.32	8972	16.18
434	28	.05	1317	2.38	480	89	.16	3439	6.20	526	198	.35	9170	16.54
435	21	.04	1338	2.41	481	77	.14	3516	6.34	527	183	.32	9353	16.87
436	32	.06	1370	2.47	482	81	.14	3597	6.49	528	183	.32	9536	17.20
437	36	.06	1406	2.54	483	70	.12	3667	6.61	529	190	.33	9726	17.54
438	27	.05	1433	2.58	484	73	.13	3740	6.75	530	191	.34	9917	17.89
439	29	.05	1462	2.64	485	98	.17	3838	6.92	531	205	.36	10122	18.26
440	25	.04	1487	2.68	486	102	.18	3940	7.11	532	193	.34	10315	18.60
441	31	.05	1518	2.74	487	103	.18	4043	7.29	533	205	.36	10520	18.97
442	23	.04	1541	2.78	488	91	.16	4134	7.46	534	220	.39	10740	19.37
443	28	.05	1569	2.83	489	75	.13	4209	7.59	535	205	.36	10945	19.74
444	37	.07	1606	2.90	490	89	.16	4298	7.75	536	230	.41	11175	20.15
445	37	.07	1643	2.96	491	76	.13	4374	7.89	537	196	.35	11371	20.51
446	33	.06	1676	3.02	492	96	.17	4470	8.06	538	227	.40	11598	20.92
447	32	.06	1708	3.08	493	108	.19	4578	8.26	539	228	.40	11826	21.33
448	33	.06	1741	3.14	494	92	.16	4670	8.42	540	243	.43	12069	21.77
449	44	.08	1785	3.22	495	101	.18	4771	8.60	541	241	.42	12310	22.20

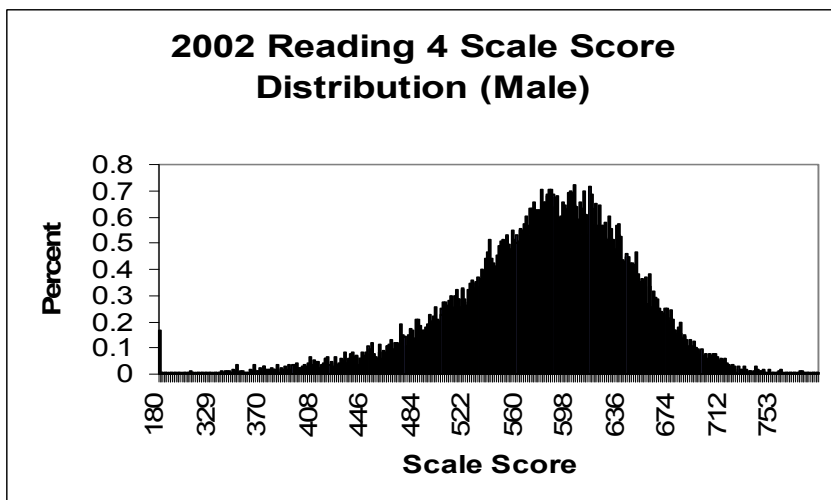
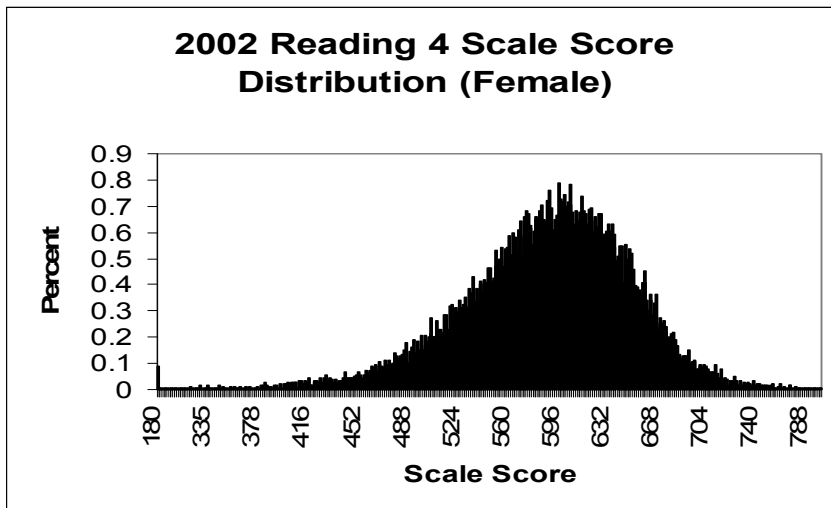
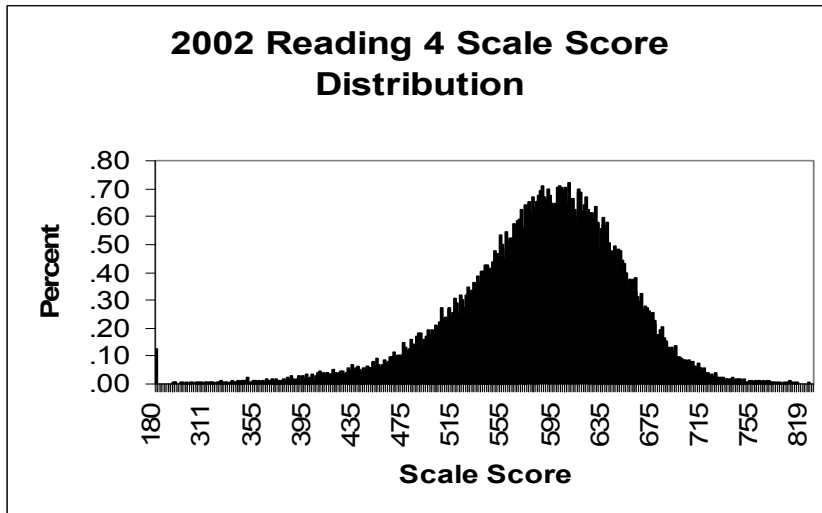
Appendix 4. Reading 4 Scale Score Distribution (Continued)

SS	Freq.	%	Cum. Freq.	Cum. %	SS	Freq.	%	Cum. Freq.	Cum. %	SS	Freq.	%	Cum. Freq.	Cum. %
542	234	.41	12544	22.62	587	380	.67	26745	48.24	632	314	.55	43007	77.57
543	228	.40	12772	23.04	588	360	.63	27105	48.89	633	305	.54	43312	78.12
544	230	.41	13002	23.45	589	373	.66	27478	49.56	634	339	.60	43651	78.73
545	248	.44	13250	23.90	590	396	.70	27874	50.27	635	323	.57	43974	79.31
546	244	.43	13494	24.34	591	383	.67	28257	50.96	636	322	.57	44296	79.89
547	271	.48	13765	24.83	592	348	.61	28605	51.59	637	327	.58	44623	80.48
548	265	.47	14030	25.30	593	368	.65	28973	52.25	638	277	.49	44900	80.98
549	250	.44	14280	25.75	594	360	.63	29333	52.90	639	285	.50	45185	81.49
550	264	.47	14544	26.23	595	351	.62	29684	53.54	640	262	.46	45447	81.97
551	261	.46	14805	26.70	596	367	.65	30051	54.20	641	270	.48	45717	82.45
552	302	.53	15107	27.25	597	366	.65	30417	54.86	642	262	.46	45979	82.93
553	283	.50	15390	27.76	598	399	.70	30816	55.58	643	281	.50	46260	83.43
554	258	.45	15648	28.22	599	404	.71	31220	56.31	644	274	.48	46534	83.93
555	253	.45	15901	28.68	600	397	.70	31617	57.02	645	227	.40	46761	84.34
556	275	.48	16176	29.17	601	399	.70	32016	57.74	646	256	.45	47017	84.80
557	310	.55	16486	29.73	602	393	.69	32409	58.45	647	275	.48	47292	85.29
558	278	.49	16764	30.23	603	398	.70	32807	59.17	648	272	.48	47564	85.78
559	294	.52	17058	30.77	604	380	.67	33187	59.85	649	250	.44	47814	86.24
560	295	.52	17353	31.30	605	365	.64	33552	60.51	650	239	.42	48053	86.67
561	296	.52	17649	31.83	606	366	.65	33918	61.17	651	246	.43	48299	87.11
562	291	.51	17940	32.36	607	409	.72	34327	61.91	652	225	.40	48524	87.52
563	324	.57	18264	32.94	608	371	.65	34698	62.58	653	215	.38	48739	87.90
564	304	.54	18568	33.49	609	324	.57	35022	63.16	654	198	.35	48937	88.26
565	332	.59	18900	34.09	610	377	.66	35399	63.84	655	208	.37	49145	88.64
566	315	.56	19215	34.66	611	341	.60	35740	64.46	656	213	.38	49358	89.02
567	336	.59	19551	35.26	612	354	.62	36094	65.10	657	182	.32	49540	89.35
568	309	.54	19860	35.82	613	331	.58	36425	65.69	658	211	.37	49751	89.73
569	354	.62	20214	36.46	614	395	.70	36820	66.41	659	209	.37	49960	90.11
570	314	.55	20528	37.02	615	390	.69	37210	67.11	660	186	.33	50146	90.44
571	363	.64	20891	37.68	616	388	.68	37598	67.81	661	217	.38	50363	90.83
572	322	.57	21213	38.26	617	338	.60	37936	68.42	662	176	.31	50539	91.15
573	356	.63	21569	38.90	618	352	.62	38288	69.05	663	169	.30	50708	91.45
574	366	.65	21935	39.56	619	364	.64	38652	69.71	664	166	.29	50874	91.75
575	370	.65	22305	40.23	620	331	.58	38983	70.31	665	184	.32	51058	92.09
576	346	.61	22651	40.85	621	379	.67	39362	70.99	666	150	.26	51208	92.36
577	352	.62	23003	41.49	622	353	.62	39715	71.63	667	147	.26	51355	92.62
578	380	.67	23383	42.17	623	332	.59	40047	72.23	668	158	.28	51513	92.91
579	325	.57	23708	42.76	624	347	.61	40394	72.85	669	153	.27	51666	93.18
580	358	.63	24066	43.40	625	347	.61	40741	73.48	670	137	.24	51803	93.43
581	370	.65	24436	44.07	626	322	.57	41063	74.06	671	148	.26	51951	93.70
582	382	.67	24818	44.76	627	336	.59	41399	74.67	672	136	.24	52087	93.94
583	374	.66	25192	45.44	628	362	.64	41761	75.32	673	129	.23	52216	94.17
584	393	.69	25585	46.14	629	330	.58	42091	75.91	674	144	.25	52360	94.43
585	379	.67	25964	46.83	630	325	.57	42416	76.50	675	129	.23	52489	94.67
586	401	.71	26365	47.55	631	277	.49	42693	77.00	676	121	.21	52610	94.89

Appendix 4. Reading 4 Scale Score Distribution (Continued)

SS	Freq.	%	Cum. Freq.	Cum. %	SS	Freq.	%	Cum. Freq.	Cum. %	SS	Freq.	%	Cum. Freq.	Cum. %
677	97	.17	52707	95.06	722	18	.03	55044	99.27	767	5	.01	55384	99.89
678	97	.17	52804	95.24	723	12	.02	55056	99.30	768	2	.00	55386	99.89
679	100	.18	52904	95.42	724	15	.03	55071	99.32	770	2	.00	55388	99.90
680	111	.20	53015	95.62	725	22	.04	55093	99.36	771	2	.00	55390	99.90
681	117	.21	53132	95.83	726	12	.02	55105	99.38	772	4	.01	55394	99.91
682	85	.15	53217	95.98	727	14	.02	55119	99.41	773	3	.01	55397	99.91
683	92	.16	53309	96.15	728	9	.02	55128	99.43	776	1	.00	55398	99.91
684	88	.16	53397	96.30	729	14	.02	55142	99.45	777	2	.00	55400	99.92
685	80	.14	53477	96.45	730	14	.02	55156	99.48	779	2	.00	55402	99.92
686	75	.13	53552	96.58	731	7	.01	55163	99.49	781	1	.00	55403	99.92
687	62	.11	53614	96.70	732	7	.01	55170	99.50	782	3	.01	55406	99.93
688	68	.12	53682	96.82	733	10	.02	55180	99.52	783	1	.00	55407	99.93
689	73	.13	53755	96.95	734	10	.02	55190	99.54	785	2	.00	55409	99.93
690	67	.12	53822	97.07	735	8	.01	55198	99.55	787	1	.00	55410	99.94
691	61	.11	53883	97.18	736	10	.02	55208	99.57	788	2	.00	55412	99.94
692	77	.14	53960	97.32	737	9	.02	55217	99.59	791	4	.01	55416	99.95
693	54	.10	54014	97.42	738	7	.01	55224	99.60	792	1	.00	55417	99.95
694	56	.10	54070	97.52	739	14	.02	55238	99.62	794	5	.01	55422	99.96
695	56	.10	54126	97.62	740	8	.01	55246	99.64	796	2	.00	55424	99.96
696	52	.09	54178	97.71	741	5	.01	55251	99.65	798	1	.00	55425	99.96
697	51	.09	54229	97.81	742	10	.02	55261	99.67	800	2	.00	55427	99.97
698	49	.09	54278	97.89	743	9	.02	55270	99.68	805	2	.00	55429	99.97
699	35	.06	54313	97.96	744	10	.02	55280	99.70	806	1	.00	55430	99.97
700	48	.08	54361	98.04	745	5	.01	55285	99.71	807	1	.00	55431	99.97
701	40	.07	54401	98.12	746	6	.01	55291	99.72	810	2	.00	55433	99.98
702	40	.07	54441	98.19	747	10	.02	55301	99.74	812	1	.00	55434	99.98
703	48	.08	54489	98.27	748	5	.01	55306	99.75	813	1	.00	55435	99.98
704	45	.08	54534	98.36	749	4	.01	55310	99.75	815	1	.00	55436	99.98
705	35	.06	54569	98.42	750	3	.01	55313	99.76	819	1	.00	55437	99.98
706	45	.08	54614	98.50	751	2	.00	55315	99.76	822	1	.00	55438	99.99
707	30	.05	54644	98.55	752	6	.01	55321	99.77	823	1	.00	55439	99.99
708	35	.06	54679	98.62	753	8	.01	55329	99.79	828	1	.00	55440	99.99
709	37	.07	54716	98.68	754	2	.00	55331	99.79	829	2	.00	55442	99.99
710	31	.05	54747	98.74	755	3	.01	55334	99.80	834	1	.00	55443	99.99
711	41	.07	54788	98.81	756	3	.01	55337	99.80	856	1	.00	55444	100.00
712	32	.06	54820	98.87	757	5	.01	55342	99.81	873	1	.00	55445	100.00
713	33	.06	54853	98.93	758	5	.01	55347	99.82	892	1	.00	55446	100.00
714	30	.05	54883	98.98	759	7	.01	55354	99.83					
715	19	.03	54902	99.02	760	7	.01	55361	99.85					
716	33	.06	54935	99.08	761	2	.00	55363	99.85					
717	22	.04	54957	99.12	762	5	.01	55368	99.86					
718	18	.03	54975	99.15	763	2	.00	55370	99.86					
719	21	.04	54996	99.19	764	3	.01	55373	99.87					
720	15	.03	55011	99.22	765	1	.00	55374	99.87					
721	15	.03	55026	99.24	766	5	.01	55379	99.88					

Figure 4. Reading 4 Scale Score Distributions for the Total Population, Female, and Male Students



Appendix 3. Writing 3 Scale Score Distribution

(SS = Scale Score, Freq. = Frequency, Cum. = Cumulative)

SS	Freq.	%	Cum. Freq.	Cum. %	SS	Freq.	%	Cum. Freq.	Cum. %	SS	Freq.	%	Cum. Freq.	Cum. %
150	32	.06	32	.06	255	2	.00	94	.17	300	6	.01	231	.42
192	4	.01	36	.07	257	2	.00	96	.18	301	5	.01	236	.43
194	1	.00	37	.07	258	1	.00	97	.18	302	3	.01	239	.44
197	1	.00	38	.07	259	1	.00	98	.18	303	11	.02	250	.46
200	2	.00	40	.07	260	1	.00	99	.18	304	3	.01	253	.46
201	2	.00	42	.08	261	8	.01	107	.20	305	5	.01	258	.47
203	2	.00	44	.08	262	1	.00	108	.20	306	4	.01	262	.48
205	1	.00	45	.08	263	4	.01	112	.21	307	4	.01	266	.49
208	1	.00	46	.08	264	1	.00	113	.21	308	2	.00	268	.49
209	1	.00	47	.09	265	4	.01	117	.21	309	9	.02	277	.51
210	1	.00	48	.09	266	5	.01	122	.22	310	5	.01	282	.52
211	2	.00	50	.09	267	4	.01	126	.23	311	6	.01	288	.53
212	1	.00	51	.09	268	1	.00	127	.23	312	5	.01	293	.54
216	1	.00	52	.10	269	3	.01	130	.24	313	4	.01	297	.55
217	1	.00	53	.10	270	1	.00	131	.24	314	7	.01	304	.56
218	1	.00	54	.10	271	3	.01	134	.25	315	9	.02	313	.57
219	1	.00	55	.10	272	1	.00	135	.25	316	8	.01	321	.59
220	1	.00	56	.10	273	2	.00	137	.25	317	9	.02	330	.61
221	2	.00	58	.11	274	3	.01	140	.26	318	3	.01	333	.61
225	1	.00	59	.11	275	3	.01	143	.26	319	14	.02	347	.64
226	1	.00	60	.11	277	1	.00	144	.26	320	5	.01	352	.65
227	2	.00	62	.11	278	1	.00	145	.27	321	10	.02	362	.66
229	1	.00	63	.12	279	2	.00	147	.27	322	10	.02	372	.68
230	1	.00	64	.12	280	3	.01	150	.28	323	5	.01	377	.69
231	2	.00	66	.12	281	3	.01	153	.28	324	7	.01	384	.71
232	1	.00	67	.12	282	4	.01	157	.29	325	9	.02	393	.72
233	1	.00	68	.12	283	4	.01	161	.30	326	7	.01	400	.73
235	3	.01	71	.13	284	4	.01	165	.30	327	7	.01	407	.75
236	2	.00	73	.13	285	2	.00	167	.31	328	10	.02	417	.77
237	2	.00	75	.14	286	9	.02	176	.32	329	9	.02	426	.78
239	1	.00	76	.14	287	4	.01	180	.33	330	5	.01	431	.79
240	2	.00	78	.14	288	3	.01	183	.34	331	9	.02	440	.81
241	2	.00	80	.15	289	2	.00	185	.34	332	15	.03	455	.84
242	1	.00	81	.15	290	3	.01	188	.35	333	11	.02	466	.86
243	2	.00	83	.15	291	4	.01	192	.35	334	12	.02	478	.88
244	1	.00	84	.15	292	1	.00	193	.35	335	12	.02	490	.90
245	1	.00	85	.16	293	5	.01	198	.36	336	11	.02	501	.92
246	1	.00	86	.16	294	2	.00	200	.37	337	13	.02	514	.94
247	1	.00	87	.16	295	3	.01	203	.37	338	16	.03	530	.97
248	2	.00	89	.16	296	4	.01	207	.38	339	22	.04	552	1.01
249	1	.00	90	.17	297	3	.01	210	.39	340	19	.03	571	1.05
250	1	.00	91	.17	298	8	.01	218	.40	341	22	.04	593	1.09
251	1	.00	92	.17	299	7	.01	225	.41	342	28	.05	621	1.14

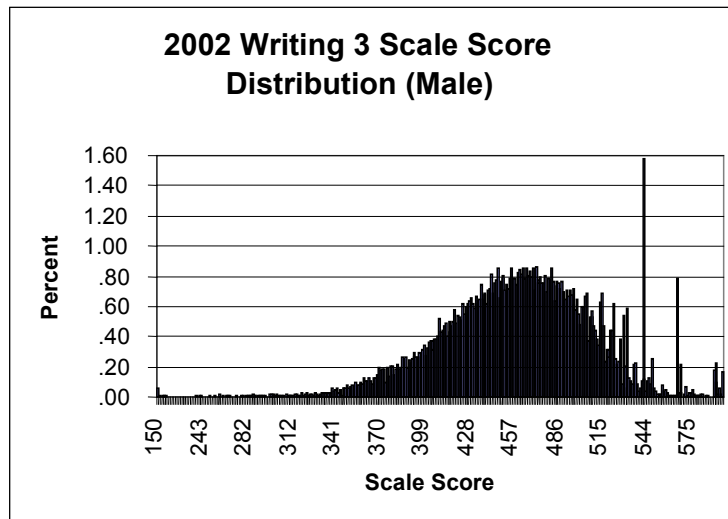
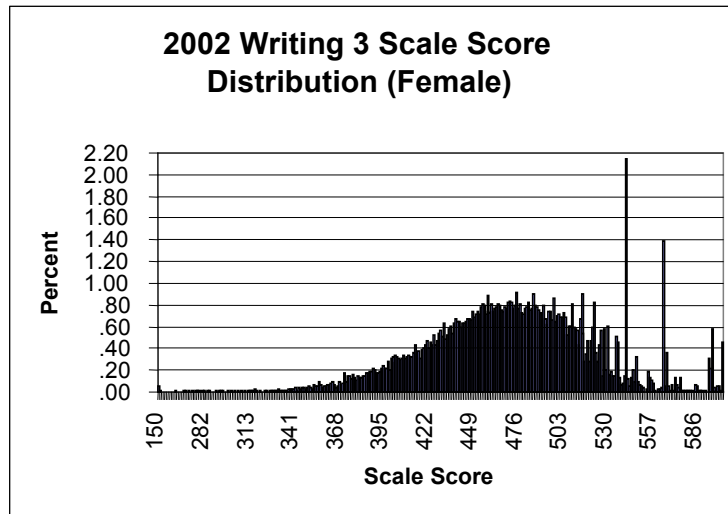
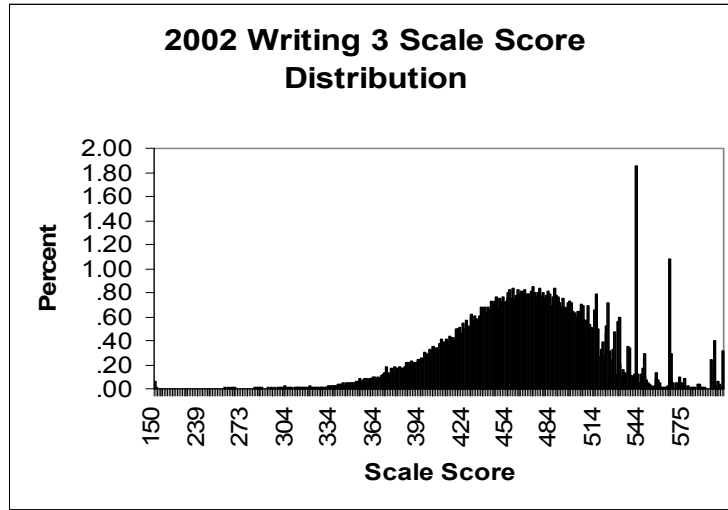
Appendix 3. Writing 3 Scale Score Distribution (Continued)

SS	Freq.	%	Cum. Freq	Cum. %	SS	Freq.	%	Cum. Freq	Cum. %	SS	Freq.	%	Cum. Freq	Cum. %
343	11	.02	632	1.16	389	131	.23	3627	6.66	435	344	.61	14164	26.01
344	26	.05	658	1.21	390	121	.22	3748	6.88	436	384	.68	14548	26.71
345	8	.01	666	1.22	391	121	.22	3869	7.10	437	335	.60	14883	27.33
346	24	.04	690	1.27	392	125	.22	3994	7.33	438	369	.66	15252	28.01
347	28	.05	718	1.32	393	138	.25	4132	7.59	439	382	.68	15634	28.71
348	29	.05	747	1.37	394	134	.24	4266	7.83	440	356	.63	15990	29.36
349	30	.05	777	1.43	395	145	.26	4411	8.10	441	380	.68	16370	30.06
350	27	.05	804	1.48	396	143	.25	4554	8.36	442	369	.66	16739	30.74
351	34	.06	838	1.54	397	136	.24	4690	8.61	443	408	.73	17147	31.49
352	35	.06	873	1.60	398	170	.30	4860	8.92	444	370	.66	17517	32.17
353	30	.05	903	1.66	399	157	.28	5017	9.21	445	396	.70	17913	32.89
354	47	.08	950	1.74	400	163	.29	5180	9.51	446	409	.73	18322	33.64
355	37	.07	987	1.81	401	182	.32	5362	9.85	447	432	.77	18754	34.44
356	38	.07	1025	1.88	402	177	.31	5539	10.17	448	373	.66	19127	35.12
357	49	.09	1074	1.97	403	199	.35	5738	10.54	449	422	.75	19549	35.90
358	45	.08	1119	2.05	404	198	.35	5936	10.90	450	412	.73	19961	36.65
359	38	.07	1157	2.12	405	175	.31	6111	11.22	451	429	.76	20390	37.44
360	50	.09	1207	2.22	406	192	.34	6303	11.57	452	404	.72	20794	38.18
361	44	.08	1251	2.30	407	194	.35	6497	11.93	453	410	.73	21204	38.94
362	51	.09	1302	2.39	408	209	.37	6706	12.31	454	422	.75	21626	39.71
363	57	.10	1359	2.50	409	233	.41	6939	12.74	455	450	.80	22076	40.54
364	53	.09	1412	2.59	410	214	.38	7153	13.14	456	464	.83	22540	41.39
365	51	.09	1463	2.69	411	221	.39	7374	13.54	457	422	.75	22962	42.17
366	54	.10	1517	2.79	412	224	.40	7598	13.95	458	470	.84	23432	43.03
367	48	.09	1565	2.87	413	231	.41	7829	14.38	459	420	.75	23852	43.80
368	58	.10	1623	2.98	414	217	.39	8046	14.77	460	436	.78	24288	44.60
369	69	.12	1692	3.11	415	243	.43	8289	15.22	461	466	.83	24754	45.46
370	78	.14	1770	3.25	416	241	.43	8530	15.66	462	434	.77	25188	46.25
371	74	.13	1844	3.39	417	240	.43	8770	16.10	463	444	.79	25632	47.07
372	99	.18	1943	3.57	418	231	.41	9001	16.53	464	459	.82	26091	47.91
373	78	.14	2021	3.71	419	276	.49	9277	17.04	465	449	.80	26540	48.74
374	71	.13	2092	3.84	420	254	.45	9531	17.50	466	465	.83	27005	49.59
375	97	.17	2189	4.02	421	276	.49	9807	18.01	467	441	.78	27446	50.40
376	72	.13	2261	4.15	422	283	.50	10090	18.53	468	445	.79	27891	51.22
377	105	.19	2366	4.34	423	259	.46	10349	19.00	469	444	.79	28335	52.03
378	97	.17	2463	4.52	424	306	.54	10655	19.57	470	457	.81	28792	52.87
379	74	.13	2537	4.66	425	278	.49	10933	20.08	471	429	.76	29221	53.66
380	93	.17	2630	4.83	426	318	.57	11251	20.66	472	477	.85	29698	54.53
381	101	.18	2731	5.01	427	294	.52	11545	21.20	473	448	.80	30146	55.36
382	92	.16	2823	5.18	428	287	.51	11832	21.73	474	428	.76	30574	56.14
383	93	.17	2916	5.35	429	333	.59	12165	22.34	475	450	.80	31024	56.97
384	99	.18	3015	5.54	430	345	.61	12510	22.97	476	470	.84	31494	57.83
385	126	.22	3141	5.77	431	318	.57	12828	23.56	477	426	.76	31920	58.62
386	121	.22	3262	5.99	432	344	.61	13172	24.19	478	452	.80	32372	59.45
387	126	.22	3388	6.22	433	327	.58	13499	24.79	479	401	.71	32773	60.18
388	108	.19	3496	6.42	434	321	.57	13820	25.38	480	422	.75	33195	60.96

Appendix 3. Writing 3 Scale Score Distribution (Continued)

SS	Freq.	%	Cum. Freq	Cum. %	SS	Freq.	%	Cum. Freq	Cum. %	SS	Freq.	%	Cum. Freq	Cum. %
481	434	.77	33629	61.75	527	266	.47	49034	90.04	574	28	.05	53578	98.39
482	459	.82	34088	62.60	528	68	.12	49102	90.17	575	20	.04	53598	98.42
483	446	.79	34534	63.42	529	316	.56	49418	90.75	576	50	.09	53648	98.51
484	389	.69	34923	64.13	530	114	.20	49532	90.96	577	5	.01	53653	98.52
485	426	.76	35349	64.91	531	336	.60	49868	91.57	578	11	.02	53664	98.54
486	468	.83	35817	65.77	532	61	.11	49929	91.69	579	2	.00	53666	98.55
487	435	.77	36252	66.57	533	88	.16	50017	91.85	580	5	.01	53671	98.56
488	420	.75	36672	67.34	534	72	.13	50089	91.98	581	4	.01	53675	98.56
489	426	.76	37098	68.12	535	67	.12	50156	92.10	582	2	.00	53677	98.57
490	400	.71	37498	68.86	536	201	.36	50357	92.47	583	8	.01	53685	98.58
491	381	.68	37879	69.56	537	190	.34	50547	92.82	585	3	.01	53688	98.59
492	421	.75	38300	70.33	538	63	.11	50610	92.94	586	23	.04	53711	98.63
493	379	.67	38679	71.03	539	30	.05	50640	92.99	587	21	.04	53732	98.67
494	374	.67	39053	71.71	540	39	.07	50679	93.06	588	4	.01	53736	98.68
495	399	.71	39452	72.45	541	71	.13	50750	93.19	589	7	.01	53743	98.69
496	411	.73	39863	73.20	542	1042	1.85	51792	95.11	590	6	.01	53749	98.70
497	357	.64	40220	73.86	543	69	.12	51861	95.23	591	2	.00	53751	98.70
498	402	.72	40622	74.59	544	26	.05	51887	95.28	592	2	.00	53753	98.71
499	363	.65	40985	75.26	545	66	.12	51953	95.40	593	2	.00	53755	98.71
500	352	.63	41337	75.91	546	95	.17	52048	95.58	594	1	.00	53756	98.71
501	335	.60	41672	76.52	547	52	.09	52100	95.67	600	137	.24	53893	98.96
502	359	.64	42031	77.18	548	162	.29	52262	95.97	603	87	.15	53980	99.12
503	359	.64	42390	77.84	549	44	.08	52306	96.05	604	225	.40	54205	99.54
504	394	.70	42784	78.56	550	28	.05	52334	96.10	606	17	.03	54222	99.57
505	388	.69	43172	79.28	551	19	.03	52353	96.14	607	4	.01	54226	99.58
506	250	.44	43422	79.74	552	17	.03	52370	96.17	615	32	.06	54258	99.63
507	317	.56	43739	80.32	553	6	.01	52376	96.18	623	20	.04	54278	99.67
508	320	.57	44059	80.91	554	15	.03	52391	96.21	634	4	.01	54282	99.68
509	387	.69	44446	81.62	555	76	.14	52467	96.35	680	175	.31	54457	100.00
510	299	.53	44745	82.17	556	50	.09	52517	96.44					
511	286	.51	45031	82.69	557	44	.08	52561	96.52					
512	265	.47	45296	83.18	558	30	.05	52591	96.57					
513	217	.39	45513	83.58	559	8	.01	52599	96.59					
514	366	.65	45879	84.25	560	5	.01	52604	96.60					
515	446	.79	46325	85.07	561	10	.02	52614	96.62					
516	282	.50	46607	85.58	562	10	.02	52624	96.63					
517	148	.26	46755	85.86	563	13	.02	52637	96.66					
518	186	.33	46941	86.20	564	608	1.08	53245	97.77					
519	221	.39	47162	86.60	565	24	.04	53269	97.82					
520	155	.28	47317	86.89	566	161	.29	53430	98.11					
521	257	.46	47574	87.36	567	26	.05	53456	98.16					
522	290	.52	47864	87.89	568	3	.01	53459	98.17					
523	405	.72	48269	88.64	570	24	.04	53483	98.21					
524	175	.31	48444	88.96	571	3	.01	53486	98.22					
525	139	.25	48583	89.21	572	56	.10	53542	98.32					
526	185	.33	48768	89.55	573	8	.01	53550	98.33					

Figure 3. Writing 3 Scale Score Distributions for the Total Population, Female, and Male Students



Appendix 2. Spanish Reading 3 Scale Score Distribution

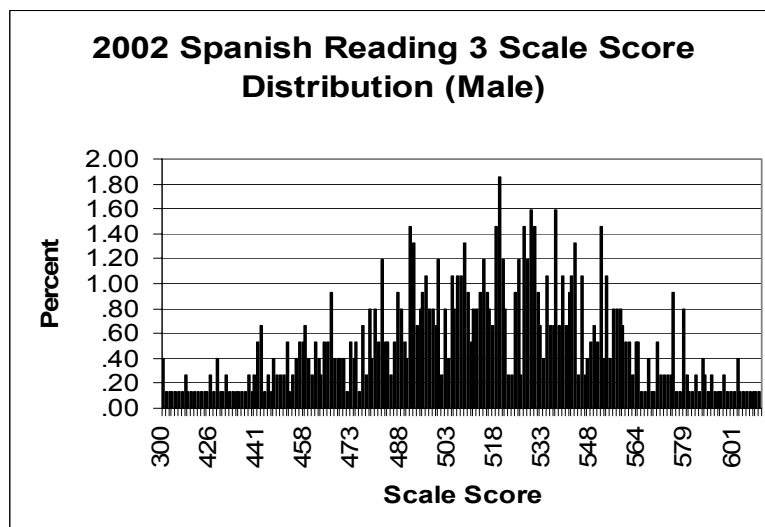
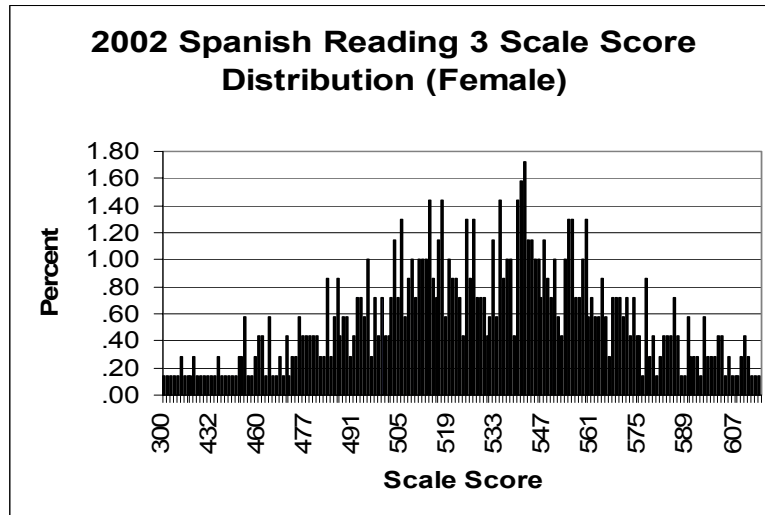
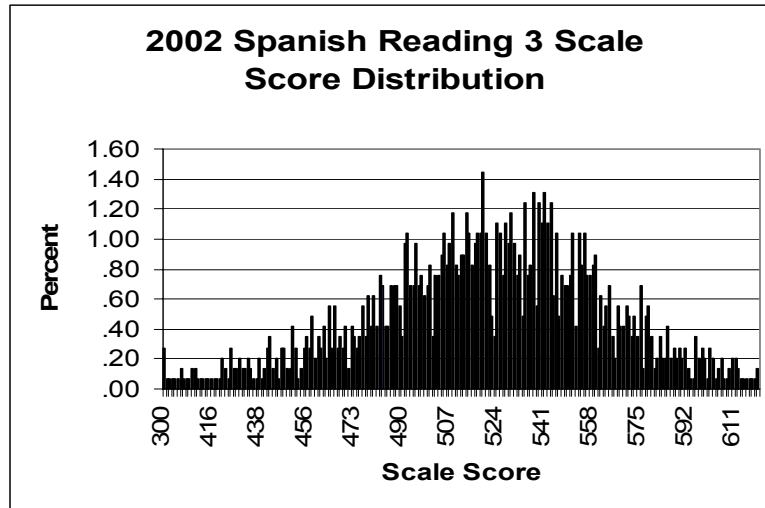
(SS = Scale Score, Freq. = Frequency, Cum. = Cumulative)

SS	Freq.	%	Cum. Freq.	Cum. %	SS	Freq.	%	Cum. Freq.	Cum. %	SS	Freq.	%	Cum. Freq.	Cum. %
300	4	.28	4	.28	447	4	.28	84	5.88	491	14	.96	336	23.51
336	1	.07	5	.35	448	2	.14	86	6.02	492	15	1.03	351	24.56
356	1	.07	6	.42	450	2	.14	88	6.16	493	10	.69	361	25.26
364	1	.07	7	.49	451	6	.41	94	6.58	494	10	.69	371	25.96
372	1	.07	8	.56	452	4	.28	98	6.86	495	14	.96	385	26.94
373	1	.07	9	.63	453	1	.07	99	6.93	496	10	.69	395	27.64
376	2	.14	11	.77	454	2	.14	101	7.07	497	11	.76	406	28.41
386	1	.07	12	.84	455	4	.28	105	7.35	498	9	.62	415	29.04
393	1	.07	13	.91	456	5	.34	110	7.70	499	10	.69	425	29.74
396	1	.07	14	.98	457	4	.28	114	7.98	500	12	.83	437	30.58
397	2	.14	16	1.12	458	7	.48	121	8.47	501	5	.34	442	30.93
400	2	.14	18	1.26	459	3	.21	124	8.68	502	11	.76	453	31.70
402	1	.07	19	1.33	460	5	.34	129	9.03	503	11	.76	464	32.47
404	1	.07	20	1.40	461	4	.28	133	9.31	504	13	.90	477	33.38
408	1	.07	21	1.47	462	6	.41	139	9.73	505	15	1.03	492	34.43
409	1	.07	22	1.54	463	3	.21	142	9.94	506	12	.83	504	35.27
414	1	.07	23	1.61	464	8	.55	150	10.50	507	14	.96	518	36.25
416	1	.07	24	1.68	465	4	.28	154	10.78	508	17	1.17	535	37.44
420	1	.07	25	1.75	466	8	.55	162	11.34	509	12	.83	547	38.28
421	1	.07	26	1.82	467	4	.28	166	11.62	510	11	.76	558	39.05
422	1	.07	27	1.89	468	5	.34	171	11.97	511	13	.90	571	39.96
424	3	.21	30	2.10	469	4	.28	175	12.25	512	13	.90	584	40.87
426	2	.14	32	2.24	470	6	.41	181	12.67	513	17	1.17	601	42.06
427	1	.07	33	2.31	471	2	.14	183	12.81	514	15	1.03	616	43.11
428	4	.28	37	2.59	472	6	.41	189	13.23	515	12	.83	628	43.95
429	2	.14	39	2.73	473	5	.34	194	13.58	516	14	.96	642	44.93
430	2	.14	41	2.87	474	4	.28	198	13.86	517	15	1.03	657	45.98
431	3	.21	44	3.08	475	5	.34	203	14.21	518	15	1.03	672	47.03
432	2	.14	46	3.22	476	8	.55	211	14.77	519	21	1.45	693	48.50
433	2	.14	48	3.36	477	5	.34	216	15.12	520	15	1.03	708	49.55
434	3	.21	51	3.57	478	9	.62	225	15.75	521	12	.83	720	50.38
435	2	.14	53	3.71	479	6	.41	231	16.17	522	7	.48	727	50.87
436	1	.07	54	3.78	480	9	.62	240	16.79	523	5	.34	732	51.22
437	1	.07	55	3.85	481	6	.41	246	17.21	524	16	1.10	748	52.34
438	3	.21	58	4.06	482	11	.76	257	17.98	525	15	1.03	763	53.39
439	1	.07	59	4.13	483	10	.69	267	18.68	526	11	.76	774	54.16
440	2	.14	61	4.27	484	6	.41	273	19.10	527	16	1.10	790	55.28
441	4	.28	65	4.55	485	6	.41	279	19.52	528	14	.96	804	56.26
442	5	.34	70	4.90	486	10	.69	289	20.22	529	17	1.17	821	57.45
443	2	.14	72	5.04	487	10	.69	299	20.92	530	14	.96	835	58.43
444	3	.21	75	5.25	488	10	.69	309	21.62	531	11	.76	846	59.20
445	1	.07	76	5.32	489	8	.55	317	22.18	532	13	.90	859	60.11
446	4	.28	80	5.60	490	5	.34	322	22.53	533	7	.48	866	60.60

Appendix 2. Spanish Reading 3 Scale Score Distribution (Continued)

SS	Freq.	%	Cum. Freq.	Cum. %	SS	Freq.	%	Cum. Freq.	Cum. %	SS	Freq.	%	Cum. Freq.	Cum. %
534	18	1.24	884	61.86	562	6	.41	1223	85.58	590	3	.21	1372	96.01
535	11	.76	895	62.63	563	8	.55	1231	86.14	591	4	.28	1376	96.29
536	12	.83	907	63.47	564	10	.69	1241	86.84	592	2	.14	1378	96.43
537	19	1.31	926	64.80	565	5	.34	1246	87.19	593	1	.07	1379	96.50
538	8	.55	934	65.36	566	3	.21	1249	87.40	594	1	.07	1380	96.57
539	18	1.24	952	66.62	567	8	.55	1257	87.96	595	5	.34	1385	96.92
540	16	1.10	968	67.74	568	6	.41	1263	88.38	596	3	.21	1388	97.13
541	19	1.31	987	69.07	569	6	.41	1269	88.80	598	4	.28	1392	97.41
542	16	1.10	1003	70.19	570	8	.55	1277	89.36	599	3	.21	1395	97.62
543	18	1.24	1021	71.45	571	7	.48	1284	89.85	600	1	.07	1396	97.69
544	9	.62	1030	72.08	572	5	.34	1289	90.20	601	4	.28	1400	97.97
545	15	1.03	1045	73.13	573	7	.48	1296	90.69	602	3	.21	1403	98.18
546	7	.48	1052	73.62	574	5	.34	1301	91.04	603	1	.07	1404	98.25
547	11	.76	1063	74.39	575	10	.69	1311	91.74	604	2	.14	1406	98.39
548	10	.69	1073	75.09	576	2	.14	1313	91.88	605	3	.21	1409	98.60
549	10	.69	1083	75.79	577	7	.48	1320	92.37	606	1	.07	1410	98.67
550	11	.76	1094	76.56	578	8	.55	1328	92.93	607	1	.07	1411	98.74
551	15	1.03	1109	77.61	579	5	.34	1333	93.28	608	2	.14	1413	98.88
552	6	.41	1115	78.03	580	2	.14	1335	93.42	609	3	.21	1416	99.09
553	15	1.03	1130	79.08	581	3	.21	1338	93.63	611	3	.21	1419	99.30
554	12	.83	1142	79.92	582	5	.34	1343	93.98	613	2	.14	1421	99.44
555	15	1.03	1157	80.97	583	3	.21	1346	94.19	619	1	.07	1422	99.51
556	11	.76	1168	81.74	584	3	.21	1349	94.40	624	1	.07	1423	99.58
557	11	.76	1179	82.51	585	6	.41	1355	94.82	632	1	.07	1424	99.65
558	12	.83	1191	83.34	586	3	.21	1358	95.03	635	1	.07	1425	99.72
559	13	.90	1204	84.25	587	4	.28	1362	95.31	636	1	.07	1426	99.79
560	4	.28	1208	84.53	588	3	.21	1365	95.52	649	1	.07	1427	99.86
561	9	.62	1217	85.16	589	4	.28	1369	95.80	691	2	.14	1429	100.00

Figure 2. Spanish Reading 3 Scale Score Distributions for the Total Population, Female, and Male Students



Appendix 1. Reading 3 Scale Score Distribution

(SS = Scale Score, Freq. = Frequency, Cum. = Cumulative)

SS	Freq.	%	Cum. Freq.	Cum. %	SS	Freq.	%	Cum. Freq.	Cum. %	SS	Freq.	%	Cum. Freq.	Cum. %
150	80	.15	80	.15	290	1	.00	149	.28	334	9	.02	350	.65
219	1	.00	81	.15	291	2	.00	151	.28	335	6	.01	356	.66
220	1	.00	82	.15	292	2	.00	153	.29	336	6	.01	362	.68
223	1	.00	83	.15	293	2	.00	155	.29	337	11	.02	373	.70
227	1	.00	84	.16	295	2	.00	157	.29	338	12	.02	385	.72
234	1	.00	85	.16	296	1	.00	158	.29	339	11	.02	396	.74
240	1	.00	86	.16	297	3	.01	161	.30	340	9	.02	405	.76
241	1	.00	87	.16	298	3	.01	164	.31	341	7	.01	412	.77
242	1	.00	88	.16	299	2	.00	166	.31	342	6	.01	418	.78
243	1	.00	89	.17	300	2	.00	168	.31	343	10	.02	428	.80
244	2	.00	91	.17	301	4	.01	172	.32	344	12	.02	440	.82
249	2	.00	93	.17	302	3	.01	175	.33	345	8	.01	448	.84
250	1	.00	94	.18	303	5	.01	180	.34	346	9	.02	457	.85
251	1	.00	95	.18	304	2	.00	182	.34	347	15	.03	472	.88
252	2	.00	97	.18	305	6	.01	188	.35	348	8	.01	480	.90
253	2	.00	99	.18	306	2	.00	190	.35	349	8	.01	488	.91
255	1	.00	100	.19	307	1	.00	191	.36	350	10	.02	498	.93
259	2	.00	102	.19	308	2	.00	193	.36	351	13	.02	511	.95
261	1	.00	103	.19	309	2	.00	195	.36	352	14	.03	525	.98
262	3	.01	106	.20	310	5	.01	200	.37	353	10	.02	535	1.00
264	3	.01	109	.20	311	1	.00	201	.38	354	13	.02	548	1.02
265	1	.00	110	.21	312	3	.01	204	.38	355	7	.01	555	1.04
267	1	.00	111	.21	313	3	.01	207	.39	356	12	.02	567	1.06
269	1	.00	112	.21	314	5	.01	212	.40	357	18	.03	585	1.09
270	1	.00	113	.21	315	6	.01	218	.41	358	12	.02	597	1.11
271	1	.00	114	.21	316	9	.02	227	.42	359	21	.04	618	1.15
272	4	.01	118	.22	317	4	.01	231	.43	360	18	.03	636	1.19
273	1	.00	119	.22	318	7	.01	238	.44	361	17	.03	653	1.22
274	2	.00	121	.23	319	7	.01	245	.46	362	25	.05	678	1.27
275	3	.01	124	.23	320	2	.00	247	.46	363	25	.05	703	1.31
276	1	.00	125	.23	321	7	.01	254	.47	364	9	.02	712	1.33
277	2	.00	127	.24	322	11	.02	265	.49	365	19	.03	731	1.36
278	1	.00	128	.24	323	7	.01	272	.51	366	15	.03	746	1.39
279	1	.00	129	.24	324	6	.01	278	.52	367	14	.03	760	1.42
280	2	.00	131	.24	325	7	.01	285	.53	368	20	.04	780	1.46
281	1	.00	132	.25	326	9	.02	294	.55	369	17	.03	797	1.49
282	2	.00	134	.25	327	7	.01	301	.56	370	19	.03	816	1.52
283	2	.00	136	.25	328	6	.01	307	.57	371	20	.04	836	1.56
284	2	.00	138	.26	329	7	.01	314	.59	372	20	.04	856	1.60
285	3	.01	141	.26	330	8	.01	322	.60	373	12	.02	868	1.62
286	3	.01	144	.27	331	3	.01	325	.61	374	23	.04	891	1.66
287	2	.00	146	.27	332	4	.01	329	.61	375	21	.04	912	1.70
288	2	.00	148	.28	333	12	.02	341	.64	376	11	.02	923	1.72

Appendix 1. Reading 3 Scale Score Distribution (Continued)

SS	Freq.	%	Cum. Freq.	Cum. %	SS	Freq.	%	Cum. Freq.	Cum. %	SS	Freq.	%	Cum. Freq.	Cum. %
377	10	.02	933	1.74	423	42	.08	2280	4.25	469	94	.17	5286	9.86
378	16	.03	949	1.77	424	50	.09	2330	4.35	470	100	.18	5386	10.05
379	17	.03	966	1.80	425	48	.09	2378	4.44	471	102	.19	5488	10.24
380	18	.03	984	1.84	426	40	.07	2418	4.51	472	92	.17	5580	10.41
381	19	.03	1003	1.87	427	39	.07	2457	4.58	473	97	.18	5677	10.59
382	20	.04	1023	1.91	428	47	.09	2504	4.67	474	127	.23	5804	10.83
383	23	.04	1046	1.95	429	58	.11	2562	4.78	475	121	.22	5925	11.06
384	18	.03	1064	1.99	430	42	.08	2604	4.86	476	98	.18	6023	11.24
385	20	.04	1084	2.02	431	47	.09	2651	4.95	477	114	.21	6137	11.45
386	15	.03	1099	2.05	432	32	.06	2683	5.01	478	121	.22	6258	11.68
387	26	.05	1125	2.10	433	53	.10	2736	5.11	479	128	.23	6386	11.92
388	30	.05	1155	2.16	434	53	.10	2789	5.20	480	134	.24	6520	12.17
389	29	.05	1184	2.21	435	43	.08	2832	5.28	481	105	.19	6625	12.36
390	16	.03	1200	2.24	436	54	.10	2886	5.39	482	110	.20	6735	12.57
391	11	.02	1211	2.26	437	57	.10	2943	5.49	483	150	.27	6885	12.85
392	23	.04	1234	2.30	438	41	.07	2984	5.57	484	127	.23	7012	13.08
393	24	.04	1258	2.35	439	47	.09	3031	5.66	485	133	.24	7145	13.33
394	23	.04	1281	2.39	440	63	.12	3094	5.77	486	122	.22	7267	13.56
395	24	.04	1305	2.44	441	55	.10	3149	5.88	487	138	.25	7405	13.82
396	32	.06	1337	2.49	442	56	.10	3205	5.98	488	142	.26	7547	14.08
397	33	.06	1370	2.56	443	70	.13	3275	6.11	489	144	.26	7691	14.35
398	26	.05	1396	2.60	444	68	.12	3343	6.24	490	142	.26	7833	14.62
399	21	.04	1417	2.64	445	61	.11	3404	6.35	491	141	.26	7974	14.88
400	23	.04	1440	2.69	446	62	.11	3466	6.47	492	132	.24	8106	15.13
401	22	.04	1462	2.73	447	66	.12	3532	6.59	493	164	.30	8270	15.43
402	31	.06	1493	2.79	448	70	.13	3602	6.72	494	151	.28	8421	15.71
403	28	.05	1521	2.84	449	60	.11	3662	6.83	495	167	.31	8588	16.03
404	37	.07	1558	2.91	450	59	.11	3721	6.94	496	164	.30	8752	16.33
405	27	.05	1585	2.96	451	70	.13	3791	7.07	497	164	.30	8916	16.64
406	38	.07	1623	3.03	452	69	.13	3860	7.20	498	177	.32	9093	16.97
407	27	.05	1650	3.08	453	84	.15	3944	7.36	499	187	.34	9280	17.32
408	32	.06	1682	3.14	454	83	.15	4027	7.51	500	147	.27	9427	17.59
409	30	.05	1712	3.19	455	78	.14	4105	7.66	501	191	.35	9618	17.95
410	30	.05	1742	3.25	456	68	.12	4173	7.79	502	165	.30	9783	18.26
411	27	.05	1769	3.30	457	80	.15	4253	7.94	503	181	.33	9964	18.59
412	33	.06	1802	3.36	458	77	.14	4330	8.08	504	174	.32	10138	18.92
413	37	.07	1839	3.43	459	81	.15	4411	8.23	505	164	.30	10302	19.22
414	50	.09	1889	3.52	460	72	.13	4483	8.37	506	170	.31	10472	19.54
415	37	.07	1926	3.59	461	77	.14	4560	8.51	507	185	.34	10657	19.89
416	42	.08	1968	3.67	462	75	.14	4635	8.65	508	204	.37	10861	20.27
417	39	.07	2007	3.75	463	96	.18	4731	8.83	509	192	.35	11053	20.63
418	50	.09	2057	3.84	464	88	.16	4819	8.99	510	207	.38	11260	21.01
419	48	.09	2105	3.93	465	82	.15	4901	9.15	511	192	.35	11452	21.37
420	42	.08	2147	4.01	466	98	.18	4999	9.33	512	214	.39	11666	21.77
421	46	.08	2193	4.09	467	94	.17	5093	9.50	513	191	.35	11857	22.13
422	45	.08	2238	4.18	468	99	.18	5192	9.69	514	207	.38	12064	22.51

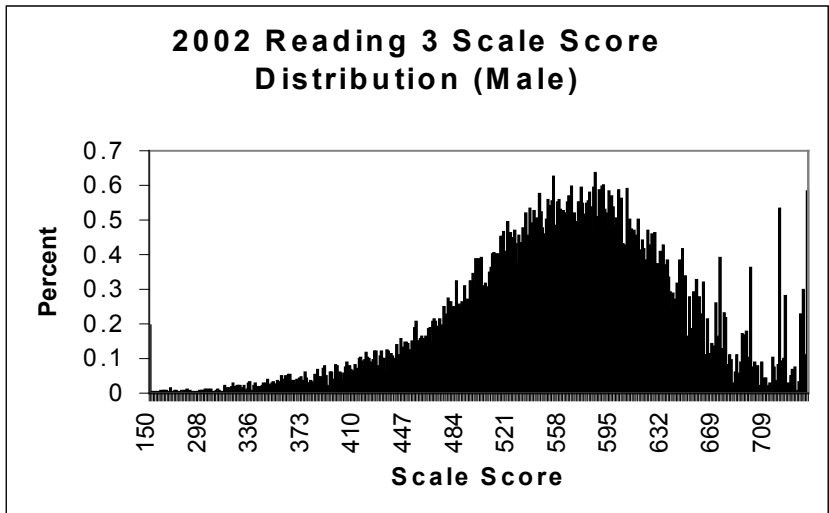
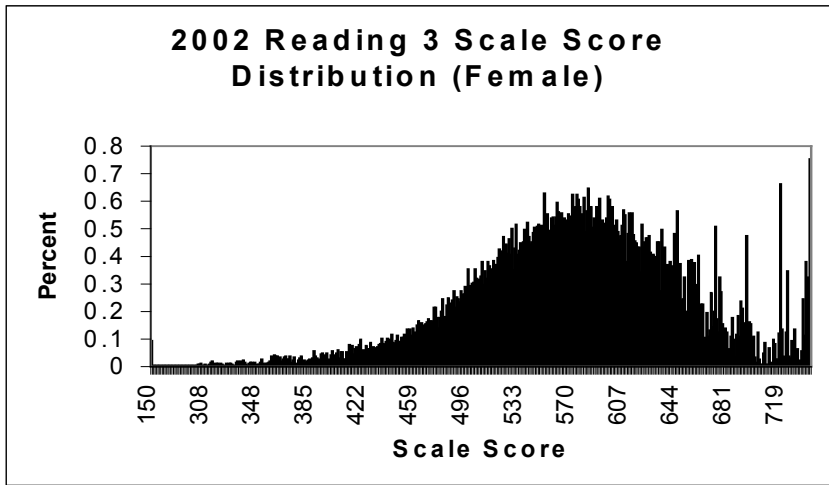
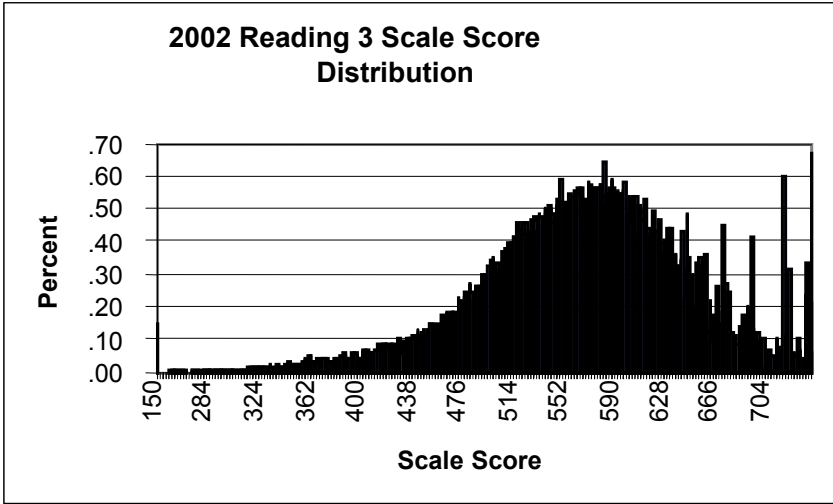
Appendix 1. Reading 3 Scale Score Distribution (Continued)

SS	Freq.	%	Cum. Freq.	Cum. %	SS	Freq.	%	Cum. Freq.	Cum. %	SS	Freq.	%	Cum. Freq.	Cum. %
515	216	.39	12280	22.91	561	304	.56	24226	45.21	607	268	.49	37732	70.41
516	229	.42	12509	23.34	562	293	.54	24519	45.75	608	292	.53	38024	70.95
517	229	.42	12738	23.77	563	290	.53	24809	46.29	609	279	.51	38303	71.47
518	214	.39	12952	24.17	564	308	.56	25117	46.87	610	230	.42	38533	71.90
519	214	.39	13166	24.57	565	300	.55	25417	47.43	611	260	.47	38793	72.39
520	252	.46	13418	25.04	566	311	.57	25728	48.01	612	273	.50	39066	72.90
521	206	.38	13624	25.42	567	276	.50	26004	48.52	613	256	.47	39322	73.38
522	241	.44	13865	25.87	568	287	.52	26291	49.06	614	289	.53	39611	73.91
523	252	.46	14117	26.34	569	286	.52	26577	49.59	615	227	.41	39838	74.34
524	232	.42	14349	26.78	570	267	.49	26844	50.09	616	237	.43	40075	74.78
525	252	.46	14601	27.25	571	291	.53	27135	50.63	617	243	.44	40318	75.23
526	230	.42	14831	27.67	572	321	.59	27456	51.23	618	232	.42	40550	75.67
527	228	.42	15059	28.10	573	316	.58	27772	51.82	619	219	.40	40769	76.08
528	236	.43	15295	28.54	574	308	.56	28080	52.40	620	199	.36	40968	76.45
529	254	.46	15549	29.01	575	292	.53	28372	52.94	621	269	.49	41237	76.95
530	215	.39	15764	29.42	576	306	.56	28678	53.51	622	236	.43	41473	77.39
531	248	.45	16012	29.88	577	308	.56	28986	54.09	623	238	.43	41711	77.83
532	259	.47	16271	30.36	578	301	.55	29287	54.65	624	253	.46	41964	78.31
533	255	.47	16526	30.84	579	311	.57	29598	55.23	625	227	.41	42191	78.73
534	237	.43	16763	31.28	580	314	.57	29912	55.82	626	256	.47	42447	79.21
535	247	.45	17010	31.74	581	263	.48	30175	56.31	627	214	.39	42661	79.61
536	267	.49	17277	32.24	582	317	.58	30492	56.90	628	205	.37	42866	79.99
537	258	.47	17535	32.72	583	351	.64	30843	57.55	629	193	.35	43059	80.35
538	247	.45	17782	33.18	584	296	.54	31139	58.11	630	221	.40	43280	80.76
539	276	.50	18058	33.70	585	279	.51	31418	58.63	631	182	.33	43462	81.10
540	277	.51	18335	34.21	586	300	.55	31718	59.19	632	240	.44	43702	81.55
541	267	.49	18602	34.71	587	291	.53	32009	59.73	633	224	.41	43926	81.97
542	257	.47	18859	35.19	588	310	.57	32319	60.31	634	156	.28	44082	82.26
543	282	.52	19141	35.72	589	323	.59	32642	60.91	635	240	.44	44322	82.71
544	276	.50	19417	36.23	590	290	.53	32932	61.45	636	177	.32	44499	83.04
545	268	.49	19685	36.73	591	308	.56	33240	62.03	637	198	.36	44697	83.41
546	252	.46	19937	37.20	592	268	.49	33508	62.53	638	138	.25	44835	83.66
547	264	.48	20201	37.70	593	305	.56	33813	63.10	639	179	.33	45014	84.00
548	278	.51	20479	38.21	594	272	.50	34085	63.60	640	124	.23	45138	84.23
549	280	.51	20759	38.74	595	298	.54	34383	64.16	641	177	.32	45315	84.56
550	288	.53	21047	39.27	596	294	.54	34677	64.71	642	186	.34	45501	84.91
551	276	.50	21323	39.79	597	299	.55	34976	65.27	643	173	.32	45674	85.23
552	323	.59	21646	40.39	598	303	.55	35279	65.83	644	237	.43	45911	85.67
553	284	.52	21930	40.92	599	268	.49	35547	66.33	645	128	.23	46039	85.91
554	283	.52	22213	41.45	600	319	.58	35866	66.93	646	267	.49	46306	86.41
555	260	.47	22473	41.94	601	259	.47	36125	67.41	647	82	.15	46388	86.56
556	279	.51	22752	42.46	602	294	.54	36419	67.96	648	194	.35	46582	86.92
557	300	.55	23052	43.02	603	262	.48	36681	68.45	649	110	.20	46692	87.13
558	294	.54	23346	43.56	604	250	.46	36931	68.91	650	108	.20	46800	87.33
559	284	.52	23630	44.09	605	241	.44	37172	69.36	651	164	.30	46964	87.64
560	292	.53	23922	44.64	606	292	.53	37464	69.91	652	96	.18	47060	87.81

Appendix 1. Reading 3 Scale Score Distribution (Continued)

SS	Freq.	%	Cum. Freq.	Cum. %	SS	Freq.	%	Cum. Freq.	Cum. %	SS	Freq.	%	Cum. Freq.	Cum. %
653	105	.19	47165	88.01	683	25	.05	50262	93.79	714	2	.00	51664	96.41
654	184	.34	47349	88.35	684	46	.08	50308	93.88	715	55	.10	51719	96.51
655	104	.19	47453	88.55	685	78	.14	50386	94.02	716	43	.08	51762	96.59
656	195	.36	47648	88.91	686	42	.08	50428	94.10	717	17	.03	51779	96.62
657	139	.25	47787	89.17	687	21	.04	50449	94.14	718	10	.02	51789	96.64
658	178	.33	47965	89.50	688	56	.10	50505	94.24	719	55	.10	51844	96.74
659	140	.26	48105	89.76	689	97	.18	50602	94.42	720	327	.60	52171	97.35
660	119	.22	48224	89.99	690	48	.09	50650	94.51	721	62	.11	52233	97.47
661	197	.36	48421	90.35	691	110	.20	50760	94.72	722	16	.03	52249	97.50
662	66	.12	48487	90.48	692	106	.19	50866	94.92	724	4	.01	52253	97.51
663	91	.17	48578	90.65	693	51	.09	50917	95.01	726	61	.11	52314	97.62
664	120	.22	48698	90.87	694	71	.13	50988	95.14	727	171	.31	52485	97.94
665	52	.09	48750	90.97	695	229	.42	51217	95.57	728	18	.03	52503	97.97
666	55	.10	48805	91.07	696	37	.07	51254	95.64	729	11	.02	52514	97.99
667	92	.17	48897	91.24	697	64	.12	51318	95.76	731	33	.06	52547	98.05
668	49	.09	48946	91.33	698	67	.12	51385	95.89	734	28	.05	52575	98.11
669	73	.13	49019	91.47	699	26	.05	51411	95.93	735	55	.10	52630	98.21
670	144	.26	49163	91.74	700	51	.09	51462	96.03	741	6	.01	52636	98.22
671	81	.15	49244	91.89	701	14	.03	51476	96.06	743	38	.07	52674	98.29
672	99	.18	49343	92.08	702	10	.02	51486	96.07	751	6	.01	52680	98.30
673	246	.45	49589	92.53	703	58	.11	51544	96.18	755	8	.01	52688	98.32
674	83	.15	49672	92.69	704	9	.02	51553	96.20	758	24	.04	52712	98.36
675	49	.09	49721	92.78	706	2	.00	51555	96.20	764	129	.24	52841	98.60
676	151	.28	49872	93.06	707	2	.00	51557	96.21	766	52	.09	52893	98.70
677	133	.24	50005	93.31	708	25	.05	51582	96.25	776	185	.34	53078	99.04
678	64	.12	50069	93.43	709	35	.06	51617	96.32	777	117	.21	53195	99.26
679	26	.05	50095	93.48	710	5	.01	51622	96.33	793	31	.06	53226	99.32
680	68	.12	50163	93.61	711	8	.01	51630	96.34	795	364	.66	53590	100.00
681	60	.11	50223	93.72	712	26	.05	51656	96.39					
682	14	.03	50237	93.74	713	6	.01	51662	96.40					

Figure 1. Reading 3 Scale Score Distributions for the Total Population, Female, and Male Students



The mean percents of the maximum obtainable score for the content standards range from 60.4 on CS 5 (Use of Literary Information) to 65.4 on CS 1 (Reading Comprehension). The mean percent of the maximum obtainable score for the total test is 63.5. The mean percents of the maximum obtainable score for the sub-content areas range from 56.8 to 68.2.

Writing

The mean scale score for the total population of students taking the 2002 tenth-grade Writing assessment is 582 with a standard deviation of 80.2. The mean scale score for female students is 597 with a standard deviation of 76.7, and the mean scale score for male students is 568 with a standard deviation of 80.9.

The scale score frequency distribution for the total population is shown in Appendix 25. Figure 25 graphically represents the frequency distributions for the total population and for the groups of male and female students separately. The figure shows that the scale score distributions for the total population and for each gender are approximately normal.

The mean scale scores for CS 1 (Write for a Variety of Purposes) and CS 2 (Write Using Conventions) are 586 and 584 with standard deviations of 84.1 and 96.9, respectively. They are relatively similar in magnitude, indicating that students performed similarly on all reading standards. The mean scale scores for the sub-content areas range from 587 on SA 5 (Paragraph Writing) to 606 on SA 6 (Extended Writing). The median scale scores vary between 578 and 586 for the content standards, and between 580 and 588 for the sub-content areas, and all are close to the median for the total test scale score, 583.

The mean percents of the maximum obtainable score for CS 2 (Write for a Variety of Purposes) and CS 3 (Write Using Conventions) are 67.0 and 70.5, respectively. The mean percent of the maximum obtainable score for the total test is 68.3. The mean percents of the maximum obtainable score for the sub-content areas vary from 62.5 to 71.8.

Mathematics

The mean scale score for all students taking the 2002 tenth-grade Mathematics assessment is 583 with a standard deviation of 71.6. The mean scale score for female students is 582 with a standard deviation of 67.4, and the mean scale score for male students is 584 with a standard deviation of 75.6.

The scale score frequency distribution for the total population is shown in Appendix 26. Figure 26 graphically represents the frequency distributions for the total population and for the groups of male and female students separately. The figure shows that the scale score distributions for the total population and for each gender are slightly negatively skewed.

The mean scale scores for the content standards range from 573 on CS 4/5 (Geometry and Measurement) to 583 on CS 3 (Statistics and Probability). The mean scale scores for the sub-

content areas are 578 on SA 1 (Multiple Representations of Functions) and 581 on SA 2 (Probability and Counting Techniques). The median scale scores vary between 589 and 593 for the content standards, and are 594 for both sub-content areas, and all are close to the median for the total test scale score, 592.

The mean percents of the maximum obtainable score for the content standards range from 34.3 on CS 4/5 (Geometry and Measurement) to 45.7 on CS 1/6 (Number Sense and Computational Techniques). The mean percent of the maximum obtainable score for the total test is 41.6. The mean percents of the maximum obtainable score for SA 1 (Multiple Representations of Functions) and SA 2 (Probability and Counting Techniques) are 37.2 and 41.4, respectively.

The Correlations Between the Content Standards and Between the Sub-Content Areas

Tables 13 through 15 show the correlations between the scale scores for the total test and for the various content standards and sub-content areas, for each grade and content area. All content standards and sub-content areas are positively correlated, as would be expected.

For the Reading assessments, the correlation coefficients vary between .56 (grade 8) and .77 (grade 6) for the relationship between the various content standards, and between .46 (grade 7) and .82 (grade 6) for the relationship between the various sub-content areas, respectively.

For the Spanish Reading assessments, the correlations among the various content standards vary between .60 and .74; they vary between .54 and .70 among the various sub-content areas.

For the Writing assessments, the coefficients for the correlation between content standards 2 and 3 vary between .60 (grade 3) and .79 (grade 9). The correlations among the various sub-content areas vary between .38 (grade 7) and .67 (grade 6); each time (except in grade 4) the lowest correlation is found for the relationship between SA 6, Extended Writing, and SA 7, Grammar and Usage (grade 3 did not include Extended Writing).

For the Spanish Writing assessment, the correlation between content standards 2 and 3 is .65; the correlations between the various sub-content areas vary between .45 and .53.

For the Mathematics assessments, the correlations vary between .63 (grade 6) and .79 (grade 9) for the relationship among the content standards, and between .55 (grades 5 and 6) and .67 (grade 10) for the relationship among the sub-content areas.

Finally, for the Science assessment, the correlation coefficients vary between .63 and .73 for the relationship among the content standards, and between .49 and .60 for the relationship among the sub-content areas.

Test Reliability

Reliability is an index of the consistency of test results. A reliable test is one that produces scores that are expected to be relatively stable if the test is administered repeatedly under similar conditions. Cronbach's alpha is a frequently used measure of internal consistency. Based on a single administration of a test, Cronbach's alpha provides a reliability estimate that equals the average of all split-half coefficients that would be obtained on all possible divisions of the test into halves. Such a split-half coefficient would be obtained by correlating one half of the test with the other half and then adjusting the correlation with the Spearman-Brown formula so that it applies to the whole test (see Allen & Yen, 1979, pp. 83-88).

Table 16 shows the estimated reliability index (Cronbach's alpha) for the total test for each grade and content area. The alphas for Reading are .90 and .93 for grades 3 and 4, respectively, and .94 for grades 5 through 10. The alphas for grades 3 and 4 Spanish Reading are .87 and .91, respectively. The alphas for grades 3 through 10 Writing are .91, .91, .91, .92, .90, .91, .92, and .91, respectively. The alpha for grade 4 Spanish Writing is .88. The alphas for Mathematics are .94 for grades 5 and 6 and .93 for grades 7 through 10. The alpha for grade 8 Science is .93. These are all high to very high reliabilities and indicate that the Colorado 2002 assessments had strong internal consistency and that the tests produced relatively stable scores.

Tables 16 and 17 show the estimated reliability index (Cronbach's alpha) for each of the content standards and sub-content areas, respectively, for each grade and content area for the 2002 assessments.

For Reading grades 4 through 10, the alphas for the various content standards vary between .67 (for CS 6 in grade 6) and .87 (for CS 1 in grade 6), with a median of .78. For Reading grades 3 through 10, the alphas for the various sub-content areas vary between .51 (for SA 3 in grades 5 through 7) and .88 (for SA 1 in grade 6, and SA 2 in grade 7), with a median of .78.

For the Spanish version of the Reading assessment for grade 4, the alphas for the various content standards vary between .56 and .80 (for CS 6 and 1, respectively), with a median of .71. For the Spanish versions of the Reading assessment for grades 3 and 4, the alphas for the various sub-content areas vary between .52 and .83 (for SA 3 in grade 4 and SA 1 in grade 3, respectively), with a median of .71.

For Writing grades 3 through 10, the alphas for the various content standards vary between .75 and .88 (for CS 2 and 3, respectively, in grade 3) with a median of .84. The alphas for the various sub-content areas vary between .62 and .82 (for SA 7, in grades 7 and 3, respectively), with a median of .74.

For the Spanish version of the Writing assessment for grade 4, the alphas for the various content standards vary between .75 and .85 (for CS 2 and 3, respectively). The alphas for the various sub-content areas vary between .60 and .79 (for SA 8 and 7, respectively), with a median of .67.

For Mathematics grades 5 through 10, the alphas for the various content standards vary between .68 and .83 (for CS 3 in grade 7 and CS 2 in grade 9, respectively) with a median of .76. The alphas for the various sub-content areas vary between .54 and .80 (for SA 2 in grade 6 and SA 1 in grade 9, respectively), with a median of .67.

For grade 8 Science, the alphas for the various content standards vary between .57 and .81 (for CS 5 and 1, respectively) with a median of .75. The alphas for the various sub-content areas vary between .56 and .73 (for SA 5 and 4, respectively), with a median of .65.

The alpha internal consistency coefficients generally are lower for the various subtest scores than they are for the total test scores. This is not that surprising, given that the scores for the content standards and the sub-content areas are based on fewer items than those for the total test scores.

Part 4: Item Analyses

Tables 18 through 69 display the item analysis results for both multiple-choice (MC) and constructed-response (CR) items for each grade and content area. The product-moment correlation coefficient is used to estimate the item-to-total-score correlation (r_{itt}) for each item. The coefficient for each item is based on the item score and the score computed as the total of all *other* items on the test (hence, the item itself is excluded from the total score). For items having only two levels, the product-moment coefficient is the point-biserial correlation. The p-value for each MC item is the percent of students who gave a correct response to the item. The p-value for each CR item is the mean percent of the maximum possible score. The item-to-total-score correlations, the p-values, the percentage of omits, and the percentages at each score level (for the CR items) are based on the analysis of responses of students who had valid total test scores only. Any omitted responses to individual items were treated as incorrect for the calculation of the p-values and the item-to-total-score correlations. This was consistent with how these omits are treated in the computation of the operational scale scores.

Third Grade

Reading

Table 18 lists the results of the multiple-choice item analyses for the 2002 third-grade Reading assessment. The point-biserials for all multiple-choice items range from .18 to .60 with a mean of .44. The p-values for these items range from .29 to .96 with a mean of .79.

Table 19 lists the results of the constructed-response item analyses. The item-to-total-score correlations for the constructed-response items range from .33 to .56 with a mean of .46. Their p-values range from .36 to .94 with a mean of .70. An examination of the percent of students obtaining each score point for the constructed-response items shows that there is a

reasonable amount of variability in students' responses to most items, indicating that these items work well over the range of student ability.

For three of the eight constructed-response items, over 85% of the students obtained the highest possible score points. The scores of the remaining students were well distributed across the remaining score points.

The omit rate for the third-grade Reading assessment was small, ranging from .0% to 1.1% for multiple-choice items (Table 18) and .5% to 1.1% for constructed-response items (Table 19).

Reading – Spanish Version

Table 20 lists the results of the multiple-choice item analyses for the Spanish version of the 2002 third-grade Reading assessment. The point-biserials for all multiple-choice items range from .03 to .49 with a mean of .34. The p-values for these items range from .24 to .90 with a mean of .65.

Table 21 lists the results of the constructed-response item analyses. The item-to-total-score correlations for the constructed-response items range from .29 to .57 with a mean of .43. Their p-values range from .45 to .84, with a mean of .62. An examination of the percent of students obtaining each score point for the constructed-response items shows that there is a reasonable amount of variability in students' responses to most items, indicating that these items work reasonably well over the range of student ability.

The omit rate for the Spanish version of the third-grade Reading assessment was small, ranging from .1% to 2.5% for multiple-choice items (Table 20) and .5% to 5.0% for constructed-response items (Table 21), with only one item having a 5% omit rate.

Writing

Table 22 lists the results of the multiple-choice item analyses for the 2002 third-grade Writing assessment. The point-biserials for all multiple-choice items range from .25 to .51 with a mean of .40. The p-values for these items range from .56 to .98 with a mean of .81.

Table 23 lists the results of the constructed-response item analyses. The item-to-total-score correlations for the constructed-response items range from .22 to .48 with a mean of .37. Their p-values range from .53 to .98, with a mean of .81. For 14 out of the 18 constructed-response items, over 80% of the students obtained the highest possible score points.

The omit rate for the third-grade Writing assessment was small, ranging from .1% to 3.4% for multiple-choice items (Table 22) and from .2% to .6% for constructed-response items (Table 23).

Fourth Grade

Reading

Table 24 lists the results of the multiple-choice item analyses for the 2002 fourth-grade Reading assessment. The point-biserials for the multiple-choice items range from .01 to .53 with a mean of .41. The p-values for the multiple-choice items range from .29 to .94 with a mean of .73. MC item 22 appears to discriminate less well between high and low performing students. It was also flagged as showing less than optimal fit in the IRT analysis.

Table 25 lists the results of the constructed-response item analyses. The item-to-total-score correlations for the constructed-response items range from .28 to .66 with a mean of .45. Their p-values range from .26 to .93 with a mean of .59. An examination of the percent of students obtaining each score point for the constructed-response items shows that there is a good amount of variability in students' responses to most items, indicating that these items work well over the range of student ability. Over 50% of the students obtained the highest possible score points in 6 out of 15 constructed-response items. The scores of the remaining students were well distributed across the score points, indicating that these items produced a reasonable amount of variability.

The omit rate for the fourth-grade Reading assessment was reasonable, ranging from .1% to 1.9% for multiple-choice items (Table 24). The range was .4% to 1.6% for constructed-response items (Table 25).

Reading – Spanish Version

Table 26 lists the results of the multiple-choice item analyses for the Spanish version of the 2002 fourth-grade Reading assessment. The point-biserials for all multiple-choice items range from .03 to .49 with a mean of .33. The p-values for these items range from .20 to .92 with a mean of .57.

Table 27 lists the results of the constructed-response item analyses. The item-to-total-score correlations for the constructed-response items range from .25 to .60 with a mean of .46. Their p-values range from .17 to .87, with a mean of .53. An examination of the percent of students obtaining each score point for the constructed-response items shows that there is a reasonable amount of variability in students' responses to most items, indicating that these items work reasonably well over the range of student ability.

The omit rate for the Spanish version of the third-grade Reading assessment was small, ranging from .0% to 6.0% for multiple-choice items (Table 26) and .3% to 4.3% for constructed-response items (Table 27), with only four multiple-choice items having an omit rate of 5% or higher.

Writing

Table 28 lists the results of the multiple-choice item analyses for the 2002 fourth-grade Writing assessment. The point-biserials for all multiple-choice items range from .28 to .49 with a mean of .39. The p-values for these items range from .40 to .96 with a mean of .75.

Table 29 lists the results of the constructed-response item analyses. The item-to-total-score correlations for the constructed-response items range from .05 to .62 with a mean of .43. Their p-values range from .46 to 1.00, with a mean of .71.

The omit rate for the fourth-grade Writing assessment was small, ranging from .1% to 2.5% for multiple-choice items (Table 28) and .0% to 1.2% for constructed-response items (Table 29).

Writing – Spanish Version

Table 30 lists the results of the multiple-choice item analyses for the Spanish version of the 2002 fourth-grade Writing assessment. The point-biserials for all multiple-choice items range from .00 to .48 with a mean of .30. The p-values for these items range from .25 to .94 with a mean of .55.

Table 31 lists the results of the constructed-response item analyses. The item-to-total-score correlations for the constructed response items range from .10 to .59 with a mean of .42. Their p-values range from .37 to .97 with a mean of .63.

The omit rate for the fourth-grade Writing assessment was small, ranging from .2% to 2.9% for multiple-choice items (Table 30) and .0% to 5.8% for constructed-response items (Table 31), with only one item having an omit rate greater than 5%.

Fifth Grade

Reading

Table 32 lists the results of the multiple-choice item analyses for the 2002 fifth-grade Reading assessment. When item 122 is not taken into account, the point-biserials for the multiple-choice items range from .06 to .60, with a mean of .40. The p-values for the multiple-choice items range from .20 to .95 with a mean of .70. MC item 122 did not discriminate between low or high ability students, and thus did not provide useful information on student ability. This item was removed from the operational test results for this reason.

Table 33 lists the results of the constructed-response item analyses. The item-to-total-score correlations for the constructed-response items range from .30 to .64 with a mean of .51. Their p-values range from .40 to .71 with a mean of .54. The distribution of percent of students obtaining score level for the constructed-response items shows that there is a good amount of variability in students' responses to most items, indicating that these items work well over the range of student ability. Approximately 55% of the students obtained the highest possible score points for 1 out of the 14 constructed-response items. The scores of the remaining students were well distributed across the score points in that item, indicating that it produced a reasonable amount of variability.

The omit rate for the fifth-grade Reading assessment was small, ranging from .1% to 4.0% for multiple-choice items (Table 32) and .5% to 5.8% for constructed-response items (Table 33), with only one constructed-response item having an omit rate greater than 5%.

Writing

Table 34 lists the results of the multiple-choice item analyses for the 2002 fifth-grade Writing assessment. The point-biserials for all multiple-choice items range from .21 to .52 with a mean of .38. The p-values for these items range from .35 to .97 with a mean of .70.

Table 35 lists the results of the constructed-response item analyses. The item-to-total-score correlations for the constructed-response items range from .06 to .65 with a mean of .43. Their p-values range from .09 to 1.00, with a mean of .62.

The omit rate for the fifth-grade Writing assessment was small, ranging from .1% to 3.1% for multiple-choice items (Table 34) and .0% to 1.1% for constructed-response items (Table 35).

Mathematics

Table 36 lists the results of the multiple-choice item analyses for the 2002 fifth-grade Mathematics assessment. The point-biserials for the multiple-choice items range from .21 to .53, with a mean of .41. The p-values for the multiple-choice items range from .38 to .92 with a mean of .72.

Table 37 lists the results of the constructed-response item analyses. The item-to-total-score correlations for the constructed-response items range from .49 to .65 with a mean of .56. Their p-values range from .40 to .83 with a mean of .63. The distribution of the percent of students obtaining each score point for the constructed-response items shows that there is a good amount of variability in students' responses to most items, indicating that these items work well over the range of student ability.

The omit rate for the fifth-grade Mathematics assessment was reasonable, ranging from .1% to .8% for multiple-choice items (Table 36) and .2% to 1.8% for constructed-response items (Table 37).

Sixth Grade

Reading

Table 38 lists the results of the multiple-choice item analyses for the 2002 sixth-grade Reading assessment. The point-biserials for the multiple-choice items range from .06 to .55 with a mean of .39. The p-values for the multiple-choice items range from .22 to .91 with a mean of .67.

Table 39 lists the results of the constructed-response item analyses. The item-to-total-score correlations for the constructed-response items range from .39 to .65 with a mean of .53. Their p-values range from .36 to .80 with a mean of .59. An examination of the percent of students obtaining each score point for the constructed-response items shows that there is a good amount of variability in students' responses to most items, indicating that these items work well over the range of student ability. Over 50% of the students obtained the highest possible score points in 7 out of the 16 constructed-response items. The scores of the

remaining students were well distributed across the score points, indicating that these items produced a reasonable amount of variability.

The omit rate for the sixth-grade Reading assessment was small, ranging from .1% to 4.1% for multiple-choice items (Table 38) and .7% to 5.5% for constructed-response items, with only one item having an omit rate greater than 5% (Table 39).

Writing

Table 40 lists the results of the multiple-choice item analyses for the 2002 sixth-grade Writing assessment. The point-biserials for all multiple-choice items range from .23 to .53 with a mean of .39. The p-values for these items range from .30 to .89 with a mean of .64.

Table 41 lists the results of the constructed-response item analyses. The item-to-total-score correlations for the constructed-response items range from .09 to .62 with a mean of .45. Their p-values range from .31 to .99 with a mean of .68.

The omit rate for the sixth-grade Writing assessment was small, ranging from .1% to 2.2% for multiple-choice items (Table 40) and .0% to 3.1% for constructed-response items (Table 41).

Mathematics

Table 42 lists the results of the multiple-choice item analyses for the 2002 sixth-grade Mathematics assessment. The point-biserials for the multiple-choice items range from .29 to .55, with a mean of .41. The p-values for the multiple-choice items range from .30 to .94 with a mean of .68.

Table 43 lists the results of the constructed-response item analyses. The item-to-total-score correlations for the constructed-response items range from .37 to .70 with a mean of .55. Their p-values range from .34 to .87 with a mean of .60. The distribution of the percent of students obtaining each score point for the constructed-response items shows that there is a good amount of variability in students' responses to most items, indicating that these items work well over the range of student ability.

The omit rate for the sixth-grade Mathematics assessment was reasonable, ranging from .0% to 1.2% for multiple-choice items (Table 42) and .3% to 3.1% for constructed-response items (Table 43).

Seventh Grade

Reading

Table 44 lists the results of the multiple-choice item analyses for the 2002 seventh-grade Reading assessment. The point-biserials for the multiple-choice items are positive, ranging from .09 to .56 with a mean of .39. The p-values for the multiple-choice items range from .34 to .96 with a mean of .71.

Table 45 lists the results of the constructed-response item analyses. The item-to-total-score correlations for the constructed-response items are positive, ranging from .44 to .67 with a mean of .56. The p-values for the constructed-response items range from .34 to .84 with a mean of .64. An examination of the percent of students obtaining each score point for the Reading constructed-response items shows that there is a good amount of variability in students' responses to most items, indicating that these items work well over the range of student ability. Over 50% of the students obtained the highest possible score points in 6 out of the 15 constructed-response items. The scores of the remaining students are well distributed across the score points, indicating that these items produced a reasonable amount of variability.

The percent of students who omitted the multiple-choice items in the 2002 grade 7 Reading assessment ranged from .1% to 3.8% (Table 44). The percent of students who omitted constructed-response items ranged from 1.7% to 8.9% (Table 45), with 7 out of 15 of the items having an omit rate equal or greater than 5%.

Writing

Table 46 lists the results of the multiple-choice item analyses for the 2002 seventh-grade Writing assessment. The point-biserials for all multiple-choice items range from .10 to .50 with a mean of .36. The p-values for these items range from .29 to .95 with a mean of .66.

Table 47 lists the results of the constructed-response item analyses. The item-to-total-score correlations for the constructed-response items range from .11 to .62 with a mean of .42. Their p-values range from .32 to .99, with a mean of .56.

The omit rate for the seventh-grade Writing assessment was small, ranging from .2% to 2.9% for multiple-choice items (Table 46) and .0% to 4.1% for constructed-response items (Table 47).

Mathematics

Table 48 lists the results of the multiple-choice item analyses for the 2002 seventh-grade Mathematics assessment. The point-biserials for the multiple-choice items range from .09 to .59, with a mean of .38. The p-values for the multiple-choice items range from .36 to .93 with a mean of .66.

Table 49 lists the results of the constructed-response item analyses. The item-to-total-score correlations for the constructed-response items range from .30 to .70 with a mean of .57. Their p-values range from .19 to .91 with a mean of .43. The distribution of the percent of students obtaining each score point for the constructed-response items shows that there is a good amount of variability in students' responses to most items, indicating that these items work well over the range of student ability.

The omit rate for the seventh-grade Mathematics assessment was reasonable, ranging from .1% to 1.8% for multiple-choice items (Table 48) and .6% to 6.8% for constructed-response items (Table 49), with two constructed-response items having an omit rate greater than 5%.

Eighth Grade

Reading

Table 50 lists the results of the multiple-choice item analyses for the 2002 eighth-grade Reading assessment. The point-biserials for the multiple-choice items range from .03 to .56 with a mean of .40. The p-values for the multiple-choice items range from .18 to .95 with a mean of .73.

Table 51 lists the results of the constructed-response item analyses. The item-to-total-score correlations for the constructed-response items range from .37 to .64 with a mean of .51. Their p-values range from .34 to .83 with a mean of .57. The distribution of the percent of students obtaining each score point for the constructed-response items shows a good amount of variability in students' responses to most items. Over 50% of the students obtained the highest possible score points in 4 out of the 14 constructed-response items. The scores of the remaining students were well distributed across the score points, indicating that these items produced a reasonable amount of variability.

The percent of students who omitted the multiple-choice items in the eighth-grade Reading assessment ranged from .1% to 1.8% (Table 50). The percent of students who omitted the constructed-response items ranged from .5% to 7.4% (Table 51), with only one item having an omit rate greater than 5%. Note that the higher omit rates are associated with the item difficulties.

Writing

Table 52 lists the results of the multiple-choice item analyses for the 2002 eighth-grade Writing assessment. The point-biserials for all multiple-choice items range from .01 to .56 with a mean of .38. The p-values for these items range from .29 to .96 with a mean of .71.

Table 53 lists the results of the constructed-response item analyses. The item-to-total-score correlations for the constructed-response items range from .15 to .63 with a mean of .45. Their p-values range from .32 to .99, with a mean of .69.

The omit rate for the eighth-grade Writing assessment was small, ranging from .1% to 2.2% for multiple-choice items (Table 52) and .0% to 1.5% for constructed-response items (Table 53).

Mathematics

Table 54 lists the results of the multiple-choice item analyses for the 2002 eighth-grade Mathematics assessment. Without item 2, the point-biserials for the multiple-choice items range from .09 to .54 with a mean of .38. The p-values for the multiple-choice items range from .14 to .86 with a mean of .59. Multiple-choice item 2 did not discriminate between low or high ability students (it had a point-biserial of -.03), and thus did not provide useful information on student ability. This item was removed from the operational test results for this reason.

Table 55 lists the results of the constructed-response item analyses. The item-to-total-score correlations for the constructed-response items range from .34 to .71 with a mean of .58.

Their p-values range from .06 to .64 with a mean of .41. An examination of the percent of students obtaining each score point for the Mathematics constructed-response items shows a good amount of variability in students' responses to most items, indicating that these items work well over the range of student ability.

The percent of students who omitted multiple-choice items in the eighth-grade Mathematics assessment ranged from .1% to 1.0% (Table 54). The percent of students who omitted constructed-response items ranged from 1.0% to 7.7%, with 2 constructed-response items having an omit rate greater than 5% (Table 55).

Science

Table 56 lists the results of the multiple-choice item analyses for the 2002 eighth-grade Science assessment. The point-biserials for the multiple-choice items range from .18 to .56 with a mean of .37. The p-values for the multiple-choice items range from .31 to .92 with a mean of .66.

Table 57 lists the results of the constructed-response item analyses. The item-to-total-score correlations for the constructed-response items range from .17 to .60 with a mean of .40. Their p-values range from .07 to .76 with a mean of .48. The percent of students obtaining each score point for the constructed-response items shows a good amount of variability in students' responses to most items, indicating that these items work well over the range of student ability.

The omit rate for the multiple-choice items for the eighth-grade Science assessment ranged from .1% to 4.5% (Table 56). The omit rate for the constructed-response items ranged from .7% to 6.2% (Table 57), with only one item having an omit rate greater than 5%.

Ninth Grade

Reading

Table 58 lists the results of the multiple-choice item analyses for the 2002 ninth-grade Reading assessment. The point-biserials for the multiple-choice items range from .15 to .57 with a mean of .40. The p-values for the multiple-choice items range from .24 to .94 with a mean of .70.

Table 59 lists the results of the constructed-response item analyses. The item-to-total-score correlations for the constructed-response items range from .47 to .69 with a mean of .57. Their p-values range from .40 to .81 with a mean of .57. The percent of students obtaining each score point for the constructed-response items shows a good amount of variability in students' responses to most items, indicating that these items work well over the range of student ability. Over 50% of the students obtained the highest possible score points in 4 out of the 15 constructed-response items. The scores of the remaining students were well distributed across the score points, indicating that these items produced a reasonable amount of variability.

The omit rate for the multiple-choice items for the ninth-grade Reading assessment ranged from .1% to 3.0% (Table 58). The omit rate for the constructed-response items ranged from .8% to 10.3%, with 8 out of the 15 items having an omit rate greater than 5% (Table 59).

Writing

Table 60 lists the results of the multiple-choice item analyses for the 2002 ninth-grade Writing assessment. The point-biserials for all multiple-choice items range from .07 to .55 with a mean of .40. The p-values for these items range from .28 to .94 with a mean of .68.

Table 61 lists the results of the constructed-response item analyses. The item-to-total-score correlations for the constructed-response items range from .19 to .64 with a mean of .46. Their p-values range from .31 to .98, with a mean of .67.

The omit rate for the ninth-grade Writing assessment was small, ranging from .1% to 3.7% for multiple-choice items (Table 60) and .0% to 4.0% for constructed-response items (Table 61).

Mathematics

Table 62 lists the results of the multiple-choice item analyses for the 2002 ninth-grade Mathematics assessment. The point-biserials for the multiple-choice items range from .03 to .54 with a mean of .38. The p-values for the multiple-choice items range from .11 to .88 with a mean of .57.

Table 63 lists the results of the constructed-response item analyses. The item-to-total-score correlations for the constructed-response items range from .13 to .70 with a mean of .56. Their p-values range from .03 to .48 with a mean of .26. An examination of the percent of students obtaining each score point for the Mathematics constructed-response items shows a fair amount of variability in students' responses to most items, indicating that these items work well over the range of student ability.

The percent of students who omitted multiple-choice items in the ninth-grade Mathematics assessment ranged from .2% to 5.1% (Table 62), with one item having an omit rate greater than 5%. The percent of students who omitted constructed-response items ranged from 1.4% to 11.3% with 8 out of the 15 constructed-response items having an omit rate greater than 5% (Table 63).

Tenth Grade

Reading

Table 64 lists the results of the multiple-choice item analyses for the 2002 tenth-grade Reading assessment. The point-biserials for the multiple-choice items range from .13 to .55 with a mean of .39. The p-values for the multiple-choice items range from .30 to .90 with a mean of .67.

Table 65 lists the results of the constructed-response item analyses. The item-to-total-score correlations for the constructed-response items range from .39 to .70 with a mean of .57.

Their p-values range from .24 to .78 with a mean of .58. The distribution of the percent of students obtaining each score point for the constructed-response items shows a good amount of variability in students' responses to most items. Over 50% of the students obtained the highest possible score points in 5 out of the 13 constructed-response items. The scores of the remaining students were well distributed across the score points, indicating that these items produced a reasonable amount of variability.

The omit rates for the multiple-choice items for the 2002 tenth-grade Reading assessment ranged from .1% to 1.8% (Table 64). Omit rates for the constructed-response items ranged from 2.6% to 9.7% (Table 65), with 8 out of the 13 items having an omit rate greater than 5%.

Writing

Table 66 lists the results of the multiple-choice item analyses for the 2002 tenth-grade Writing assessment. The point-biserials for all multiple-choice items range from .15 to .53 with a mean of .38. The p-values for these items range from .34 to .95 with a mean of .70.

Table 67 lists the results of the constructed-response item analyses. The item-to-total-score correlations for the constructed-response items range from .15 to .63 with a mean of .46. Their p-values range from .42 to .99, with a mean of .69.

The omit rate for the tenth-grade Writing assessment was small, ranging from .1% to 2.9% for multiple-choice items (Table 66) and .0% to 4.2% for constructed-response items (Table 67).

Mathematics

Table 68 lists the results of the multiple-choice item analyses for the 2002 tenth-grade Mathematics assessment. The point-biserials for the multiple-choice items range from .17 to .51 with a mean of .38. The p-values for the multiple-choice items range from .29 to .86 with a mean of .57.

Table 69 lists the results of the constructed-response item analyses. The item-to-total-score correlations for the constructed-response items range from .11 to .71 with a mean of .53. The p-values for the constructed-response items range from .07 to .54 with a mean of .24. The percent of students obtaining each score point for the constructed-response items shows a good amount of variability in students' responses to most items.

The omit rate for the multiple-choice items for the tenth-grade Mathematics assessment ranged from .1% to 1.1% (Table 68). The omit rate for the constructed-response items ranged from 1.3% to 9.1% (Table 69), with 7 out of the 15 items having an omit rate greater than 5%.

Part 5: Scaling and Calibration

Overview of the IRT Models

CTB uses item response theory (IRT) to place multiple-choice and constructed-response items on the same scale. Because the characteristics of selected-response (multiple-choice) and constructed-response (open-ended) items are different, two item response theory models are used in the analysis of test forms containing both item types. The three-parameter logistic (3PL) model (Lord & Novick, 1968; Lord, 1980) is used for the analysis of selected-response items. In this model, the probability that a student with scale score θ responds correctly to item i is

$$P_i(\theta) = c_i + \frac{1 - c_i}{1 + \exp[-1.7a_i(\theta - b_i)]}$$

where a_i is the item discrimination, b_i is the item difficulty, and c_i is the probability of a correct response by a very-low-scoring student. These three parameters are estimated from the item response data.

For analysis of constructed-response items, the two-parameter partial credit model (2PPC) (Muraki, 1992; Yen, 1993) is used. The 2PPC model is a special case of Bock's (1972) nominal model. Bock's model states that the probability of an examinee with ability θ having a score at the k -th level of the j -th item is

$$P_{jk}(\theta) = P(x_j = k - 1 | \theta) = \frac{\exp Z_{jk}}{\sum_{i=1}^{m_j} \exp Z_{ji}}, k = 1, \dots, m_j,$$

where m_j is the number of score levels and

$$Z_{jk} = A_{jk} \theta + C_{jk}$$

For the special case of the 2PPC model used here, the following constraints are used:

$$A_{jk} = \alpha_j (k - 1)$$

$$k = 1, 2, \dots, m_j$$

and

$$C_{jk} = -\sum_{i=0}^{k-1} \gamma_{ji}, \text{ where } \gamma_{j0} = 0,$$

where α_j and γ_{ji} are the parameters to be estimated from the data. The first constraint implies that higher item scores reflect higher ability levels and that items can vary in their discriminations. For the 2PPC model, for each item, there are $m_j - 1$ independent γ_{ji} parameters and one α_j parameter; a total of m_j independent item parameters are estimated.

The IRT models are implemented using CTB's PARDUX software (Burket, 1993). PARDUX estimates parameters simultaneously for dichotomous and polytomous items using marginal maximum likelihood procedures implemented via the EM algorithm (Bock & Aitkin, 1981; Thissen, 1982).

Scaling and Calibration of the Assessment

The items within each content area were scaled using CTB's computer program PARDUX (Burket, 1993), and a linear transformation was used to translate the PARDUX calibration scale to a unique Colorado scale. The parameter estimates are in two different parameterizations, corresponding to the two item response models (3PL and 2PPC). The location (i.e., difficulty) and discrimination parameters for the multiple-choice items are in the traditional 3PL metric and are labeled b and a , respectively. The location and discrimination parameters for the constructed-response items are in the 2PPC metric, designated g (gamma) and f (alpha), respectively. Because of the different metrics used, the 3PL (multiple-choice) parameters (a and b) are not directly comparable to the 2PPC (constructed-response) parameters (f and g). However, they can be converted to a common metric. The two metrics are related by $b = g/f$ and $a = f/1.7$ (see Burket, 1993). As a result of this procedure, the MC and CR items are placed on the same scale. Note that for the 2PPC model there are $m_j - 1$ (where m_j is the number of score levels for item j) independent g 's and one f , for a total of m_j independent parameters estimated for each item. For the 3PL model, there is one "a" parameter, one "b" parameter, and one pseudo-guessing parameter, "c", for each item.

Summary output tables from the PARDUX program present information on model fit for each item. Model fit information is obtained from the Z -statistic. The Z -statistic is a transformation of the chi-square (Q_1) statistic that takes into account differing numbers of score levels as well as sample size:

$$Z_j = \frac{(Q_{1j} - DF)}{\sqrt{2DF}},$$

for the j th item. The Z -statistic is an index of the degree to which obtained proportions of students with each item score are close to the proportions that would be predicted by the estimated thetas and item parameters. These values, along with their associated chi-squares (Q_1), are computed for ten intervals corresponding to deciles of the theta distribution (Burket, 1991). The chi-square statistic is used to characterize item fit as "good" or "poor."

The estimated item parameters will be used to score the student responses in a given test.

Model Fit

The model fit statistics and item parameter results are based on the analysis of a sample data set used for item calibration and scaling. The summary fit statistics for the multiple-choice

and constructed-response items for different grades and content areas are shown in Tables 70 through 121.

The relationship, $Z=N*4/1500$, gives the approximate critical Z-value for the CSAP assessments, where N is the sample size for the calibration sample. Fit statistics above this critical Z-value may indicate poor model fit.

Third Grade

Reading

The critical Z-value for the third-grade Reading assessment, based on the calibration sample, is 141.2. The item parameters and fit statistics for the multiple-choice and constructed-response items are shown in Tables 70 and 71, respectively.

The Z-statistics for all MC and most CR items are small compared to the critical Z-value, indicating that the proportions of students obtaining each item score are close to the proportions that would be predicted by the estimated thetas and item parameters.

CR item 39 in Session 2 exhibited less than optimal fit with a Z-statistic of 141.5, exceeding the critical Z-value of 141.2. A close examination of the ICC for the item indicated that the proportion of lower ability students obtaining a “0” was lower than expected and obtaining a “1” was higher than expected.

Reading – Spanish Version

The critical Z-value for the third-grade Spanish Reading assessment, based on the calibration sample, is 3.8. The item parameters and fit statistics for the multiple-choice and constructed-response items are shown in Tables 72 and 73, respectively.

The Z-statistics for all MC and most CR items are small compared to the critical Z-value, indicating that the proportions of students obtaining each item score are close to the proportions that would be predicted by the estimated thetas and item parameters.

CR item 13 in Session 1 exhibited less than optimal fit with a Z-statistic of 11.7, exceeding the critical Z-value of 3.8. A close examination of the ICC for the item indicated that the proportion of lower ability students obtaining a “0” was lower than expected and obtaining a “1” was higher than expected.

CR item 25 in Session 2 exhibited less than optimal fit with a Z-statistic of 4.6, exceeding the critical Z-value of 3.8. A close examination of the ICC for the item indicated that the proportion of lower ability students obtaining a “0” was higher than expected and obtaining a “1” was lower than expected.

CR item 27 in Session 2 exhibited less than optimal fit with a Z-statistic of 4.8, exceeding the critical Z-value of 3.8. A close examination of the ICC for the item indicated that the proportion of lower ability students obtaining a “1” was lower than expected and the proportion of higher ability students obtaining a “1” was higher than expected.

CR item 35 in Session 2 exhibited less than optimal fit with a Z-statistic of 8.0, exceeding the critical Z-value of 3.8. A close examination of the ICC for the item indicated that the proportion of lower ability students obtaining a “1” was lower than expected and the proportion of higher ability students obtaining a “1” was higher than expected.

Writing

The critical Z-value for the third-grade Writing assessment, based on the calibration sample, is 10.9. The item parameters and fit statistics for the multiple-choice and constructed-response items are shown in Tables 74 and 75, respectively. The Z-statistics for all MC and CR items are small compared to the critical Z-value, indicating that the proportions of students obtaining each item score are close to the proportions that would be predicted by the estimated thetas and item parameters.

Fourth Grade

Reading

The critical Z-value for the fourth-grade Reading assessment, based on the calibration sample, is 9.4. Fit values above this critical value may indicate poor model fit. The item parameters and fit statistics for the multiple-choice and constructed-response items are shown in Tables 76 and 77, respectively.

The Z-statistics for most CR and MC items are smaller than the critical Z-value, indicating that the proportions of students with each item score are close to the proportions that would be predicted by the estimated thetas and item parameters.

MC item 22 in Session 2 exhibited less than optimal fit with a Z-statistic of 22.6, exceeding the critical Z-value of 9.4. A close examination of the ICC for the item indicated that the proportion of lower ability students obtaining a “1” was higher than expected and the proportion of slightly-above-average-ability students obtaining a “1” was lower than expected. Note that this is a relatively low discriminating ($a = .70$) and relatively hard item ($p = .29$). The point-biserial correlation coefficients for two of the incorrect options on this item were also non-negative, though close to zero – like was the point-biserial correlation for the correct answer ($r_{\text{itt}} = .01$). MC item 22 was shared with the grade 5 Reading test (item 13) and it exhibited less than optimal fit in that test as well.

CR item 58 in Session 4 exhibited less than optimal fit with a Z-statistic of 10.6, exceeding the critical Z-value of 9.4. A close examination of the ICC for the item indicated that the proportion of lower ability students obtaining a “1” was higher than expected.

CR item 102 in Session 6 exhibited less than optimal fit with a Z-statistic of 12.6, exceeding the critical Z-value of 9.4. A close examination of the ICC for the item indicated that the proportion of lower ability students obtaining a “0” was lower than expected and obtaining a “1” was higher than expected, and also the proportion of slightly-below-average-ability students obtaining a “3” was higher than expected.

Reading – Spanish Version

The critical Z-value for the fourth-grade Spanish Reading assessment, based on the calibration sample, is 2.7. Fit values above this critical value may indicate poor model fit. The item parameters and fit statistics for the multiple-choice and constructed-response items are shown in Tables 78 and 79, respectively.

The Z-statistics for most CR and MC items are smaller than the critical Z-value, indicating that the proportions of students with each item score are close to the proportions that would be predicted by the estimated thetas and item parameters.

MC item 5 in Session 1 exhibited less than optimal fit with a Z-statistic of 5.3, exceeding the critical Z-value of 2.7. A close examination of the ICC for the item indicated that the item was a poorly discriminating item ($a = .12$). The point-biserial correlation coefficient for one of the incorrect options on this item was also non-negative, though not very high ($r_{\text{itt}} = .09$; the point-biserial correlation for the correct answer was $.12$).

MC item 25 in Session 3, exhibited less than optimal fit with a Z-statistic of 3.2, exceeding the critical Z-value of 2.7. A close examination of the ICC for the item indicated that the proportion of average ability students obtaining a “1” was lower than expected.

MC item 43 in Session 4 exhibited less than optimal fit with a Z-statistic of 2.8, marginally exceeding the critical Z-value of 2.7. A close examination of the ICC for the item indicated that the observed and expected proportion of students obtaining a “1” over the ability continuum were sometimes slightly off; however, there was no clear pattern in these differences.

MC item 97 in Session 6 exhibited less than optimal fit with a Z-statistic of 4.2, exceeding the critical Z-value of 2.7. A close examination of the ICC for the item indicated that only at the very high end of the ability continuum did the ICC start to increase; for most of the ability continuum the item did not discriminate very well between more and less able students. Note that this is a relatively hard item ($p = .23$). The point-biserial correlation coefficient for the correct option ($r_{\text{itt}} = .10$) was smaller than that for one of the incorrect options ($r_{\text{itt}} = .22$) that was selected almost twice as often as the correct option.

Finally, CR item 103 in Session 6 exhibited less than optimal fit with a Z-statistic of 3.7, exceeding the critical Z-value of 2.7. A close examination of the ICC for the item indicated that the proportion of low ability students obtaining a “1” was slightly lower than expected and obtaining a “0” was slightly higher than expected.

Writing

The critical Z-value for the fourth-grade Writing assessment, based on the calibration sample, is 9.4. Fit values above this critical value may indicate poor model fit. The item parameters and fit statistics for the multiple-choice and constructed-response items are shown in Tables 80 and 81, respectively. The Z-statistics for all MC items and most CR items are small compared to the critical Z-value indicating that the proportions of students with each item score are close to the proportions that would be predicted by the estimated thetas and item parameters.

CR item 3A in Session 2 exhibited less than optimal fit with a Z-statistic of 39.8, exceeding the critical Z-value of 9.4. A close examination of the ICC for the item indicated that the proportion of lower ability students obtaining a “0” was less than expected and obtaining a “1” was higher than expected.

CR item 77 in Session 5 exhibited less than optimal fit with a Z-statistic of 11.3, exceeding the critical Z-value of 9.4. A close examination of the ICC for the item indicated that the proportion of lower ability students obtaining a “1” was higher than expected.

Writing – Spanish Version

The critical Z-value for the fourth-grade Spanish Writing assessment, based on the calibration sample, is 2.7. Fit values above this critical value may indicate poor model fit. The item parameters and fit statistics for the multiple-choice and constructed-response items are shown in Tables 82 and 83, respectively. The Z-statistics for most MC and CR items are small compared to the critical Z-value, indicating that the proportions of students with each item score are close to the proportions that would be predicted by the estimated thetas and item parameters.

MC item 52 in Session 5 exhibited less than optimal fit with a Z-statistic of 4.6, exceeding the critical Z-value of 2.7. A close examination of the ICC for the item indicated that the proportion of lower ability students obtaining a “1” was less than expected.

MC item 64 in Session 5 exhibited less than optimal fit with a Z-statistic of 5.2, exceeding the critical Z-value of 2.7. A close examination of the ICC for the item indicated that the proportion of lower ability students obtaining a “1” was higher than expected.

MC item 78 in Session 5 exhibited less than optimal fit with a Z-statistic of 2.8, exceeding the critical Z-value of 2.7. The item parameter estimation process for this item initially did not converge, therefore it was handfitted. A close examination of the ICC and of the item analysis results for the item indicated that the student responses did not fit the model well. The item did not discriminate well among low or high ability students. The point-biserial correlation coefficients for two of the incorrect options on this item were also non-negative, though rather small – like the point-biserial correlation for the correct answer ($r_{\text{itt}} = .07$). The

four response options were chosen about equally often (respectively, 24%, 26%, 22% and 24% of the students chose options 1, 2, 3, and 4).

Finally, CR item 91 in Session 5 exhibited less than optimal fit with a Z-statistic of 8.1, exceeding the critical Z-value of 2.7. A close examination of the ICC for the item indicated that the proportion of lower ability students obtaining a “1” or “2” was higher than expected, and obtaining a “0” was lower than expected.

Fifth Grade

Reading

The critical Z-value for the fifth-grade Reading assessment, based on the calibration sample, is 9.9. Fit values above this critical value may indicate poor model fit. The item parameters and fit statistics for the multiple-choice and constructed-response items are shown in Tables 84 and 85, respectively.

The Z-statistics for most MC items and all CR items are smaller than the critical Z-value, indicating that the proportions of students with each item score are close to the proportions that would be predicted by the estimated thetas and item parameters.

MC item 13 in Session 3 exhibited less than optimal fit with a Z-value of 22.4. The ICC indicates that the proportion of lower ability students obtaining a correct response is higher than expected, the proportion of slightly above average ability students is lower than expected, and the proportion of higher ability students is higher than expected. Note that item 13 is a relatively hard item ($p = .33$). The point-biserial correlation coefficient for one of the incorrect options on this item was also non-negative, though close to zero. MC Item 13 was shared with the grade 4 Reading test (item 22) and it exhibited less than optimal fit in that test as well.

The item parameter estimation process did not converge for MC item 122 in Session 6. A close examination of the ICC for the item indicated that the student responses do not fit the model well. The item did not discriminate between low or high ability students, and thus did not provide useful information on student ability. This item was removed from the operational test results for this reason.

Writing

The critical Z-value for the fifth-grade Writing assessment, based on the calibration sample, is 9.9. Fit values above this critical value may indicate poor model fit. The item parameters and fit statistics for the multiple-choice and constructed-response items are shown in Tables 86 and 87, respectively.

The Z-statistics for all MC items and most CR items are smaller than the critical Z-value, indicating that the proportions of students with each item score are close to the proportions that would be predicted by the estimated thetas and item parameters.

CR item 3A in Session 2 exhibited less than optimal fit with a Z-statistic of 41.7, exceeding the critical Z-value of 9.9. A close examination of the ICC for the item indicated that the proportion of lower ability students obtaining a “0” was less than expected and obtaining a “1” was higher than expected.

A similar picture was obtained for CR items 57 and 89 in Session 5, which exhibited less than optimal fit with Z-statistics of 10.8 and 65.2, respectively, exceeding the critical Z-value of 9.9. A close examination of the ICC for the two items indicated that the proportion of lower ability students obtaining a “0” was less than expected and obtaining a “1” was higher than expected.

Mathematics

The critical Z-value for the fifth-grade Mathematics assessment, based on the calibration sample, is 7.1. Fit values above this critical value may indicate poor model fit. The item parameters and fit statistics for the multiple-choice and constructed-response items are shown in Tables 88 and 89, respectively.

The Z-statistics for all MC and CR items are smaller than the critical Z-value, indicating that the proportions of students with each item score are close to the proportions that would be predicted by the estimated thetas and item parameters.

Sixth Grade

Reading

The critical Z-value for the sixth-grade Reading assessment, based on the calibration sample, is 6.3. Fit values above this critical value may indicate poor model fit. The item parameters and fit statistics for the multiple-choice and constructed-response items are shown in Tables 90 and 91, respectively.

The Z-statistics for all MC items and most CR items are smaller than the critical Z-value, indicating that the proportions of students with each item score are close to the proportions that would be predicted by the estimated thetas and item parameters.

CR item 13 in Session 3 exhibited less than optimal fit with a Z-value of 8.2, exceeding the critical Z-value of 6.3. A detailed examination of the ICC for item 13 indicated that the proportion of lower ability students obtaining a “0” was higher than expected and obtaining a “1” was slightly lower than expected. The proportion of higher ability students obtaining a “2” was higher than expected and obtaining a “3” was lower than expected.

Writing

The critical Z-value for the sixth-grade Writing assessment, based on the calibration sample, is 6.9. Fit values above this critical value may indicate poor model fit. The item parameters and fit statistics for the multiple-choice and constructed-response items are shown in Tables 92 and 93, respectively.

The Z-statistics for all MC items and most CR items are smaller than the critical Z-value, indicating that the proportions of students with each item score are close to the proportions that would be predicted by the estimated thetas and item parameters.

CR item 3A in Session 2 exhibited less than optimal fit with a Z-statistic of 7.1, exceeding the critical Z-value of 6.9. A close examination of the ICC for the item indicated that the proportion of lower ability students obtaining a “0” was less than expected and obtaining a “1” was higher than expected.

Mathematics

The critical Z-value for the sixth-grade Mathematics assessment, based on the calibration sample, is 10.0. Fit values above this critical value may indicate poor model fit. The item parameters and fit statistics for the multiple-choice and constructed-response items are shown in Tables 94 and 95, respectively.

The Z-statistics for all MC items and most CR items are smaller than the critical Z-value, indicating that the proportions of students with each item score are close to the proportions that would be predicted by the estimated thetas and item parameters.

CR item 50 in Session 3 exhibited less than optimal fit with a Z-statistic of 22.8, exceeding the critical Z-value of 10.0. A close examination of the ICC for the item indicated that the proportion of below average ability students obtaining a “2” was much higher than expected. The proportion of lower ability students obtaining a score of “0” or “1” was lower than expected. These observations suggest that the item might have functioned better had it been a two-point item rather than a three-point item.

Seventh Grade

Reading

The critical Z value for the seventh-grade Reading assessment, based on the calibration sample, is 12.2. Fit values above this critical value may indicate poor model fit. The item parameters and fit statistics for the multiple-choice and constructed-response items are shown in Tables 96 and 97, respectively.

The item responses fit the IRT model reasonably well. The Z-statistics for all MC items and most CR items are small compared to the critical Z-value, indicating that the proportions of students with each item score are close to the proportions that would be expected by the estimated thetas and item parameters.

CR item 30 in Session 3 exhibited less than optimal fit with a Z-value of 12.9, exceeding the critical Z-value of 12.2. The ICC for the item shows a reasonable fit, with the proportion of higher ability students obtaining a score of “2” slightly lower than expected and a score of “1” slightly higher than expected.

CR item 31 in Session 3 exhibited less than optimal fit with a Z-value of 12.9, exceeding the critical Z-value of 12.2. A detailed examination of the ICC indicates that the proportion of higher ability students obtaining a “3” was lower than expected and obtaining a “2” was higher than expected. The proportion of lower ability students obtaining a “2” was lower than expected and obtaining a “1” was higher than expected.

CR item 103 in Session 6 exhibited less than optimal fit with a Z-value of 12.5, exceeding the critical Z-value of 12.2. A detailed examination of the ICC indicates that the proportion of higher ability students obtaining a “3” was higher than expected and obtaining a “2” was lower than expected. The proportion of lower ability students obtaining a “0” was lower than expected.

Writing

The critical Z-value for the seventh-grade Writing assessment, based on the calibration sample, is 12.1. Fit values above this critical value may indicate poor model fit. The item parameters and fit statistics for the multiple-choice and constructed-response items are shown in Tables 98 and 99, respectively.

The Z-statistics for all MC items and most CR items are smaller than the critical Z-value, indicating that the proportions of students with each item score are close to the proportions that would be predicted by the estimated thetas and item parameters.

CR item 3A in Session 2 exhibited less than optimal fit with a Z-statistic of 43.3, exceeding the critical Z-value of 12.1. A close examination of the ICC for the item indicated that the proportion of lower ability students obtaining a “0” was less than expected and obtaining a “1” was higher than expected.

CR item 119 in Session 6 exhibited less than optimal fit with a Z-statistic of 12.8, exceeding the critical Z-value of 12.1. A close examination of the ICC for the item indicated that the proportion of lower ability students obtaining a “0” was slightly less than expected, and obtaining a “1” was higher than expected. The proportion of higher ability students obtaining a “4” was slightly higher than expected.

Mathematics

The critical Z-value for the seventh-grade Mathematics assessment, based on the calibration sample, is 14.5. Fit values above this critical value may indicate poor model fit. The item parameters and fit statistics for the multiple-choice and constructed-response items are shown in Tables 100 and 101, respectively.

The Z-statistics for all MC and CR items are smaller than the critical Z-value, indicating that the proportions of students with each item score are close to the proportions that would be predicted by the estimated thetas and item parameters.

Eighth Grade

Reading

The critical Z value for the eighth-grade Reading assessment, based on the calibration sample, is 11.7. Fit values above this critical value may indicate poor model fit. The item parameters and fit statistics for the multiple-choice and constructed-response items are shown in Tables 102 and 103, respectively. They indicate that the item responses fit the model reasonably well.

The Z-statistics for all MC items and most CR items are small compared to the critical Z-value, indicating that the proportions of students with each item score are close to the proportions that would be expected by the estimated thetas and item parameters.

CR item 99 in Session 6 exhibited less than optimal fit with a Z-value of 15.7, exceeding the critical Z-value of 11.7. A detailed examination of the ICC indicates that the proportion of higher ability students obtaining a “1” for item 99 was slightly higher than expected. The proportion of lower ability students obtaining a “1” was slightly lower than expected and obtaining a “0” was slightly higher than expected.

Writing

The critical Z-value for the eighth-grade Writing assessment, based on the calibration sample, is 11.4. Fit values above this critical value may indicate poor model fit. The item parameters and fit statistics for the multiple-choice and constructed-response items are shown in Tables 104 and 105, respectively.

The Z-statistics for all MC items and most CR items are smaller than the critical Z-value, indicating that the proportions of students with each item score are close to the proportions that would be predicted by the estimated thetas and item parameters.

CR item 3A in Session 2 exhibited less than optimal fit with a Z-statistic of 12.1, exceeding the critical Z-value of 11.4. A close examination of the ICC for the item indicated that the proportion of lower ability students obtaining a “0” was less than expected and obtaining a “1” was higher than expected.

CR item 94 in Session 5 exhibited less than optimal fit with a Z-statistic of 16.0, exceeding the critical Z-value of 11.4. A close examination of the ICC for the item indicated that the proportion of lower ability students obtaining a “0” was less than expected, and obtaining a “1” was higher than expected. The proportion of higher ability students obtaining a “4” was slightly higher than expected.

Mathematics

The critical Z value for the eighth-grade Mathematics assessment, based on the calibration sample, is 12.4. Fit values above this critical value may indicate poor model fit. The item parameters and fit statistics for the multiple-choice and constructed-response items are shown in Tables 106 and 107, respectively.

The Z-statistics for all MC items and most CR items are smaller than the critical Z-value, indicating that the proportions of students with each item score are close to the proportions that would be predicted by the estimated thetas and item parameters.

CR item 20 in Session 1 exhibited a less than optimal fit with a Z-statistic of 13.2, exceeding the critical Z-value of 12.4. A close examination of the ICC for the item indicated that the proportion of higher ability students obtaining a “4” was more than expected and obtaining a “3” was lower than expected. The proportion of lower ability students obtaining a “1” was also higher than expected.

CR item 23 in Session 2 exhibited a less than optimal fit with a Z-statistic of 15.2, exceeding the critical Z-value of 12.4. A close examination of the ICC for the item indicated that the proportion of higher ability students obtaining a “2” was more than expected and the proportion of lower ability students obtaining a “1” was slightly higher than expected.

CR item 27 in Session 2 exhibited a less than optimal fit with a Z-statistic of 17.6, exceeding the critical Z-value of 12.4. A close examination of the ICC for the item indicated that the proportion of higher ability students obtaining a “3” was more than expected and obtaining a “2” was lower than expected.

The item parameter estimation process did not converge for MC item 2 in Session 1. A close examination of the ICC for the item indicated that the student responses do not fit the model well. The item did not discriminate between low or high ability students, and thus did not provide useful information on student ability. This item was removed from the operational test results for this reason.

Science

The critical Z-value for the eight-grade Science assessment, based on the calibration sample, is 24.2. Fit values above this critical value may indicate poor model fit. The item parameters and fit statistics for the multiple-choice and constructed-response items are shown in Tables 108 and 109, respectively. The Z-statistics for all MC and CR items are smaller than the

critical Z-value, indicating that the proportions of students with each item score are close to the proportions that would be predicted by the estimated thetas and item parameters.

Grade 9

Reading

The critical Z value for the ninth-grade Reading assessment, based on the calibration sample, is 15.8. Fit values above this critical value may indicate poor model fit. The item parameters and fit statistics for the multiple-choice and constructed-response items are shown in Tables 110 and 111, respectively. They indicate that the item responses fit the model for all items of the ninth-grade Reading assessment reasonably well.

The Z-statistics for all MC and CR items are small compared to the critical Z-value, indicating that the proportions of students with each item score are close to the proportions that would be expected by the estimated thetas and item parameters.

Writing

The critical Z-value for the ninth-grade Writing assessment, based on the calibration sample, is 15.7. Fit values above this critical value may indicate poor model fit. The item parameters and fit statistics for the multiple-choice and constructed-response items are shown in Tables 112 and 113, respectively.

The Z-statistics for most MC items and all CR items are smaller than the critical Z-value, indicating that the proportions of students with each item score are close to the proportions that would be predicted by the estimated thetas and item parameters.

MC item 91 in Session 2 exhibited less than optimal fit with a Z-statistic of 21.6, exceeding the critical Z-value of 15.7. A close examination of the ICC for the item indicated that the proportion of lower ability students and the proportion of fairly high ability students obtaining a correct response was less than expected. Note that item 91 is a relatively low discriminating item with $a = .44$.

Mathematics

The critical Z-value for the ninth-grade Mathematics assessment, based on the calibration sample, is 11.5. Fit values above this critical value may indicate poor model fit. The item parameters and fit statistics for the multiple-choice and constructed-response items are shown in Tables 114 and 115, respectively.

The Z-statistics for all MC items and most CR items are smaller than the critical Z-value, indicating that the proportions of students with each item score are close to the proportions that would be predicted by the estimated thetas and item parameters.

CR item 23 in Session 2 exhibited a less than optimal fit with a Z-statistic of 15.8, exceeding the critical Z-value of 11.5. A close examination of the ICC for the item indicated that the proportion of higher ability students obtaining a “1” was more than expected.

Grade 10

Reading

The critical Z-value for the tenth-grade Reading assessment, based on the calibration sample, is 7.8. Fit values above this critical value may indicate poor model fit. The item parameters and fit statistics for the multiple-choice and constructed-response items are shown in Tables 116 and 117, respectively. They indicate that the item responses fit the model reasonably well for most items of the tenth-grade Reading assessment.

The Z-statistics for all MC items and most CR items are small compared to the critical Z-value, indicating that the proportions of students with each item score are close to the proportions that would be expected by the estimated thetas and item parameters.

CR item 91 in Session 6 exhibited less than optimal fit with a Z-statistic of 8.8, exceeding the critical Z-value of 7.8. A close examination of the ICC for the item indicated that the proportion of higher ability students obtaining a “2” was less than expected and obtaining a “1” was much higher than expected.

CR item 104 in Session 6 exhibited less than optimal fit with a Z-statistic of 9.6, exceeding the critical Z-value of 7.8. A close examination of the ICC for the item indicated that the proportion of lower ability students obtaining a “1” was less than expected, whereas the proportion of higher ability students obtaining a “1” was higher than expected.

Writing

The critical Z-value for the tenth-grade Writing assessment, based on the calibration sample, is 8.2. Fit values above this critical value may indicate poor model fit. The item parameters and fit statistics for the multiple-choice and constructed-response items are shown in Tables 118 and 119, respectively.

The Z-statistics for all MC items and most CR items are smaller than the critical Z-value, indicating that the proportions of students with each item score are close to the proportions that would be predicted by the estimated thetas and item parameters.

CR item 3A in Session 2 exhibited less than optimal fit with a Z-statistic of 23.0, exceeding the critical Z-value of 8.2. A close examination of the ICC for the item indicated that the proportion of lower ability students obtaining a “0” was less than expected, and obtaining a “1” was higher than expected. The proportion of higher ability students obtaining a “4” was slightly higher than expected.

Mathematics

The critical Z-value for the tenth-grade Mathematics assessment, based on the calibration sample, is 11.1. Fit values above this critical value may indicate poor model fit. The item parameters and fit statistics for the multiple-choice and constructed-response items are shown in Tables 120 and 121, respectively.

The Z-statistics for all MC items and most CR items are small compared to the critical Z-value, indicating that the proportions of students with each item score are close to the proportions that would be predicted by the estimated thetas and item parameters.

CR item 13 in Session 1 exhibited less than optimal fit with a Z-statistic of 13.3, exceeding the critical Z-value of 11.1. A close examination of the ICC for the item indicated that the proportion of higher ability students obtaining a “1” was less than expected, whereas the proportion of lower ability students obtaining a “1” was higher than expected. The proportion of lower ability students obtaining a “0” was also lower than expected.

CR item 23 in Session 2 exhibited less than optimal fit with a Z-statistic of 12.2, exceeding the critical Z-value of 11.1. A close examination of the ICC for the item indicated that the item did not discriminate well between low and high ability students. Only very few above average students obtained a “2” on the item. The item also has a very low item-total correlation ($r_{it} = .12$, the lowest value observed for the test). The item is also very difficult ($p = .07$).

Procedures for Detecting and Reducing Bias in CSAP

Four procedures were used to reduce bias in the CSAP Assessments. The first procedure is based on the premise that careful editorial attention to validity is an essential step in keeping bias to a minimum. Bias can occur only if the test is measuring different things for different groups. If the test entails irrelevant skills or knowledge, however common, the possibility of bias is increased. Thus, careful attention is paid to content validity.

The second step is to follow the McGraw-Hill guidelines designed to reduce or eliminate bias. Item writers are directed to the following published guidelines: *Guidelines for Bias-Free Publishing* (McGraw-Hill, 1983) and *Reflecting Diversity: Multicultural Guidelines for Educational Publishing Professionals* (Macmillan/McGraw-Hill, 1993). Developers review the materials with these considerations in mind.

In the third procedure, educational professionals and community members in the state who represent various gender and ethnic groups review all items. They are asked to consider and comment on the appropriateness of language, subject matter, and representation of people.

It is believed that these three procedures both improve the quality of CSAP and reduce bias. Current evidence, however, suggests that expertise in this area is no substitute for data;

reviewers are often wrong about which items work to the disadvantage of a group, apparently because some of their ideas about how students will react to items may be faulty (Sandoval & Mille, 1980; Jensen, 1980; Scheuneman, 1987).

The fourth procedure, an empirical approach, involves statistical procedures referred to as differential item functioning (DIF) analyses.

Differential Item Functioning Analyses

Because the contents were scored using item response theory, the appropriate procedure for examining DIF is one that reflects that use. A procedure suggested by Linn and Harnisch (1981) was used for the CSAP DIF studies.

An example of this procedure for gender bias analyses follows. The parameters for each item (a_i , b_i , and c_i) and the trait or scale score (θ) for each examinee are estimated for the three-parameter logistic model:

$$P_{ij}(\theta) = c_i + \frac{1 - c_i}{1 + \exp[-1.7a_i(\theta_j - b_i)]},$$

where $P_{ij}(\theta)$ is the probability that examinee j , with a given value of θ , will obtain a correct score on item i . Note that the item parameter estimates are based on data from the total sample of valid examinees. The sample is then divided into gender groups, and the members in each group are sorted into ten equal score categories (deciles) based upon their location on the score scale (θ). The expected proportion correct for each group based on the model prediction is compared to the observed (actual) proportion correct obtained by the group.

The proportion of people in decile g who are expected to answer item i correctly is

$$P_{ij} = P_{ig}(\theta) = \frac{1}{n_g} \sum_{j \in g} P_{ij}(\theta),$$

where n_g is the number of examinees in decile g . To compute the proportion of students expected to answer item i correctly (over all deciles) for a group (e.g., Female) the formula is given by:

$$P_i = P_i(\theta) = \frac{\sum_{g=1}^{10} n_g P_{ig}(\theta)}{\sum_{g=1}^{10} n_g}.$$

The corresponding observed proportion correct for examinees in a decile (O_{ig}) is the number of examinees in decile g who answered item i correctly divided by the number of people in the decile (n_g). That is,

$$O_{ig} = \frac{\sum_{j \in g} u_{ij}}{n_g},$$

where u_{ij} is the dichotomous score for item i for examinee j .

The corresponding formula to compute the observed proportion answering each item correctly (over all deciles) for a complete gender group is given by:

$$O_{i.} = \frac{\sum_{g=1}^{10} n_g O_{ig}}{\sum_{g=1}^{10} n_g}.$$

After the values are calculated for these variables, the difference between the observed proportion correct (for gender) and expected proportion correct can be computed. The decile group difference (D_{ig}) for observed and expected proportion correctly answering item i in decile g is

$$D_{ig} = O_{ig} - P_{ig}.$$

and the overall group difference (D_i) between observed and expected proportion correct for item i in the complete group (over all deciles) is

$$D_i = O_i - P_i.$$

These indices are indicators of the degree to which members of gender groups perform better or worse than expected on each item, based on the parameter estimates from all sub-samples. Differences for decile groups provide an index for each of the ten regions on the score (θ) scale. The decile group difference (D_{ig}) can be either positive or negative. Use of the decile group differences as well as the overall group difference allows one to detect items that give a large positive difference in one range of θ and a large negative difference in another range of θ , yet have a small overall difference.

A generalization of the Linn and Harnisch (1981) procedure was used to measure DIF for constructed-response items.

Differential Item Functioning Ratings

The DIF is defined in terms of the decile group and total target sub-sample differences, the D_{i-} (sum of the negative group differences) and D_{i+} (sum of the positive group differences) values, and the corresponding standardized difference (Z_i) for the sub-sample (see Linn and Harnisch, 1981, p. 112).

Items for which $|D_i| \geq 0.10$ and $|Z_i| \geq 2.58$ are identified as possibly biased. If D_i is positive, the item is functioning differentially in favor of the target sub-sample. If D_i is negative, the item is functioning differentially against the target sub-sample.

Results of the Differential Item Functioning Analyses

The DIF analyses were conducted for all grades and content areas for African Americans, Hispanics, Males, and Females.

Third Grade

Reading

No items indicated DIF with any of the groups.

Reading – Spanish Version

No items indicated DIF with any of the groups.

Writing

MC item 16 indicated a sign of DIF disfavoring Hispanic students. CR item 27A indicated a sign of DIF favoring African American students.

Fourth Grade

Reading

MC item 17 indicated a sign of DIF disfavoring African American students, and MC item 22 indicated a sign of DIF favoring African American students.

Reading – Spanish Version

CR item 14 indicated a sign of DIF disfavoring female students.

Writing

CR items 27, 77 and 100 indicated signs of DIF favoring Hispanic students.

Writing – Spanish Version

CR item 67 indicated a sign of DIF disfavoring male students.

Fifth Grade

Reading

CR item 25 indicated a sign of DIF favoring African American students, and MC item 96 indicated a sign of DIF disfavoring African American students.

Writing

No items indicated signs of DIF with any of the groups.

Mathematics

CR item 23 indicated a sign of DIF disfavoring female students. CR item 58 indicated a sign of DIF disfavoring male students and favoring female students. CR item 17 indicated a sign of DIF favoring Hispanic students.

Sixth Grade

Reading

CR item 37 indicated a sign of DIF favoring African American students.

Writing

CR item 3B indicated a sign of DIF favoring African American students. CR item 63 indicated a sign of DIF favoring Hispanic students.

Mathematics

CR item 10 indicated a sign of DIF disfavoring African American students. CR item 17 indicated a sign of DIF disfavoring male students.

Seventh Grade

Reading

Five items indicated signs of DIF with respect to African American students: CR Items 29, 32, and 33 indicated signs disfavoring African American students, and MC items 37 and 108 indicated signs of DIF favoring African American students. MC item 103 indicated a sign of DIF favoring Hispanic students. Finally, CR item 117 indicated a sign of DIF favoring female students and disfavoring male students.

Writing

CR item 2C indicated a sign of DIF favoring African American students. CR item 3A indicated a sign of DIF disfavoring African American students. CR item 68 indicated signs of DIF disfavoring male students, favoring female students, and favoring African American and Hispanic students.

Mathematics

CR item 17 indicated a sign of DIF disfavoring African American students. CR item 20 indicated signs of DIF disfavoring African American students, disfavoring male students and favoring female students. CR item 42 indicated a sign of DIF disfavoring female students.

Eighth Grade**Reading**

No item indicated signs of DIF with any of the groups.

Writing

No item indicated signs of DIF with any of the groups.

Mathematics

MC item 4 and CR item 60 indicated signs of DIF favoring African American students. CR item 46 indicated a sign of DIF favoring male students and disfavoring female students.

Science

CR item 20 indicated signs of DIF favoring female students, disfavoring male students, and favoring Hispanic students.

Ninth Grade**Reading**

CR item 102 and MC item 106 indicated signs of DIF favoring African American students. MC item 110 indicated a sign of DIF disfavoring female students, and CR item 114 indicated a sign of DIF favoring female students and disfavoring male students.

Writing

CR items 3A, 3B, and 95 indicated signs of DIF favoring African American students. CR item 95 also indicated a sign of DIF disfavoring male students. MC item 89 indicated a sign of DIF disfavoring African American students. CR items 31 and 67 indicated signs of DIF favoring female students and disfavoring male students, and favoring African American students. MC items 85 and 87 indicated signs of DIF favoring male students and disfavoring female students.

Mathematics

MC item 52 indicated a sign of DIF favoring African American students.

Tenth Grade

Reading

Six items indicated signs of DIF with respect to African American students: MC items 9, 11, 25, 41, and 107 all disfavoring them, and MC item 12 favoring them. MC item 107 also indicated a sign of DIF disfavoring Hispanic students. CR item 40 indicated signs of DIF favoring female students, and disfavoring male students. CR item 39 indicated DIF favoring female students.

Writing

CR items 3A and 64 indicated signs of DIF favoring female students and disfavoring male students. The reverse was seen for MC items 80 and 82, which indicated signs of DIF disfavoring female students and favoring male students. CR item 22 indicated a sign of DIF disfavoring male students. CR item 88 indicated a sign of DIF disfavoring male students and favoring African American students. MC items 47 and 84 indicated signs of DIF disfavoring African American students.

Mathematics

MC item 35 indicated a sign of DIF disfavoring African American students. MC item 39 indicated a sign of DIF in the reverse direction, favoring African American students.

Standard Errors of Measurement

Measurement error is associated with every test score. A student's true score is the hypothetical average score that would result if the test could be administered repeatedly without the effects of practice or fatigue. The standard error of measurement (SEM) can be used to obtain a range within which a student's true score is likely to fall. The fact that the score for a single test may not represent an individual's true status gives rise to the need for the standard error.

For example, an obtained score should be regarded not as an absolute value but as a point within a range that probably includes a student's true score. It is expected that 68% of the time a student's score obtained from a single testing would fall within one SEM of that student's true score and that 95% of the time the obtained score would fall within two standard errors of the true score.

Table 122 gives as an overall indication of the standard error of measurement for the scale scores of the CSAP assessments for each grade/content area, the square root of the average value of the variances of the error of measurement associated with each of the scale scores. Tables 123 through 148 provide estimates, based on item response theory, of standard errors of measurement for selected *number correct* scale scores (Yen, 1984) for each of the CSAP assessments. The Tables also show that the scores at the two extremes, the LOSS and the HOSS, have higher measurement errors than scores closer to the mean. Note that these number correct scale scores are *tau* equivalent with the pattern scale scores that are used to score the student responses.

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References

This report presents the results of the statewide Spring 2002 administration of the Colorado Student Assessment Program (CSAP). In Spring 2002, students were assessed in Reading in grades 3 through 10; Writing in grades 3 through 10; Mathematics in grades 5 through 10; and Science in grade 8. Spanish versions of Reading were also administered in grades 3 and 4, and Spanish versions of Writing were administered in grade 4. The assessments were developed by CTB/McGraw-Hill in collaboration with the Colorado Department of Education and were scored and scaled by CTB/McGraw-Hill.

Part 1: Overview of the CSAP Assessments

The CSAP assessments are developed to measure the Colorado “content standards,” which are listed below. Note that the terms “content standard” and “standard” are used synonymously throughout the text. Beginning in 2001, some reporting categories were added at the request of the Colorado Department of Education to provide additional diagnostic information; these reporting categories are called “sub-content areas” and are listed below as well. Each sub-content area may cover several content standards. Most, but not all, of the items in CSAP are assigned to a sub-content area, whereas all items in CSAP are assigned to one, and only one, content standard. The various content standards and sub-content areas are listed below for each content area. Table 1 gives an overview of which content standards and sub-content areas are assessed in each of the grades.

Reading and Writing:

The Colorado Model Content Standards

1. Reading Comprehension – Students read and understand a variety of materials. (Reading)
2. Write for a Variety of Purposes – Students write and speak for a variety of purposes and audiences. (Writing)
3. Write Using Conventions – Students write and speak using conventional grammar, usage, sentence structure, punctuation, capitalization, and spelling. (Writing)
4. Thinking Skills – Students apply thinking skills to their reading, writing, speaking, listening, and viewing. (Reading)
5. Use of Literary Information – Students read to locate, select, and make use of relevant information from a variety of media, reference, and technology source materials. (Reading)
6. Literature – Students read and recognize literature as a record of human experience. (Reading)

The Colorado Model Sub-Content Areas

1. Fiction – Students read, predict, summarize, comprehend, and analyze fictional texts; determine the main idea and locate relevant information; and respond to literature that represents different points of view. (Reading)
2. Nonfiction – Students read, predict, summarize, comprehend, and analyze a variety of nonfiction texts including newspaper articles, biographies and technical writings; locate the main idea and select relevant information; and determine the sequence of steps in technical writings. (Reading)
3. Vocabulary – Students use word recognition skills and resources such as phonics, context clues, word origins, and word order clues; root prefixes and suffixes of words. (Reading)
4. Poetry – Students read, predict, summarize and comprehend poetry; determine the main idea, make inferences, and draw conclusions; and respond to poetry that represents different points of view. (Reading)
5. Paragraph Writing – Students write and edit in a single session. (Writing)
6. Extended Writing – Students plan, organize and revise writing for an extended essay. (Writing)
7. Grammar and Usage – Students know and use correct grammar in writing including parts of speech, pronouns, conventions, modifiers, sentence structure and agreement. (Writing)
8. Mechanics – Students know and use conventions correctly including spelling, capitalization, and punctuation. (Writing)

Mathematics

The Colorado Model Content Standards

1. Number Sense – Students develop number sense, use numbers and number relationships in problem-solving situations, and communicate the reasoning used in solving these problems.
2. Algebra, Patterns, and Functions – Students use algebraic methods to explore, model, and describe patterns and functions involving numbers, shapes, data, and graphs in problem-solving situations and communicate the reasoning used in solving these problems.
3. Data Analysis, Probability, and Statistics – Students use data collection and analysis, statistics, and probability in problem-solving situations and communicate the reasoning used in solving these problems.

4. Geometric Concepts – Students use geometric concepts, properties, and relationships in problem-solving situations and communicate the reasoning used in solving these problems.
5. Measurement – Students use a variety of tools and techniques to measure, apply the results in problem-solving situations, and communicate the reasoning used in solving these problems.
6. Operation and Calculation – Students link concepts and procedures as they develop and use computational techniques including estimation, mental arithmetic, paper-and-pencil, calculators, and computers in problem-solving situations, and communicate the reasoning used in solving these problems.

The Colorado Model Sub-Content Areas

1. Number and Operation Sense – Students demonstrate meanings for whole numbers, commonly-used fractions, decimals, and the four basic arithmetic operations through the use of drawings, decomposing and composing numbers, and identify factors, multiples, and prime/composite numbers. (SA 1, grade 5)
Students demonstrate an understanding of relationships among benchmark fractions, decimals, and percents and justify the reasoning used. Students add and subtract fractions and decimals in problem solving solutions. (SA 1, grade 6)
2. Number Sense – Students demonstrate understanding of the concept of equivalency as related to fractions, decimals, and percents. (SA 1, grade 7)
3. Linear Pattern Representation – Students represent, describe, and analyze linear patterns using tables, graphs, verbal rules, and standard algebraic notation and solve simple linear equations in problem-solving situations using a variety of methods. (SA 1, grade 8)
4. Multiple Representations of Linear/Nonlinear Functions – Students represent linear and nonlinear functional relationships modeling real world phenomena using written explanations, tables, equations, and graphs, describe the connections among these representations and convert from one representation to another. (SA 1, grade 9)
5. Multiple Representations of Functions – Students represent functional relationships that model real world phenomena using written explanations, tables, equations, and graphs, describe the connections among these representations and convert from one representation to another. (SA 1, grade 10)
6. Patterns – Students represent, describe, and analyze geometric and numeric patterns using tables, graphs and verbal rules as problem-solving tools. (SA 2, grade 5)
Students represent, describe, and analyze geometric and numeric patterns using tables, words, concrete objects, and pictures in problem-solving situations. (SA 2, grade 6)

7. Area and Perimeter Relationships – Students demonstrate an understanding of perimeter, circumference, and area and recognize the relationships between them. (SA 2, grade 7)
8. Proportional Thinking – Students apply the concepts of ratio, proportion, scale factor, and similarity including using the relationships among fractions, decimals, and percents in problem-solving situations. (SA 2, grade 8)
Students apply the concepts of ratio and proportion in problem-solving situations. (SA 2, grade 9)
9. Probability and Counting Techniques – Students apply organized counting techniques to determine a sample space and the theoretical probability of an identified event which includes differentiating between independent and dependent events and using area models to determine probability. (SA 2, grade 10)
10. Data Display – Students organize, construct, and interpret displays of data including tables, charts, pictographs, line plots, bar graphs, and line graphs and choose the correct graph from possible graph representations of a given scenario. (SA 3, grade 5)
11. Geometry – Students will reason informally about the properties of two-dimensional figures and solve problems involving area and perimeter. (SA 3, grade 6)
Students describe, analyze, and reason informally about the properties of two and three-dimensional figures to solve problems. (SA 3, grade 8)

Science

The Colorado Model Content Standards

1. Scientific Investigation – Students understand the processes of scientific investigation and design, conduct, communicate about, and evaluate such investigations.
2. Physical Science – Students know and understand common properties, forms, and changes in matter and energy.
3. Life Science – Students know and understand the characteristics and structure of living things, the processes of life, and how living things interact with each other and their environment.
4. Earth and Space Science – Students know and understand the processes and interactions of Earth's systems and the structure and dynamics of Earth and other objects in space.
5. Science – Students understand that science involves a particular way of knowing and understand common connections among scientific disciplines.
6. Technology – Students know and understand interrelationships among science, technology, and human activity and how they can affect the world.

The Colorado Model Sub-Content Areas

1. Experimental Design and Investigations – Students understand and apply scientific questions, hypotheses, variables, and experimental design.
2. Results and Data Analysis – Students organize, analyze, interpret, and predict from scientific data to communicate the results of investigations.
3. Physics – Students understand physical forces, the motion of objects, and energy transfer or energy transformation.
4. Chemistry – Students understand the properties, composition, structure, and changes of matter.
5. Earth Science – Students know and understand the composition of the earth, its history, and the processes that shape it.

Test Development and Content Validity

In order to assure the content validity of the CSAP assessments, the Colorado Model Content Standards and Assessment Frameworks were studied by CTB's Content Developers. To develop the 2002 Colorado Student Assessment Program, Colorado content area specialists, teachers, and assessment experts worked with CTB/McGraw-Hill to develop a pool of items that measured Colorado's Assessment Frameworks in each grade and content area. Several sources contributed to the 2002 CSAP items. CTB/McGraw-Hill's extensive pool of previously field-tested reading passages, writing prompts, mathematics and science items provided the initial source. Many of these existing items were revised in order to ensure better measurement of the relevant Colorado standard and benchmark. Additional items were developed by CTB and the staff at the Colorado Department of Education as needed to complete the alignment of CSAP to the Assessment Frameworks. These items were carefully reviewed and discussed by Content Review, Bias Review, Community Sensitivity Review, and Instructional Impact committees to assure not only content validity, but also the quality and appropriateness of the items. These committees represented Colorado's diverse population and were composed of Colorado teachers, community members, and State Department of Education staff. The committees' recommendations were used to select and/or modify items from the item pool to construct the final reading, writing, mathematics, and science assessments.

A subset of items used in the 2001 forms of the CSAP Reading (grades 3 through 10), Writing (grades 4, 7, and 10), Mathematics (grades 5, 8, and 10), and Science assessments were also included in the 2002 forms, in order to equate the forms across years. Equating is necessary to

account for slight year-to-year differences in test difficulty and to maintain comparability across years. The remaining grades for Writing and Mathematics were assessed for the first time in 2002. Details of the equating are provided later in this document. The forms for adjacent grades in the tests for Reading, Writing, and Mathematics also had items in common, in order to establish the vertical scales for each of these content areas. Details of the vertical scaling are provided later in this document.

Test Configuration

Tables 2 through 6 provide information regarding the configuration of the CSAP assessments. Table 2 provides the number of multiple-choice (MC) items versus constructed-response (CR) items on each test, as well as the number of obtainable points on each CR item. Tables 3 through 6 provide the number of MC and CR items by content standard (CS) and sub-content area (SA). Note that the sub-content areas Fiction (SA 1) and Poetry (SA 4) are combined for grades 3 through 6 Reading. The following content standards are also combined: Number Sense (CS 1) and Computational Techniques (CS 6) in Mathematics, grades 7 through 10; Geometry (CS 4) and Measurement (CS 5) in Mathematics, grades 5 through 10; and Science (CS 5) and Technology (CS 6) in Science grade 8.

Third Grade

Reading and Writing were assessed using separate forms.

Reading

The third-grade Reading test consisted of 42 items totaling 52 points. There were 34 MC items worth 34 points and 8 CR items worth 18 points.

The numbers of CR items that are worth the various numbers of points are as follows:
1 item worth 1 point, 5 items worth 2 points, 1 item worth 3 points, 1 item worth 4 points.

The numbers of items and points by Content Standard (CS) and Sub-Content Area (SA) are:

CS 1 has 34 MC and 8 CR (18 points) totaling 52 points.

SA 1/4 has 11 MC and 5 CR (13 points) totaling 24 points.

SA 2 has 16 MC and 3 CR (5 points) totaling 21 points.

Every item is associated with a CS but not all items are associated with a SA, so the points of the SA may not add up to the total of the points for the total test.

Reading – Spanish Version

The third-grade Spanish Reading test consisted of 40 items totaling 53 points. There were 29 MC items worth 29 points and 11 CR items worth 24 points.

The numbers of CR items that are worth the various numbers of points are as follows:
1 item worth 1 point, 8 items worth 2 points, 1 item worth 3 points, 1 item worth 4 points.

The numbers of items and points by Content Standard (CS) and Sub-Content Area (SA) are:

CS 1 has 29 MC and 11 CR (24 points) totaling 53 points.
SA 1/4 has 14 MC and 11 CR (24 points) totaling 38 points.
SA 2 has 12 MC and 0 CR (0 points) totaling 12 points.

Every item is associated with a CS but not all items are associated with a SA, so the points of the SA may not add up to the total of the points for the total test.

Writing

The third-grade Writing test consisted of 53 items totaling 56 points. There were 35 MC items worth 35 points and 18 CR items worth 21 points.

The numbers of CR items that are worth the various numbers of points are as follows:
15 items worth 1 point, 3 items worth 2 points.

The numbers of items and points by Content Standard (CS) and Sub-Content Area (SA) are:

CS 2 has 7 MC and 9 CR (12 points) totaling 19 points.
CS 3 has 28 MC and 9 CR (9 points) totaling 37 points.
SA 5 has 0 MC and 12 CR (15 points) totaling 15 points.
SA 7 has 18 MC and 2 CR (2 points) totaling 20 points.
SA 8 has 10 MC and 4 CR (4 points) totaling 14 points.

Every item is associated with a CS but not all items are associated with a SA, so the points of the SA may not add up to the total of the points for the total test.

Fourth Grade

Reading and Writing were assessed using a single form.

Reading

The fourth-grade Reading test consisted of 74 items totaling 94 points. There were 59 MC items worth 59 points and 15 CR items worth 35 points.

The numbers of CR items that are worth the various numbers of points are as follows:
1 item worth 1 point, 10 items worth 2 points, 2 items worth 3 points, 2 items worth 4 points.

The numbers of items and points by Content Standard (CS) and Sub-Content Area (SA) are:

CS 1 has 26 MC and 5 CR (11 points) totaling 37 points.
CS 4 has 15 MC and 1 CR (2 points) totaling 17 points.
CS 5 has 11 MC and 4 CR (9 points) totaling 20 points.
CS 6 has 7 MC and 5 CR (13 points) totaling 20 points.
SA 1/4 has 20 MC and 7 CR (19 points) totaling 39 points.
SA 2 has 15 MC and 4 CR (7 points) totaling 22 points.
SA 3 has 13 MC and 0 CR (0 points) totaling 13 points.

Every item is associated with a CS but not all items are associated with a SA, so the points of the SA may not add up to the total of the points for the total test.

Reading – Spanish Version

The fourth-grade Spanish Reading test consisted of 69 items totaling 87 points. There were 55 MC items worth 55 points and 14 CR items worth 32 points.

The numbers of CR items that are worth the various numbers of points are as follows:
2 items worth 1 point, 7 items worth 2 points, 4 items worth 3 points, 1 item worth 4 points.

The numbers of items and points by Content Standard (CS) and Sub-Content Area (SA) are:

- CS 1 has 25 MC and 2 CR (6 points) totaling 31 points.
- CS 4 has 11 MC and 5 CR (9 points) totaling 20 points.
- CS 5 has 12 MC and 5 CR (13 points) totaling 15 points.
- CS 6 has 7 MC and 2 CR (4 points) totaling 11 points.
- SA 1/4 has 21 MC and 5 CR (9 points) totaling 30 points.
- SA 2 has 14 MC and 4 CR (10 points) totaling 24 points.
- SA 3 has 8 MC and 0 CR (0 points) totaling 8 points.

Every item is associated with a CS but not all items are associated with a SA, so the points of the SA may not add up to the total of the points for the total test.

Writing

The fourth-grade Writing test consisted of 53 items totaling 69 points. There were 40 MC items worth 40 points and 13 CR items worth 29 points.

The numbers of CR items that are worth the various numbers of points are as follows:
7 items worth 1 point, 1 item worth 2 points, 5 items worth 4 points.

The numbers of items and points by Content Standard (CS) and Sub-Content Area (SA) are:

- CS 2 has 12 MC and 6 CR (21 points) totaling 33 points.
- CS 3 has 28 MC and 7 CR (8 points) totaling 36 points.
- SA 5 has 3 MC and 3 CR (12 points) totaling 15 points.
- SA 6 has 0 MC and 4 CR (11 points) totaling 11 points.
- SA 7 has 17 MC and 3 CR (3 points) totaling 20 points.
- SA 8 has 11 MC and 3 CR (3 points) totaling 14 points.

Every item is associated with a CS but not all items are associated with a SA, so the points of the SA may not add up to the total of the points for the total test.

Writing – Spanish Version

The fourth-grade Spanish Writing test consisted of 53 items totaling 69 points. There were 40 MC items worth 40 points and 13 CR items worth 29 points.

The numbers of CR items that are worth the various numbers of points are as follows:
7 items worth 1 point, 1 item worth 2 points, 5 items worth 4 points.

The numbers of items and points by Content Standard (CS) and Sub-Content Area (SA) are:

CS 2 has 0 MC and 6 CR (21 points) totaling 21 points.
CS 3 has 40 MC and 7 CR (8 points) totaling 48 points.
SA 5 has 0 MC and 3 CR (12 points) totaling 12 points.
SA 6 has 0 MC and 4 CR (11 points) totaling 11 points.
SA 7 has 20 MC and 4 CR (4 points) totaling 24 points.
SA 8 has 13 MC and 2 CR (2 points) totaling 15 points.

Every item is associated with a CS but not all items are associated with a SA, so the points of the SA may not add up to the total of the points for the total test.

Fifth Grade

Reading and Writing were assessed using a single form. Mathematics was assessed using a separate form.

Reading

The fifth-grade Reading test consisted of 74 items totaling 95 points. There were 60 MC items worth 60 points and 14 CR items worth 35 points.

The numbers of CR items that are worth the various numbers of points are as follows:
7 items worth 2 points, 7 items worth 3 points.

The numbers of items and points by Content Standard (CS) and Sub-Content Area (SA) are:

CS 1 has 15 MC and 2 CR (5 points) totaling 20 points.
CS 4 has 17 MC and 3 CR (6 points) totaling 23 points.
CS 5 has 16 MC and 3 CR (9 points) totaling 25 points.
CS 6 has 12 MC and 6 CR (15 points) totaling 27 points.
SA 1/4 has 21 MC and 7 CR (17 points) totaling 38 points.
SA 2 has 17 MC and 5 CR (12 points) totaling 29 points.
SA 3 has 8 MC and 0 CR (0 points) totaling 8 points.

Every item is associated with a CS but not all items are associated with a SA, so the points of the SA may not add up to the total of the points for the total test.

Note that these numbers do not include a multiple-choice item that was included on the Reading assessment but was dropped due to poor fit to the item response model and aberrant student response patterns (discussed further in this report). This was item 122 in session 6 in the operational test booklet.

Writing

The fifth-grade Writing test consisted of 54 items totaling 70 points. There were 41 MC items worth 41 points and 13 CR items worth 29 points.

The numbers of CR items that are worth the various numbers of points are as follows:
7 items worth 1 point, 1 item worth 2 points, 5 items worth 4 points.

The numbers of items and points by Content Standard (CS) and Sub-Content Area (SA) are:

CS 2 has 18 MC and 6 CR (21 points) totaling 39 points.

CS 3 has 23 MC and 7 CR (8 points) totaling 31 points.

SA 5 has 9 MC and 3 CR (12 points) totaling 21 points.

SA 6 has 0 MC and 4 CR (11 points) totaling 11 points.

SA 7 has 14 MC and 2 CR (2 points) totaling 16 points.

SA 8 has 12 MC and 4 CR (4 points) totaling 16 points.

Every item is associated with a CS but not all items are associated with a SA, so the points of the SA may not add up to the total of the points for the total test.

Mathematics

The fifth-grade Mathematics test consisted of 69 items totaling 96 points. There were 54 MC items worth 54 points and 15 CR items worth 42 points.

The numbers of CR items that are worth the various numbers of points are as follows:
6 items worth 2 points, 6 items worth 3 points, 3 items worth 4 points.

The numbers of items and points by Content Standard (CS) and Sub-Content Area (SA) are:

CS 1 has 14 MC and 2 CR (5 points) totaling 19 points.

CS 2 has 8 MC and 4 CR (11 points) totaling 19 points.

CS 3 has 7 MC and 4 CR (12 points) totaling 19 points.

CS 4/5 has 11 MC and 3 CR (9 points) totaling 20 points.

CS 6 has 14 MC and 2 CR (5 points) totaling 19 points.

SA 1 has 9 MC and 3 CR (8 points) totaling 17 points.

SA 2 has 2 MC and 3 CR (9 points) totaling 11 points.

SA 3 has 4 MC and 3 CR (10 points) totaling 14 points.

Every item is associated with a CS but not all items are associated with a SA, so the points of the SA may not add up to the total of the points for the total test.

Sixth Grade

Reading and Writing were assessed using a single form. Mathematics was assessed using a separate form.

Reading

The sixth-grade Reading test consisted of 73 items totaling 99 points. There were 57 MC items worth 57 points and 16 CR items worth 42 points.

The numbers of CR items that are worth the various numbers of points are as follows:
7 items worth 2 points, 8 items worth 3 points, 1 item worth 4 points.

The numbers of items and points by Content Standard (CS) and Sub-Content Area (SA) are:

- CS 1 has 24 MC and 8 CR (21 points) totaling 45 points.
- CS 4 has 10 MC and 2 CR (5 points) totaling 15 points.
- CS 5 has 14 MC and 3 CR (8 points) totaling 22 points.
- CS 6 has 9 MC and 3 CR (8 points) totaling 17 points.
- SA 1/4 has 30 MC and 6 CR (15 points) totaling 45 points.
- SA 2 has 11 MC and 9 CR (25 points) totaling 36 points.
- SA 3 has 8 MC and 0 CR (0 points) totaling 8 points.

Every item is associated with a CS but not all items are associated with a SA, so the points of the SA may not add up to the total of the points for the total test.

Writing

The sixth-grade Writing test consisted of 55 items totaling 71 points. There were 42 MC items worth 42 points and 13 CR items worth 29 points.

The numbers of CR items that are worth the various numbers of points are as follows:
7 items worth 1 point, 1 item worth 2 points, 5 items worth 4 points.

The numbers of items and points by Content Standard (CS) and Sub-Content Area (SA) are:

- CS 2 has 16 MC and 6 CR (21 points) totaling 37 points.
- CS 3 has 26 MC and 7 CR (8 points) totaling 34 points.
- SA 5 has 11 MC and 3 CR (12 points) totaling 23 points.
- SA 6 has 0 MC and 4 CR (11 points) totaling 11 points.
- SA 7 has 17 MC and 2 CR (2 points) totaling 19 points.
- SA 8 has 12 MC and 4 CR (4 points) totaling 16 points.

Every item is associated with a CS but not all items are associated with a SA, so the points of the SA may not add up to the total of the points for the total test.

Mathematics

The sixth-grade Mathematics test consisted of 60 items totaling 87 points. There were 45 MC items worth 45 points and 15 CR items worth 42 points.

The numbers of CR items that are worth the various numbers of points are as follows:
6 items worth 2 points, 6 items worth 3 points, 3 items worth 4 points.

The numbers of items and points by Content Standard (CS) and Sub-Content Area (SA) are:

CS 1 has 10 MC and 2 CR (7 points) totaling 17 points.
CS 2 has 7 MC and 3 CR (10 points) totaling 17 points.
CS 3 has 7 MC and 4 CR (11 points) totaling 18 points.
CS 4/5 has 12 MC and 4 CR (10 points) totaling 22 points.
CS 6 has 9 MC and 2 CR (4 points) totaling 13 points.
SA 1 has 6 MC and 2 CR (6 points) totaling 12 points.
SA 2 has 4 MC and 2 CR (7 points) totaling 11 points.
SA 3 has 4 MC and 3 CR (8 points) totaling 12 points.

Every item is associated with a CS but not all items are associated with a SA, so the points of the SA may not add up to the total of the points for the total test.

Seventh Grade

Reading and Writing were assessed using a single form. Mathematics was assessed using a separate form.

Reading

The seventh-grade Reading test consisted of 75 items totaling 98 points. There were 60 MC items worth 60 points and 15 CR items worth 38 points.

The numbers of CR items that are worth the various numbers of points are as follows:
7 items worth 2 points, 8 items worth 3 points.

The numbers of items and points by Content Standard (CS) and Sub-Content Area (SA) are:

CS 1 has 19 MC and 6 CR (16 points) totaling 35 points.
CS 4 has 14 MC and 2 CR (5 points) totaling 19 points.
CS 5 has 17 MC and 4 CR (10 points) totaling 27 points.
CS 6 has 10 MC and 3 CR (7 points) totaling 17 points.
SA 1 has 10 MC and 3 CR (7 points) totaling 17 points.
SA 2 has 20 MC and 9 CR (24 points) totaling 44 points.
SA 3 has 8 MC and 0 CR (0 points) totaling 8 points.
SA 4 has 8 MC and 2 CR (5 points) totaling 13 points.

Every item is associated with a CS but not all items are associated with a SA, so the points of the SA may not add up to the total of the points for the total test.

Writing

The seventh-grade Writing test consisted of 51 items totaling 67 points. There were 38 MC items worth 38 points and 13 CR items worth 29 points.

The numbers of CR items that are worth the various numbers of points are as follows:
7 items worth 1 point, 1 item worth 2 points, 5 items worth 4 points.

The numbers of items and points by Content Standard (CS) and Sub-Content Area (SA) are:

CS 2 has 15 MC and 6 CR (21 points) totaling 36 points.
CS 3 has 23 MC and 7 CR (8 points) totaling 31 points.
SA 5 has 5 MC and 3 CR (12 points) totaling 17 points.
SA 6 has 0 MC and 4 CR (11 points) totaling 11 points.
SA 7 has 8 MC and 2 CR (2 points) totaling 10 points.
SA 8 has 17 MC and 4 CR (4 points) totaling 21 points.

Every item is associated with a CS but not all items are associated with a SA, so the points of the SA may not add up to the total of the points for the total test.

Mathematics

The seventh-grade Mathematics test consisted of 60 items totaling 87 points. There were 45 MC items worth 45 points and 15 CR items worth 42 points.

The numbers of CR items that are worth the various numbers of points are as follows:
6 items worth 2 points, 6 items worth 3 points, 3 items worth 4 points.

The numbers of items and points by Content Standard (CS) and Sub-Content Area (SA) are:

CS 1/6 has 15 MC and 4 CR (11 points) totaling 26 points.
CS 2 has 9 MC and 3 CR (8 points) totaling 17 points.
CS 3 has 9 MC and 3 CR (9 points) totaling 18 points.
CS 4/5 has 12 MC and 5 CR (14 points) totaling 26 points.
SA 1 has 5 MC and 4 CR (11 points) totaling 16 points.
SA 2 has 3 MC and 3 CR (10 points) totaling 13 points.

Every item is associated with a CS but not all items are associated with a SA, so the points of the SA may not add up to the total of the points for the total test.

Eighth Grade

Reading and Writing were assessed using a single form. Mathematics and Science were assessed using two separate forms.

Reading

The eighth-grade Reading test consisted of 72 items totaling 88 points. There were 58 MC items worth 58 points and 14 CR items worth 30 points.

The numbers of CR items that are worth the various numbers of points are as follows:
12 items worth 2 points, 2 items worth 3 points.

The numbers of items and points by Content Standard (CS) and Sub-Content Area (SA) are:

CS 1 has 23 MC and 5 CR (11 points) totaling 34 points.
CS 4 has 12 MC and 2 CR (4 points) totaling 16 points.
CS 5 has 12 MC and 2 CR (4 points) totaling 16 points.
CS 6 has 11 MC and 5 CR (11 points) totaling 22 points.

SA 1 has 10 MC and 5 CR (11 points) totaling 21 points.

SA 2 has 21 MC and 5 CR (11 points) totaling 32 points.

SA 3 has 9 MC and 0 CR (0 points) totaling 9 points.

SA 4 has 8 MC and 3 CR (6 points) totaling 14 points.

Every item is associated with a CS but not all items are associated with a SA, so the points of the SA may not add up to the total of the points for the total test.

Writing

The eighth-grade Writing test consisted of 53 items totaling 69 points. There were 40 MC items worth 40 points and 13 CR items worth 29 points.

The numbers of CR items that are worth the various numbers of points are as follows:
7 items worth 1 point, 1 item worth 2 points, 5 items worth 4 points.

The numbers of items and points by Content Standard (CS) and Sub-Content Area (SA) are:

CS 2 has 17 MC and 6 CR (21 points) totaling 38 points.

CS 3 has 23 MC and 7 CR (8 points) totaling 31 points.

SA 5 has 9 MC and 3 CR (12 points) totaling 21 points.

SA 6 has 0 MC and 4 CR (11 points) totaling 11 points.

SA 7 has 15 MC and 1 CR (1 point) totaling 16 points.

SA 8 has 11 MC and 5 CR (5 points) totaling 16 points.

Every item is associated with a CS but not all items are associated with a SA, so the points of the SA may not add up to the total of the points for the total test.

Mathematics

The eighth-grade Mathematics test consisted of 59 items totaling 86 points. There were 44 MC items worth 44 points and 15 CR items worth 42 points.

The numbers of CR items that are worth the various numbers of points are as follows:
6 items worth 2 points, 6 items worth 3 points, 3 items worth 4 points.

The numbers of items and points by Content Standard (CS) and Sub-Content Area (SA) are:

CS 1/6 has 11 MC and 4 CR (11 points) totaling 22 points.

CS 2 has 11 MC and 4 CR (11 points) totaling 22 points.

CS 3 has 8 MC and 3 CR (8 points) totaling 16 points.

CS 4/5 has 14 MC and 4 CR (12 points) totaling 26 points.

SA 1 has 5 MC and 4 CR (11 points) totaling 16 points.

SA 2 has 8 MC and 1 CR (3 points) totaling 11 points.

SA 3 has 6 MC and 2 CR (6 points) totaling 12 points.

Every item is associated with a CS but not all items are associated with a SA, so the points of the SA may not add up to the total of the points for the total test.

Note that these numbers do not include a multiple-choice item that was included on the Mathematics assessment but was dropped due to poor fit to the item response model and aberrant student response patterns (discussed further in this report). This was item 2 in session 1 in the operational test booklet.

Science

The eighth-grade Science test consisted of 84 items totaling 98 points. There were 63 MC items worth 63 points and 21 CR items worth 35 points.

The numbers of CR items that are worth the various numbers of points are as follows:
11 items worth 1 point, 7 items worth 2 points, 2 items worth 3 points, 1 item worth 4 points.

The numbers of items and points by Content Standard (CS) and Sub-Content Area (SA) are:

- CS 1 has 12 MC and 9 CR (15 points) totaling 27 points.
- CS 2 has 16 MC and 3 CR (4 points) totaling 20 points.
- CS 3 has 13 MC and 5 CR (9 points) totaling 22 points.
- CS 4 has 16 MC and 2 CR (4 points) totaling 20 points.
- CS 5/6 has 6 MC and 2 CR (3 points) totaling 9 points.
- SA 1 has 4 MC and 5 CR (7 points) totaling 11 points.
- SA 2 has 8 MC and 4 CR (8 points) totaling 16 points.
- SA 3 has 9 MC and 1 CR (1 point) totaling 10 points.
- SA 4 has 7 MC and 2 CR (3 points) totaling 10 points.
- SA 5 has 12 MC and 1 CR (3 points) totaling 15 points.

Every item is associated with a CS but not all items are associated with a SA, so the points of the SA may not add up to the total of the points for the total test.

Ninth Grade

Reading and Writing were assessed using a single form. Mathematics was assessed using a separate form.

Reading

The ninth-grade Reading test consisted of 71 items totaling 93 points. There were 56 MC items worth 56 points and 15 CR items worth 37 points.

The numbers of CR items that are worth the various numbers of points are as follows:
9 items worth 2 points, 5 items worth 3 points, 1 item worth 4 points.

The numbers of items and points by Content Standard (CS) and Sub-Content Area (SA) are:

- CS 1 has 18 MC and 5 CR (13 points) totaling 31 points.
- CS 4 has 8 MC and 4 CR (10 points) totaling 18 points.
- CS 5 has 15 MC and 2 CR (4 points) totaling 19 points.
- CS 6 has 15 MC and 4 CR (10 points) totaling 25 points.
- SA 1 has 17 MC and 6 CR (16 points) totaling 33 points.

SA 2 has 10 MC and 4 CR (10 points) totaling 20 points.
SA 3 has 10 MC and 0 CR (0 points) totaling 10 points.
SA 4 has 10 MC and 4 CR (9 points) totaling 19 points.

Every item is associated with a CS but not all items are associated with a SA, so the points of the SA may not add up to the total of the points for the total test.

Writing

The ninth-grade Writing test consisted of 54 items totaling 70 points. There were 41 MC items worth 41 points and 13 CR items worth 29 points.

The numbers of CR items that are worth the various numbers of points are as follows:
7 items worth 1 point, 1 item worth 2 points, 5 items worth 4 points.

The numbers of items and points by Content Standard (CS) and Sub-Content Area (SA) are:

CS 2 has 20 MC and 6 CR (21 points) totaling 41 points.
CS 3 has 21 MC and 7 CR (8 points) totaling 29 points.
SA 5 has 9 MC and 3 CR (12 points) totaling 21 points.
SA 6 has 0 MC and 4 CR (11 points) totaling 11 points.
SA 7 has 14 MC and 2 CR (2 points) totaling 16 points.
SA 8 has 11 MC and 4 CR (4 points) totaling 15 points.

Every item is associated with a CS but not all items are associated with a SA, so the points of the SA may not add up to the total of the points for the total test.

Mathematics

The ninth-grade Mathematics test consisted of 60 items totaling 87 points. There were 45 MC items worth 45 points and 15 CR items worth 42 points.

The numbers of CR items that are worth the various numbers of points are as follows:
6 items worth 2 points, 6 items worth 3 points, 3 items worth 4 points.

The numbers of items and points by Content Standard (CS) and Sub-Content Area (SA) are:

CS 1/6 has 10 MC and 3 CR (7 points) totaling 17 points.
CS 2 has 12 MC and 5 CR (14 points) totaling 26 points.
CS 3 has 11 MC and 4 CR (11 points) totaling 22 points.
CS 4/5 has 12 MC and 3 CR (10 points) totaling 22 points.
SA 1 has 5 MC and 5 CR (16 points) totaling 21 points.
SA 2 has 5 MC and 3 CR (7 points) totaling 12 points.

Every item is associated with a CS but not all items are associated with a SA, so the points of the SA may not add up to the total of the points for the total test.

Tenth Grade

Reading and Writing were assessed using a single form. Mathematics was assessed using a separate form.

Reading

The tenth-grade Reading test consisted of 72 items totaling 94 points. There were 59 MC items worth 59 points and 13 CR items worth 35 points.

The numbers of CR items that are worth the various numbers of points are as follows: 6 items worth 2 points, 5 items worth 3 points, 2 items worth 4 points.

The numbers of items and points by Content Standard (CS) and Sub-Content Area (SA) are:

- CS 1 has 18 MC and 3 CR (9 points) totaling 27 points.
- CS 4 has 10 MC and 5 CR (13 points) totaling 23 points.
- CS 5 has 16 MC and 1 CR (3 points) totaling 19 points.
- CS 6 has 15 MC and 4 CR (10 points) totaling 25 points.
- SA 1 has 18 MC and 5 CR (15 points) totaling 33 points.
- SA 2 has 14 MC and 5 CR (13 points) totaling 27 points.
- SA 3 has 10 MC and 0 CR (0 points) totaling 10 points.
- SA 4 has 5 MC and 3 CR (7 points) totaling 12 points.

Every item is associated with a CS but not all items are associated with a SA, so the points of the SA may not add up to the total of the points for the total test.

Writing

The tenth-grade Writing test consisted of 53 items totaling 69 points. There were 40 MC items worth 40 points and 13 CR items worth 29 points.

The numbers of CR items that are worth the various numbers of points are as follows: 7 items worth 1 point, 1 item worth 2 points, 5 items worth 4 points.

The numbers of items and points by Content Standard (CS) and Sub-Content Area (SA) are:

- CS 2 has 22 MC and 6 CR (21 points) totaling 43 points.
- CS 3 has 18 MC and 7 CR (8 points) totaling 26 points.
- SA 5 has 7 MC and 3 CR (12 points) totaling 19 points.
- SA 6 has 0 MC and 4 CR (11 points) totaling 11 points.
- SA 7 has 12 MC and 2 CR (2 points) totaling 14 points.
- SA 8 has 11 MC and 4 CR (4 points) totaling 15 points.

Every item is associated with a CS but not all items are associated with a SA, so the points of the SA may not add up to the total of the points for the total test.

Mathematics

The tenth-grade Mathematics test consisted of 60 items totaling 87 points. There were 45 MC items worth 45 points and 15 CR items worth 42 points.

The numbers of CR items that are worth the various numbers of points are as follows:
6 items worth 2 points, 6 items worth 3 points, 3 items worth 4 points.

The numbers of items and points by Content Standard (CS) and Sub-Content Area (SA) are:

- CS 1/6 has 12 MC and 2 CR (5 points) totaling 17 points.
- CS 2 has 12 MC and 5 CR (14 points) totaling 26 points.
- CS 3 has 11 MC and 4 CR (11 points) totaling 22 points.
- CS 4/5 has 10 MC and 4 CR (12 points) totaling 22 points.
- SA 1 has 5 MC and 5 CR (14 points) totaling 19 points.
- SA 2 has 3 MC and 2 CR (7 points) totaling 10 points.

Every item is associated with a CS but not all items are associated with a SA, so the points of the SA may not add up to the total of the points for the total test.

Part 2: Scaling and Scoring Procedures

Scale Scores for the Total Test and by Content Standard and Sub-Content Area

Students' total scale scores are based on their performance on all the items on the test. Students also receive a score for each content standard (and for each sub-content area) that is based only on the items that contribute to the given content standard (or sub-content area). Note that every item on the test corresponds to some content standard but not all items contribute to a sub-content area. The scale scores for the content standards and the sub-content areas are calculated using the item parameters that are obtained when the *total* test is calibrated (see Part 5, Scaling and Calibration).

Students were scored at the total test, content standard, and sub-content area levels using item response theory pattern scoring procedures. This procedure produces maximum-likelihood trait estimates (scale scores) based on students' item response patterns, as described by Lord (1974; 1980, pp. 179-181). Item-pattern scoring takes more information into account and is more accurate than number-correct scoring in which all students with the same number correct receive the same score, regardless of how that score is obtained. On average, the increase in accuracy is, equivalent to approximately a 15-20% increase in test length (Yen, 1984; Yen & Candell, 1991). Note that score reliability tends to increase with the number of items, and thus the total score is more reliable than the content standard or sub-content area scores.

Vertical Scale Design for Reading, Writing and Mathematics

The 2002 CSAP Reading, Writing, and Mathematics scales were placed on continuous vertical scales that span grades 4 through 10 for Reading, grades 3 through 10 for Writing, and grades 5 through 10 for Mathematics. This was accomplished by means of items that were shared between the tests of adjacent grades. Chained equating was used to establish the

vertical scales for Writing and Mathematics. That is, the tests were first calibrated separately at each grade and then the Stocking and Lord (1983) procedure was used to place each grade on the vertical scale that was developed for each content area. Grade 7 was used as the starting point of the chain. A common linear transformation was also applied to the scale obtained in each grade for Writing and Mathematics. For Reading, a vertical scale had already been established in 2001. The 2002 assessments were linked to the 2001 vertical scale by using the items that were shared with the test of the year before and the items that were shared between adjacent grades in the Stocking and Lord (1983) equating procedure for Reading.

By means of these equating procedures, unique metrics were obtained for the CSAP Writing and Mathematics vertical scales and maintained for the Reading vertical scale. The vertical scales had a lowest obtainable scale score (LOSS) of 150 in grade 3 Reading and Writing, a LOSS of 220 in grade 5 Mathematics, a highest obtainable scale score (HOSS) of 999 in grade 10 Reading, and a HOSS of 950 in grade 10 Writing and Mathematics.

The scaling and equating design for Science remained unchanged from the previous year, and this design was also applied to the Spanish tests. The 2002 CSAP tests for Spanish reading, Spanish Writing, and Science contained anchor items from the previous administration (2001) that allowed the 2002 tests to be anchored to the previously established scale using the Stocking and Lord (1983) procedure.

These scaling and calibration methods are presented in Part 5.

Part 3: Results

Student results are reported statewide in terms of scale scores and performance levels. The scale score ranges for each grade and content area are listed in Table 7. The performance level cut scores were adopted by the Colorado State Board of Education, based on the recommendations of standard setting committees composed of qualified Colorado educators, using a variation of the Bookmark standard setting procedure (Lewis, Mitzel, & Green, 1996). New cut scores were set for Writing and Mathematics in 2002. For Reading, Science, and for the Spanish tests, the cut scores from the previous year were used. Detailed information about the cut scores and standard setting are available in the Colorado CSAP Standard Setting Technical Report (2002).

Summary Statistics

Summary statistics are based on the total Colorado student population tested by CSAP. Table 8 presents the mean, median, and standard deviation of the scale scores for the total population and each gender in each grade/content area. Note that the male and female students do not equal the total population because some students' tests did not identify gender. Tables 9 and 10 contain scale score descriptive statistics for each content standard and sub-content area, respectively. Since the scale scores for content standards and sub-content areas are computed based on fewer items, students more easily get the highest

obtainable score or the lowest obtainable score on these than on the total test, causing the scale score distributions to be skewed in some cases. For that reason, means as well as medians, are reported. Tables 11 and 12 contain number-correct descriptive statistics for the total population and the mean percent of the maximum points obtained, for each content standard and sub-content area, respectively.

Note that grade 3 Reading measures only one content standard; content standards 1 and 6 are combined in grades 7 through 10 Mathematics; content standards 4 and 5 are combined in grades 5 through 10 Mathematics; and content standards 5 and 6 are combined for grade 8 Science. Similarly, sub-content areas 1 and 4 are combined for grades 3 through 6 Reading.

Third Grade

Reading

The mean scale score for the total population of students taking the 2002 third-grade Reading assessment is 567 with a standard deviation of 80.5. The mean scale score for female students is 574 with a standard deviation of 78.7, and the mean scale score for male students is 561 with a standard deviation of 81.5.

The scale score frequency distribution of the third-grade Reading assessment for the total population is shown in Appendix 1. Figure 1 graphically represents the scale score frequency distributions for the total population and for the groups of male and female students separately. The figure shows that the scale score distributions for the total population and for each gender are slightly negatively skewed.

The mean scale scores for SA 1/4 (Fiction and Poetry) and 2 (Nonfiction) are 571 and 588 with standard deviations of 93.8 and 114.3, respectively. The median scale score for both sub-content areas is 570, and is identical to the median for the total test scale score.

The mean percents of the maximum obtainable total score for SA 1/4 and 2 are 71.3 and 82.7 respectively, and the mean percent for the total test is 75.7.

Reading – Spanish Version

The mean scale score for the total population of students taking the 2002 third-grade Spanish Reading assessment is 519 with a standard deviation of 44.5. The mean scale score for female students is 528 with a standard deviation of 42.3, and the mean scale score for male students is 511 with a standard deviation of 45.1.

The scale score frequency distribution of the third-grade Reading assessment for the total population is shown in Appendix 2. Figure 2 graphically represents the scale score frequency distributions for the total population and for the groups of male and female students separately. The figure shows that the scale score distributions for the total population and for each gender are slightly negatively skewed.

The mean scale scores for SA 1/4 (Fiction and Poetry) and 2 (Nonfiction) are 520 and 518 with standard deviations of 47.4 and 70.7, respectively. The median scale scores vary between 522 and 524 for the sub-content areas, and are close to the median for the total test scale score, 521.

The mean percents of the maximum obtainable score for SA 1/4 and 2 are 65.7 and 61.1 respectively, and the mean percent for the total test is 63.9. This indicates that the average item difficulty was fairly similar for these sub-content areas.

Writing

The mean scale score for the total population of students taking the 2002 third-grade Writing assessment is 466 with a standard deviation of 52.4. The mean scale score for female students is 472 with a standard deviation of 52.5, and the mean scale score for male students is 460 with a standard deviation of 51.5.

The scale score frequency distribution for the total population is shown in Appendix 3. Figure 3 graphically represents the scale score frequency distributions for the total population and for the groups of male and female students separately. The figure shows that the scale score distributions for the total population and for each gender are approximately normal.

The mean scale score for CS 2 (Write for a Variety of Purposes) is 466 with a standard deviation of 62.5, and 475 for CS 3 (Write Using Conventions) with a standard deviation of 69.2. The mean scale scores for the sub-content areas range from 471 on SA 5 (Paragraph Writing) to 489 on SA 7 (Grammar and Usage). The median scale scores vary between 466 and 468 for the content standards, and between 465 and 470 for the sub-content areas, and all are close to the median for the total test scale score, 467.

The mean percents of the maximum obtainable score for CS 2 (Write for a Variety of Purposes) and CS 3 (Write Using Conventions) are 66.5 and 75.9, respectively. The mean percent of the maximum obtainable score for the total test is 79.4. The mean percents of the maximum obtainable score for the sub-content areas range from 78.1 to 80.3. Note that the mean percents are closer for the sub-content areas than for the content standards.

Fourth Grade

Reading

The mean scale score for the total population of students taking the 2002 fourth-grade Reading assessment is 584 with a standard deviation of 65.6. The mean scale score for female students is 589 with a standard deviation of 63.1, and the mean scale score for male students is 579 with a standard deviation of 67.5.

The scale score frequency distribution for the total population is shown in Appendix 4. Figure 4 graphically represents the scale score frequency distributions for the total population

and for the groups of male and female students separately. The figure shows that the distributions of scale scores for the total population and for each gender are slightly negatively skewed.

The mean scale scores for the content standards range from 582 on CS 4 (Thinking Skills) to 590 on CS 1 (Reading Comprehension). The mean scale scores for the sub-content areas range from 585 on SA 1/4 (Fiction and Poetry) to 597 on SA 2 (Nonfiction). The median scale scores vary between 590 and 592 for the content standards, and between 591 and 593 for the sub-content areas, and all are close to the median for the total test scale score, 590.

The mean percents of the maximum obtainable score for the content standards range from 61.3 on CS 4 (Thinking Skills) to 76.6 on CS 1 (Reading Comprehension). The mean percent of the maximum obtainable score for the total test is 68.1. The mean percents for the sub-content areas range from 64.5 to 76.8. The observed ranges indicate that the average item difficulty differed somewhat across the content standards and across the sub-content areas.

Reading – Spanish Version

The mean scale score for the total population of students taking the 2002 fourth-grade Spanish Reading assessment is 524 with a standard deviation of 46.1. The mean scale score for female students is 530 with a standard deviation of 43.8, and the mean scale score for male students is 517 with a standard deviation of 47.6.

The scale score frequency distribution for the total population is shown in Appendix 5. Figure 5 graphically represents the scale score frequency distributions for the total population and for the groups of male and female students separately. The figure shows that the scale score distributions for the total population and for each gender are slightly negatively skewed.

The mean scale scores for the content standards range from 518 on CS 4 (Thinking Skills) to 525 on CS 1 (Reading Comprehension). The mean scale scores for the sub-content areas range from 523 on SA 1/4 (Fiction and Poetry) and SA 2 (Nonfiction) to 526 on SA 3 (Vocabulary). The median scale scores vary between 527 and 529 for the content standards, and between 528 and 530 for the sub-content areas, and all are close to the median for the total test scale score, 527.

The mean percents of the maximum obtainable score for the content standards range from 46.2 on CS 4 (Thinking Skills) to 64.7 on CS 1 (Reading Comprehension). The mean percent of the maximum obtainable score for the total test is 55.6. The mean percents for the sub-content areas range from 56.4 to 56.8. The sub-content areas appear to be similar in average item difficulty, whereas the content standards appear to vary somewhat.

Writing

The mean scale score for the total population of students taking the 2002 fourth-grade Writing assessment is 485 with a standard deviation of 53.0. The mean scale score for female students is 495 with a standard deviation of 53.9, and the mean scale score for male students is 477 with a standard deviation of 50.7.

The scale score frequency distribution for the total population is shown in Appendix 6. Figure 6 graphically represents the scale score frequency distributions for the total population and for the groups of male and female students separately. The figure shows that the scale score distributions for the total population and for each gender are approximately normal.

The mean scale score for CS 2 (Write for a Variety of Purposes) is 486 with a standard deviation of 57.2 and the mean scale score for CS 3 (Write Using Conventions) is 492 with a standard deviation of 69.2. The mean scale scores for the sub-content areas range from 489 on SA 5 (Paragraph Writing) to 509 on SA 8 (Mechanics). The median scale scores vary between 484 and 487 for the content standards, and between 486 and 492 for the sub-content areas, and all are close to the median for the total test scale score, 486.

The mean percents of the maximum obtainable score for CS 2 (Write for a Variety of Purposes) and CS 3 (Write Using Conventions) are 66.5 and 75.9, respectively. The mean percent of the maximum obtainable score for the total test is 71.3. The mean percents of the maximum obtainable score for the sub-content areas range from 58.7 to 75.5. Note that the mean percents are closer for the content standards than for the sub-content areas.

Writing – Spanish Version

The mean scale score for the total population of students taking the 2002 fourth-grade Spanish Writing assessment is 520 with a standard deviation of 45.7. The mean scale score for female students is 529 with a standard deviation of 44.0, and the mean scale score for male students is 511 with a standard deviation of 45.7.

The scale score frequency distribution for the total population is shown in Appendix 7. Figure 7 graphically represents the scale score frequency distributions for the total population and for the groups of male and female students separately. The figure shows that the scale score distributions for the total population and for each gender are slightly negatively skewed.

The mean scale score for CS 2 (Write for a Variety of Purposes) is 524 with a standard deviation of 59.4 and the mean scale score for CS 3 (Write Using Conventions) is 520 with a standard deviation of 48.1. The mean scale scores for the sub-content areas range from 513 on SA 8 (Mechanics) to 525 on SA 5 (Paragraph Writing) and SA 6 (Extended Writing). The median scale scores vary between 521 and 523 for the content standards, and between 512 and 522 for the sub-content areas, and most are close to the median for the total test scale score, 523.

The mean percents of the maximum obtainable score for CS 2 (Write for a Variety of Purposes) and CS 3 (Write Using Conventions) are 58.3 and 55.9, respectively. The mean percent of the maximum obtainable score for the total test is 56.7. The mean percents of the maximum obtainable score for the sub-content areas range from 47.7 to 62.3. Note that the mean percents are closer for the content standards than for the sub-content areas.

Fifth Grade

Reading

The mean scale score for the total population of students taking the 2002 fifth-grade Reading assessment is 605 with a standard deviation of 67.7. The mean scale score for female students is 609 with a standard deviation of 64.9 and the mean scale score for male students is 600 with a standard deviation of 70.0.

The scale score frequency distribution for the total population is shown in Appendix 8. Figure 8 graphically represents the frequency distributions for the total population and for the groups of male and female students separately. The figure shows that the scale score distributions for the total population and for each gender are slightly negatively skewed.

The mean scale scores for the content standards range from 605 on CS 4 (Thinking Skills) to 611 on CS 1 (Reading Comprehension). The mean scale scores for the sub-content areas range from 604 on SA 2 (Nonfiction) to 641 on SA 3 (Vocabulary). The median scale scores vary between 611 and 613 for the content standards, and between 611 and 632 for the sub-content areas, and most are close to the median for the total test scale score, 612. It should be noted that the scale score for SA 3 is based on the responses on 8 multiple-choice items that were rather easy (on average, students get 6 out of the 8 items correct), which results in the median scale score for SA 3 being somewhat higher than the median scale score for the total test.

The mean percents of the maximum obtainable score for content standards range from 61.0 on CS 6 (Literature) to 70.0 on CS 1 (Reading Comprehension). The mean percent of the maximum obtainable score for the total test is 64.6. The mean percents for the sub-content areas range from 61.5 to 76.2.

Writing

The mean scale score for the total population of students taking the 2002 fifth-grade Writing assessment is 500 with a standard deviation of 56.8. The mean scale score for female students is 509 with a standard deviation of 56.7, and the mean scale score for male students is 490 with a standard deviation of 55.3.

The scale score frequency distribution for the total population is shown in Appendix 9. Figure 9 graphically represents the scale score frequency distributions for the total population and for the groups of male and female students separately. The figure shows that the scale score distributions for the total population and for each gender are approximately normal.

The mean scale score for CS 2 (Write for a Variety of Purposes) is 500 with a standard deviation of 59.1 and the mean scale score for CS 3 (Write Using Conventions) is 503 with a standard deviation of 68.0. The mean scale scores for the sub-content areas range from 503 on SA 5 (Paragraph Writing) to 518 on SA 6 (Extended Writing). The median scale scores vary between 500 and 501 for the content standards, and between 501 and 503 for the sub-content areas, and all are close to the median for the total test scale score, 500.

The mean percents of the maximum obtainable score for CS 2 (Write for a Variety of Purposes) and CS 3 (Write Using Conventions) are 63.9 and 70.9, respectively. The mean percent of the maximum obtainable score for the total test is 66.9. The mean percents of the maximum obtainable score for the sub-content areas range from 60.1 to 73.1. Note that the mean percents are closer for the content standards than for the sub-content areas.

Mathematics

The mean scale score for the total population of students taking the 2002 fifth-grade Mathematics assessment is 503 with a standard deviation of 73.7. The mean scale score for female students is 502 with a standard deviation of 71.5, and the mean scale score for male students is 504 with a standard deviation of 75.7.

The scale score frequency distribution for the total population is shown in Appendix 10. Figure 10 graphically represents the frequency distributions for the total population and for the groups of male and female students separately. The figure shows that the scale score distributions for the total population and for each gender are approximately normal.

The mean scale scores for the content standards range from 509 on CS 6 (Computational Techniques) to 515 on CS 2 (Algebra, Patterns and Functions) and CS 3 (Statistics and Probability). The mean scale scores for the sub-content areas range from 517 on SA 1 (Number and Operational Sense) to 525 on SA 2 (Patterns). The median scale scores vary between 503 and 508 for the content standards, and between 503 and 515 for the sub-content areas, and all are close to the median for the total test scale score, 504.

The mean percents of the maximum obtainable score for the content standards range from 64.5 on CS 2 (Algebra, Patterns and Functions) to 72.8 on CS 3 (Statistics and Probability). The mean percent of the maximum obtainable score for the total test is 68.0. The mean percents for the sub-content areas range from 61.5 to 73.2.

Sixth Grade

Reading

The mean scale score for the total population of students taking the 2002 sixth-grade Reading assessment is 620 with a standard deviation of 65.7. The mean scale score for female students is 629 with a standard deviation of 62.4, and the mean scale score for male students is 612 with a standard deviation of 67.7.

The scale score frequency distribution for the total population is shown in Appendix 11. Figure 11 graphically represents the frequency distributions for the total population and for the groups of male and female students separately. The figure shows that the scale score distributions for the total population and for each gender are slightly negatively skewed.

The mean scale scores for the content standards range from 619 on CS 6 (Literature) to 626 on CS 4 (Thinking Skills). The mean scale scores for the sub-content areas range from 621 on SA 1/4 (Fiction and Poetry) and SA 2 (Nonfiction) to 627 on SA 3 (Vocabulary). The median scale scores vary between 625 and 628 for the content standards, and between 623 and 629 for the sub-content areas, and all are close to the median for the total test scale score, 627.

The mean percents of the maximum obtainable score for content standards range from 60.0 on CS 6 (Literature) to 66.0 on CS 4 (Thinking Skills). The mean percent of the maximum obtainable score for the total test is 63.0. The mean percents for the sub-content areas range from 60.1 to 66.2.

Writing

The mean scale score for the total population of students taking the 2002 sixth-grade Writing assessment is 514 with a standard deviation of 63.5. The mean scale score for female students is 528 with a standard deviation of 62.0, and the mean scale score for male students is 501 with a standard deviation of 62.1.

The scale score frequency distribution for the total population is shown in Appendix 12. Figure 12 graphically represents the scale score frequency distributions for the total population and for the groups of male and female students separately. The figure shows that the scale score distributions for the total population and for each gender are approximately normal.

The mean scale score for CS 2 (Write for a Variety of Purposes) and CS 3 (Write Using Conventions) is 516 with standard deviations of 67.7 and 72.6, respectively. The mean scale scores for the sub-content areas range from 514 on SA 8 (Mechanics) to 528 on SA 6 (Extended Writing). The median scale scores vary between 514 and 517 for the content standards, and between 513 and 529 for the sub-content areas, and most are close to the median for the total test scale score, 515.

The mean percents of the maximum obtainable score for CS 2 (Write for a Variety of Purposes) and CS 3 (Write Using Conventions) are 60.9 and 65.0, respectively. The mean percent of the maximum obtainable score for the total test is 62.9. The mean percents of the maximum obtainable score for the sub-content areas range from 57.4 to 70.1. Note that the mean percents are closer for the content standards than for the sub-content areas.

Mathematics

The mean scale score for the total population of students taking the 2002 sixth-grade Mathematics assessment is 521 with a standard deviation of 73.6. The mean scale score for female students is 522 with a standard deviation of 70.9, and the mean scale score for male students is 520 with a standard deviation of 75.9.

The scale score frequency distribution for the total population is shown in Appendix 13. Figure 13 graphically represents the frequency distributions for the total population and for the groups of male and female students separately. The figure shows that the scale score distributions for the total population and for each gender are slightly negatively skewed.

The mean scale scores for the content standards range from 522 on CS 1 (Number Sense) to 535 on CS 3 (Statistics and Probability). The mean scale scores for sub-content areas range from 518 on SA 1 (Number and Operational Sense) to 540 on SA 2 (Patterns). The median scale scores vary between 523 and 528 for the content standards, and between 525 and 531 for the sub-content areas, and all are close to the median for the total test scale score, 524.

The mean percents of the maximum obtainable score for the content standards range from 56.1 on CS 1 (Number Sense) to 72.9 on CS 3 (Statistics and Probability). The mean percent of the maximum obtainable score for the total test is 64.5. The mean percents of the maximum obtainable score for the sub-content areas range from 51.5 to 68.0. The observed ranges indicate that the average item difficulty varied somewhat across the content standards and across the sub-content areas.

Seventh Grade

Reading

The mean scale score for the total population of students taking the 2002 seventh-grade Reading assessment is 632 with a standard deviation of 65.9. The mean scale score for female students is 641 with a standard deviation of 62.4, and the mean scale score for male students is 624 with a standard deviation of 68.0.

The scale score frequency distribution for the total population is shown in Appendix 14. Figure 14 graphically represents the frequency distributions for total population and for the groups of male and female students separately. The figure indicates that the distribution of the scale scores for the total population and for each gender is slightly negatively skewed.

The mean scale scores for the content standards range from 633 on CS 6 (Literature) to 643 on CS 4 (Thinking Skills). The mean scale scores for the sub-content areas range from 633 on SA 2 (Nonfiction) to 648 on SA 1 (Fiction). The median scale scores vary between 636 and 641 for the content standards, and between 638 and 644 for the sub-content areas, and all are close to the median for the total test scale score, 638.

The mean percents of the maximum obtainable score for the content standards range from 59.6 on CS 6 (Literature) to 72.1 on CS 4 (Thinking Skills). The mean percent of the maximum obtainable score for the total test is 68.0. The mean percents of the maximum obtainable score for the sub-content areas range from 57.6 to 73.7. The observed ranges indicate that the average item difficulty varied somewhat across the content standards and across the sub-content areas.

Writing

The mean scale score for the total population of students taking the 2002 seventh-grade Writing assessment is 541 with a standard deviation of 64.6. The mean scale score for female students is 556 with a standard deviation of 62.9, and the mean scale score for male students is 527 with a standard deviation of 62.9.

The scale score frequency distribution for the total population is shown in Appendix 15. Figure 15 graphically represents the frequency distributions for the total population and for the groups of male and female students separately. The figure indicates that the scale score distributions are approximately normal for the total population and for each gender.

The mean scale scores for CS 2 (Write for a Variety of Purposes) and CS 3 (Write Using Conventions) are 541 and 545 with standard deviations of 67.6 and 75.6, respectively. The mean scale scores for the sub-content areas range from 534 on SA 7 (Grammar and Usage) to 558 on SA 6 (Extended Writing). The median scale scores vary between 541 and 544 for the content standards, and between 542 and 546 for the sub-content areas, and all are close to the median for the total test scale score, 542.

The mean percents of the maximum obtainable score for CS 2 (Write for a Variety of Purposes) and CS 3 (Write Using Conventions) are 62.6 and 61.8, respectively. The mean percent of the maximum obtainable score for the total test is 62.3. The mean percents of the maximum obtainable score for the sub-content areas range from 57.6 to 70.4.

Mathematics

The mean scale score for the total population of students taking the 2002 seventh-grade Mathematics assessment is 536 with a standard deviation of 72.4. The mean scale score for female students is 536 with a standard deviation of 69.5. The mean scale score for male students is 535 with a standard deviation of 75.1.

The scale score frequency distribution for the total population is shown in Appendix 16. Figure 16 graphically represents the frequency distributions for the total population and for the groups of male and female students separately. The figure indicates that the scale score distributions are slightly negatively skewed for the total population and for each gender.

The mean scale scores for the content standards range from 533 on CS 4/5 (Geometry and Measurement) to 541 on CS 3 (Statistics and Probability). The mean scale scores for the sub-content areas range from 517 on SA 2 (Area and Proportional Relationships) to 532 on SA 1 (Number Sense). The median scale scores vary between 542 and 546 for the content standards, and between 537 and 542 for the sub-content areas, and all are close to the median for the total test scale score, 543.

The mean percents of the maximum obtainable score for the content standards range from 48.4 on CS 4/5 (Geometry and Measurement) to 58.8 on CS 3 (Statistics and Probability). The mean percent of the maximum obtainable score for the total test is 53.5. The mean percents of the maximum obtainable score for the sub-content areas range from 33.8 to 43.4.

Eighth Grade

Reading

The mean scale score for the total population of students taking the 2002 eighth-grade Reading assessment is 651 with a standard deviation of 59.7. The mean scale score for female students is 658 with a standard deviation of 56.5, and the mean scale score for male students is 644 with a standard deviation of 61.8.

The scale score frequency distribution for the total population is shown in Appendix 17. Figure 17 graphically represents the frequency distributions for the total population and for the groups of male and female students separately. The figure shows that the scale score distributions for the total population and for each gender are slightly negatively skewed.

The mean scale scores for the content standards range from 650 on CS 5 (Use of Literary Information) to 672 on CS 4 (Thinking Skills). The mean scale scores for the sub-content areas range from 656 on SA 1 (Fiction) to 661 on SA 4 (Poetry). The median scale scores vary between 657 and 658 for the content standards, and between 656 and 660 for the sub-content areas, and all are close to the median for the total test scale score, 658.

The mean percents of the maximum obtainable score for the content standards range from 63.1 on CS 5 (Use of Literary Information) to 74.5 on CS 4 (Thinking Skills). The mean percent of the maximum obtainable score for the total test is 67.9. The mean percents of the maximum obtainable score for the sub-content areas range from 58.7 to 74.8. The observed ranges indicate that the average item difficulty varies somewhat across the content standards and across the sub-content areas.

Writing

The mean scale score for the total population of students taking the 2002 eighth-grade Writing assessment is 557 with a standard deviation of 71.4. The mean scale score for female students is 574 with a standard deviation of 69.5, and the mean scale score for male students is 540 with a standard deviation of 69.0.

The scale score frequency distribution for the total population is shown in Appendix 18. Figure 18 graphically represents the frequency distributions for the total population and for the groups of male and female students separately. The figure indicates that the scale score distributions are approximately normal for the total population and for each gender.

The mean scale scores for CS 2 (Write for a Variety of Purposes) and CS 3 (Write Using Conventions) are 556 and 566 with standard deviations of 74.4 and 87.9, respectively. The mean scale scores for the sub-content areas range from 554 on SA 5 (Paragraph Writing) to 586 on SA 6 (Extended Writing). The median scale scores vary between 557 and 561 for the content standards, and between 552 and 587 for the sub-content areas, and are close to the median for the total test scale score, 559. The median scale score for SA 6 (Extended

Writing), 587, was a bit higher than the median for the total test score. It should be noted that the score for this sub-content area is computed based on the four scores a student gets for his/her response to the extended writing prompt. Consequently, the scale score variable for this sub-content area is rather discrete.

The mean percents of the maximum obtainable score for CS 2 (Write for a Variety of Purposes) and CS 3 (Write Using Conventions) are 66.2 and 73.4, respectively. The mean percent of the maximum obtainable score for the total test is 69.4. The mean percents of the maximum obtainable score for the sub-content areas range from 62.1 to 77.0.

Mathematics

The mean scale score for the total population of students taking the 2002 eighth-grade Mathematics assessment is 556 with a standard deviation of 68.9. The mean scale score for female students is 557 with a standard deviation of 65.9. The mean scale score for male students is 556 with a standard deviation of 71.7.

The scale score frequency distribution for the total population is shown in Appendix 19. Figure 19 graphically represents the frequency distributions for the total population and for the groups of male and female students separately. The scale score distributions are slightly negatively skewed for the total population and for each gender.

The mean scale scores for the content standards range from 552 on CS 1/6 (Number Sense) and CS 3 (Statistics and Probability) to 560 on CS 4/5 (Geometry and Measurement). The mean scale scores for sub-content areas range from 552 on SA 2 (Proportional Thinking) to 565 on SA 3 (Geometry). The median scale scores vary between 559 and 564 for the content standards, and between 560 and 565 for the sub-content areas, and all are close to the median for the total test scale score, 561.

The mean percents of the maximum obtainable score for the content standards range from 45.1 on CS 3 (Statistics and Probability) to 56.6 on CS 4/5 (Geometry and Measurement). The mean percent of the maximum obtainable score for the total test is 51.0. The mean percents of the maximum obtainable score for the sub-content areas range from 49.5 to 57.4.

Science

The mean scale score for the total population of students taking the 2002 eighth-grade Science assessment is 501 with a standard deviation of 61.6. The mean scale score for female students is 498 with a standard deviation of 57.4, and the mean scale score for male students is 505 with a standard deviation of 65.2.

The scale score frequency distribution for the total population is shown in Appendix 20. Figure 20 graphically represents the frequency distributions for the total population and for the groups of male and female students separately. The distributions of the scale scores are slightly negatively skewed for the total population and for each gender.

The mean scale scores for the content standards range from 500 on CS 4 (Earth and Space Science) to 507 on CS 1 (Scientific Investigation). The mean scale scores for the sub-content areas range from 502 on SA 5 (Earth Science) to 517 on SA 2 (Results and Data Analysis). The median scale scores vary between 507 and 509 for the content standards, and between 507 and 510 for the sub-content areas, and all are close to the median for the total test scale score, 508.

The mean percents of the maximum obtainable score for the content standards range from 57.1 on CS 4 (Earth and Space Science) to 68.8 on CS 1 (Scientific Investigation). The mean percent of the obtainable score for the total test is 61.4. The mean percents of the maximum obtainable score for the sub-content areas range from 51.4 to 69.1. The observed ranges indicate that the average item difficulty varies somewhat across the content standards and across the sub-content areas.

Ninth Grade

Reading

The mean scale score for the total population of students taking the 2002 ninth-grade Reading assessment is 664 with a standard deviation of 61.0. The mean scale score for female students is 673 with a standard deviation of 56.4, and the mean scale score for male students is 655 with a standard deviation of 63.8.

The scale score frequency distribution for the total population is shown in Appendix 21. Figure 21 graphically represents the frequency distributions for the total population and for the groups of male and female students separately. The figure shows that the scale score distributions for the total population and for each gender are slightly negatively skewed.

The mean scale scores for the content standards range from 663 on CS 4 (Thinking Skills) to 671 on CS 5 (Use of Literary Information). The mean scale scores for the sub-content areas range from 664 on SA 3 (Poetry) to 669 on SA 1 (Fiction). The median scale scores vary between 670 and 671 for the content standards, and between 671 and 672 for the sub-content areas, and all are close to the median for the total test scale score, 671.

The mean percents of the maximum obtainable score for the content standards range from 55.7 on CS 4 (Thinking Skills) to 68.8 on CS 5 (Use of Literary Information). The mean percent of the maximum obtainable score for the total test is 65.2. The mean percents of the maximum obtainable score for the sub-content areas range from 55.2 to 70.9. The observed ranges indicate that the average item difficulty varies somewhat across the content standards and across the sub-content areas.

Writing

The mean scale score for the total population of students taking the 2002 ninth-grade Writing assessment is 563 with a standard deviation of 80.7. The mean scale score for female students

is 579 with a standard deviation of 76.8, and the mean scale score for male students is 548 with a standard deviation of 81.3.

The scale score frequency distribution for the total population is shown in Appendix 22. Figure 22 graphically represents the frequency distributions for the total population and for the groups of male and female students separately. The figure indicates that the scale score distributions are approximately normal for the total population and for each gender.

The mean scale scores for CS 2 (Write for a Variety of Purposes) and CS 3 (Write Using Conventions) are 563 and 581 with standard deviations of 92.0 and 121.7, respectively. The mean scale scores for sub-content areas range from 563 on SA 5 (Paragraph Writing) to 581 on SA 6 (Extended Writing). The median scale scores vary between 565 and 568 for the content standards, and between 564 and 637 for the sub-content areas, and most are close to the median for the total test scale score, 566. The median scale score for SA 6 (Extended Writing), 637, was higher than the median for the total test score. It should be noted that the score for this sub-content area is computed based on the four scores a student gets for his/her response to the extended writing prompt. Consequently, the scale score variable for this sub-content area is rather discrete.

The mean percents of the maximum obtainable score for CS 2 (Write for a Variety of Purposes) and CS 3 (Write Using Conventions) are 63.5 and 70.5, respectively. The mean percent of the maximum obtainable score for the total test is 66.3. The mean percents of the maximum obtainable score for the sub-content areas range from 59.7 to 72.6.

Mathematics

The mean scale score for the total population of students taking the 2002 ninth-grade Mathematics assessment is 565 with a standard deviation of 72.9. The mean scale score for female students is 564 with a standard deviation of 68.3, and the mean scale score for male students is 566 with a standard deviation of 77.1.

The scale score frequency distribution for the total population is shown in Appendix 23. Figure 23 graphically represents the frequency distributions for the total population and for the groups of male and female students separately. The scale score distributions are slightly negatively skewed for the total population and for each gender.

The mean scale scores for the content standards range from 559 on CS 4/5 (Geometry and Measurement) to 564 on CS 1/6 (Number Sense and Computational Techniques) and CS 2 (Algebra, Patterns, and Functions). The mean scale scores for the sub-content areas are 560 on SA 1 (Multiple Representations of Linear/Nonlinear Functions) and 561 on SA 2 (Proportional Thinking). The median scale scores vary between 569 and 575 for the content standards, and between 570 and 573 for the sub-content areas, and all are close to the median for the total test scale score, 573.

The mean percents of the maximum obtainable score for the content standards range from 36.3 on CS 3 (Statistics and Probability) to 48.2 on CS 2 (Algebra, Patterns and Functions).

The mean percent of the maximum obtainable score for the total test is 42.9. The mean percents of the maximum obtainable score for the sub-content areas range from 38.7 to 43.0.

Tenth Grade

Reading

The mean scale score for the total population of students taking the 2002 tenth-grade Reading assessment is 678 with a standard deviation of 60.0. The mean scale score for female students is 688 with a standard deviation of 53.0, and the mean scale score for male students is 668 with a standard deviation of 64.7.

The scale score frequency distribution for the total population is shown in Appendix 24. Figure 24 graphically represents the frequency distributions for total population and for the groups of male and female students separately. The figure shows that the scale score distributions for the total population and for each gender are negatively skewed.

The mean scale scores for the content standards range from 678 on CS 1 (Reading Comprehension) and CS 6 (Literature) to 680 on CS 4 (Thinking Skills). The mean scale scores for the sub-content areas range from 674 on SA 4 (Poetry) to 682 on SA 3 (Vocabulary). The median scale scores vary between 686 and 687 for the content standards, and between 686 and 688 for the sub-content areas, and all are close to the median for the total test scale score, 686.