

1. Overview

Questar Assessment, Inc., has committed to supporting the Arkansas Department of Education by facilitating a study regarding the appropriateness and effectiveness of the accommodations provided to students with limited English proficiency and students with disabilities to ensure their meaningful participation in the ACTAAP (Arkansas Comprehensive Testing, Assessment, and Accountability Program). The analysis will include testing data and will compare the performance of special education and limited English students who use accommodations to students who do not use accommodations when taking the ACTAAP assessments.

2. District Feedback Regarding Accommodations

In preparing for the accommodations study, Questar collected district feedback related to accommodations. The most common concern is the number of staff needed to provide reading or other accommodations that require a one-to-one teacher/student ratio. Districts say that one of the biggest problems is administering so many different forms for accommodated tests. This could be alleviated in part if proctors did not need to be certified. The requirement for certification is, among other things, a way to standardize testing practices across the state and to help ensure legal defensibility.

Districts have also said that students who receive the Extended Time accommodation are running out of time and not finishing the sub-tests, this results in a score of zero. Extended time testing is also difficult because the student needs to be separated from the rest of his or her grade cohort until the testing sessions for that subject are complete. As a general rule, students may take 50% longer than the “regular” time, which may result in students testing beyond the close of the regular school day and into evening.

If a student misses a sub-test, he or she needs to be excluded from the rest of the testing cohort until the sub-test is made it up. Again, this is difficult for schools because the student needs to be separated from the rest of his or her grade cohort, which requires additional staffing.

3.1. Overview

Under the requirements of the No Child Left Behind Act (NCLB) (2001), states are required to evaluate the use and appropriateness of accommodations within the Special Education (SE) and English as a Second Language (ESL) student populations. The various accommodations used in Arkansas have undergone scrutiny by teachers, administrators, and other stakeholders, as well as the Technical Advisory Committee. The accommodations are in keeping with the best practices of Universal Design and the Standards for Educational and Psychological Testing (AERA, APA, & NCME, 1999).

3.2. Methodology

As part of the assessment system, student demographic information is collected. These demographics are used for reporting disaggregated data under NCLB as well as for research into group differences. One such set of analyses investigates the usage of accommodations with both SE and ESL student populations. The basic unit within the analyses is the student-level data in scale score and/or proficiency levels. It is important to note that these analyses are based on non-random and non-equivalent groups as found in the actual testing data. Students are grouped based on Individualized Education Plans (IEPs) and ESL teacher recommendations. Hence, caution must be used when interpreting these results. In addition, it is not practical nor fair to assign students to testing conditions in which they may be placed at a disadvantage for showing what they have learned and can do on the NCLB tests.

For each group, the student data was separated into two conditions: tested with accommodations, and tested without accommodations. This was performed by grade and content area for the Benchmark Examinations and by content area for the End-of-Course Examinations. **The performance of students was then analyzed using the 2011 test data.** The goal of the analyses was simply to evaluate the effectiveness and appropriateness of accommodations for each of these two groups.

Tables 1 through 6 show the scale score mean, standard deviation, and the scale score total test correlations for the identified group for ESI students and LEP students on the Benchmark Examinations. For example, Table 1 shows that third grade students who are indicated as ESI and receive accommodations have a mean scale score of 495 with a standard deviation of 96 scale score points and a total test correlation of 0.86. In comparison, third grade students who are not indicated as ESI but still receive accommodations have a mean scale score of 524 with a standard deviation of 97 scale score points and a total test correlation of 0.86. Tables 7 and 8 provide similar information for the Spring EOC examinations.

The tables show that the means for the various groups are quite varied as are the n-counts. In addition, the standard deviations are quite large. The analysis presents a mix of results and suggests that there is no clear pattern indicating that accommodations are being used inappropriately or provide an untold advantage to certain groups of students.

Table 1. Descriptive Statistics by Grade & Subject for ESI Students for Benchmark Math

Grade	Subject	ESI Status	Accommodations Status	Count	SS-Mean	SS Std.Dev	Alpha
3	Math	N	N	31,942	612	92	0.84
3	Math	N	Y	400	524	97	0.86
3	Math	Y	N	1,690	561	111	0.88
3	Math	Y	Y	2,055	495	96	0.86
4	Math	N	N	32,112	652	89	0.84
4	Math	N	Y	396	561	94	0.86
4	Math	Y	N	1,461	588	112	0.89
4	Math	Y	Y	2,295	528	89	0.85
5	Math	N	N	31,986	683	86	0.82
5	Math	N	Y	311	587	83	0.82
5	Math	Y	N	1,148	609	100	0.87
5	Math	Y	Y	2,499	569	81	0.83
6	Math	N	N	31,957	727	97	0.85
6	Math	N	Y	310	609	98	0.87
6	Math	Y	N	1,008	620	115	0.89
6	Math	Y	Y	2,504	581	90	0.85
7	Math	N	N	31,929	744	91	0.85
7	Math	N	Y	236	641	88	0.85
7	Math	Y	N	943	631	90	0.86
7	Math	Y	Y	2,372	624	83	0.84
8	Math	N	N	31,746	743	87	0.85
8	Math	N	Y	234	651	81	0.83
8	Math	Y	N	1,070	623	79	0.83

Table 2. Descriptive Statistics by Grade & Subject for ESI Students for Benchmark Literacy

Grade	Subject	ESI Status	Accommodations Status	Count	SS-Mean	SS Std.Dev	Alpha
3	Literacy	N	N	31,995	623	162	0.86
3	Literacy	N	Y	400	411	177	0.89
3	Literacy	Y	N	1,690	497	208	0.91
3	Literacy	Y	Y	2,057	339	162	0.88
4	Literacy	N	N	32,111	720	144	0.86
4	Literacy	N	Y	396	527	164	0.89
4	Literacy	Y	N	1,461	575	209	0.92
4	Literacy	Y	Y	2,295	445	161	0.89
5	Literacy	N	N	31,986	744	146	0.86
5	Literacy	N	Y	311	530	159	0.87
5	Literacy	Y	N	1,148	574	196	0.91
5	Literacy	Y	Y	2,499	475	149	0.87
6	Literacy	N	N	31,957	751	152	0.87
6	Literacy	N	Y	310	520	188	0.90
6	Literacy	Y	N	1,008	544	199	0.90
6	Literacy	Y	Y	2,504	457	163	0.87
7	Literacy	N	N	31,929	758	145	0.86
7	Literacy	N	Y	236	538	163	0.88
7	Literacy	Y	N	943	524	175	0.89
7	Literacy	Y	Y	2,372	493	158	0.88
8	Literacy	N	N	31,746	822	131	0.85
8	Literacy	N	Y	234	632	176	0.89
8	Literacy	Y	N	1,070	575	171	0.89
8	Literacy	Y	Y	2,199	563	157	0.88

Table 3. Descriptive Statistics by Grade & Subject for ESI Students for Benchmark Science

Grade	Subject	ESI Status	Accommodations Status	Count	SS-Mean	SS Std.Dev	Alpha
5	Science	N	N	32,084	207	37	0.81
5	Science	N	Y	311	174	35	0.81
5	Science	Y	N	1,167	177	47	0.87
5	Science	Y	Y	2,500	165	35	0.82
7	Science	N	N	32,122	188	47	0.84
7	Science	N	Y	236	143	49	0.86
7	Science	Y	N	977	132	51	0.86
7	Science	Y	Y	2,375	134	42	0.82

Table 4. Descriptive Statistics by Grade & Subject for LEP Students for Benchmark Math

Grade	Subject	LEP Status	Accommodations Status	Count	SS-Mean	SS Std.Dev	Alpha
3	Math	N	N	30,877	612	94	0.84
3	Math	N	Y	2,245	500	97	0.86
3	Math	Y	N	2,755	583	90	0.84
3	Math	Y	Y	210	497	89	0.84
4	Math	N	N	31,009	651	92	0.84
4	Math	N	Y	2,463	533	91	0.86
4	Math	Y	N	2,564	624	83	0.83
4	Math	Y	Y	228	531	88	0.85
5	Math	N	N	30,699	683	88	0.83
5	Math	N	Y	2,590	572	82	0.83
5	Math	Y	N	2,435	644	77	0.81
5	Math	Y	Y	220	568	75	0.81
6	Math	N	N	30,907	727	100	0.86
6	Math	N	Y	2,618	584	92	0.86
6	Math	Y	N	2,058	680	87	0.83
6	Math	Y	Y	196	592	87	0.84
7	Math	N	N	31,007	743	93	0.86
7	Math	N	Y	2,449	624	83	0.84
7	Math	Y	N	1,865	708	77	0.82
7	Math	Y	Y	159	649	91	0.85
8	Math	N	N	31,133	741	89	0.85
8	Math	N	Y	2,326	624	76	0.82
8	Math	Y	N	1,683	689	80	0.82
8	Math	Y	Y	107	625	64	0.78

Table 5. Descriptive Statistics by Grade & Subject for LEP Students for Benchmark Literacy

Grade	Subject	LEP Status	Accommodations Status	Count	SS-Mean	SS Std.Dev	Alpha
3	Literacy	N	N	30,879	623	165	0.87
3	Literacy	N	Y	2,246	349	168	0.89
3	Literacy	Y	N	2,806	549	171	0.88
3	Literacy	Y	Y	211	368	154	0.86
4	Literacy	N	N	31,008	718	150	0.87
4	Literacy	N	Y	2,463	457	164	0.89
4	Literacy	Y	N	2,564	668	147	0.87
4	Literacy	Y	Y	228	457	167	0.89
5	Literacy	N	N	30,699	744	151	0.86
5	Literacy	N	Y	2,590	480	152	0.87
5	Literacy	Y	N	2,435	667	141	0.85
5	Literacy	Y	Y	220	493	139	0.84
6	Literacy	N	N	30,907	750	157	0.87
6	Literacy	N	Y	2,618	463	168	0.87
6	Literacy	Y	N	2,058	669	150	0.86
6	Literacy	Y	Y	196	484	161	0.87
7	Literacy	N	N	31,007	755	151	0.87
7	Literacy	N	Y	2,449	495	160	0.88
7	Literacy	Y	N	1,865	692	143	0.86
7	Literacy	Y	Y	159	523	145	0.86
8	Literacy	N	N	31,133	818	138	0.87
8	Literacy	N	Y	2,326	570	161	0.88
8	Literacy	Y	N	1,683	731	146	0.86

Table 6. Descriptive Statistics by Grade & Subject for LEP Students for Benchmark Science

Grade	Subject	LEP Status	Accommodations Status	Count	SS-Mean	SS Std.Dev	Alpha
5	Science	N	N	30,812	207	38	0.82
5	Science	N	Y	2,591	167	35	0.82
5	Science	Y	N	2,439	189	33	0.79
5	Science	Y	Y	220	160	32	0.79
7	Science	N	N	31,229	188	48	0.85
7	Science	N	Y	2,452	135	43	0.83
7	Science	Y	N	1,870	160	41	0.81
7	Science	Y	Y	159	132	39	0.81

Table 7. Descriptive Statistics by Subject for ESI Students for Spring EOC Examinations

Subject	ESI Status	Accommodations Status	Count	SS-Mean	SS Std.Dev	Alpha
Algebra	N	N	31,465	234	46	0.90
Algebra	N	Y	160	187	47	0.91
Algebra	Y	N	675	184	46	0.89
Algebra	Y	Y	878	188	44	0.89
Geometry	N	N	29,714	225	42	0.90
Geometry	N	Y	124	186	38	0.90
Geometry	Y	N	563	180	42	0.91
Geometry	Y	Y	812	183	39	0.90
Biology	N	N	28,356	192	47	0.89
Biology	N	Y	142	146	42	0.88
Biology	Y	N	852	141	41	0.87
Biology	Y	Y	1,465	138	37	0.86
Literacy	N	N	27,843	209	19	0.87
Literacy	N	Y	200	178	22	0.90
Literacy	Y	N	957	176	20	0.89
Literacy	Y	Y	1,643	175	18	0.88

Table 8. Descriptive Statistics by Subject for LEP Students for Spring EOC Examinations

Subject	LEP Status	Accommodations Status	Count	SS-Mean	SS Std.Dev	Alpha
Algebra	N	N	30,452	234	46	0.90
Algebra	N	Y	977	188	45	0.90
Algebra	Y	N	1,688	209	43	0.89
Algebra	Y	Y	61	184	34	0.84
Geometry	N	N	28,971	226	43	0.90
Geometry	N	Y	865	183	39	0.90
Geometry	Y	N	1,306	201	41	0.90
Geometry	Y	Y	71	183	32	0.86
Biology	N	N	27,996	192	48	0.89
Biology	N	Y	1,518	140	38	0.86
Biology	Y	N	1,212	154	41	0.86
Biology	Y	Y	89	130	30	0.78
Literacy	N	N	27,664	209	20	0.87
Literacy	N	Y	1,752	175	18	0.88
Literacy	Y	N	1,136	187	19	0.87
Literacy	Y	Y	91	171	16	0.86

Figures 1 through 36 show the proportions of students in each performance level based on whether or not accommodations were received. These figures were created in an attempt to better understand the comparison between achievement for those students classified as either ESI or LEP and receiving accommodations versus students classified in the same way and not receiving accommodations. While it appears that students who take the Benchmark assessments without accommodations are more apt to achieve a higher level of proficiency, the same is not always true for the EOC exams. There could be many reasons for this such as small sample sizes and samples obtained through non-random methods. There is no clear evidence that suggests accommodations are being used in an inappropriate manner. Although there are differences among the various groups, no clear pattern emerges, especially since these results are based on samples of convenience.

Figure 1. Proportions of Students by Performance Level for Grade 3 Math based on ESI

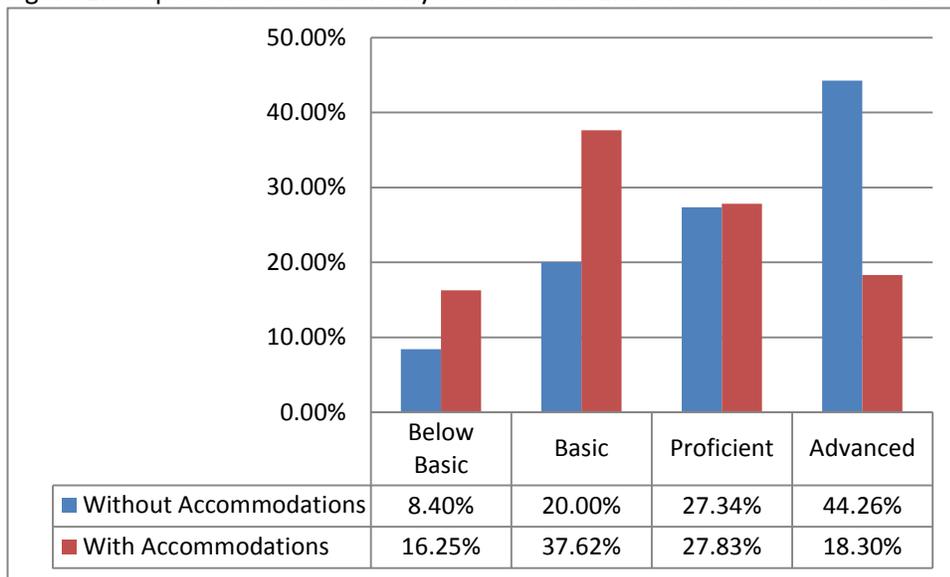


Figure 2. Proportions of Students by Performance Level for Grade 4 Math based on ESI

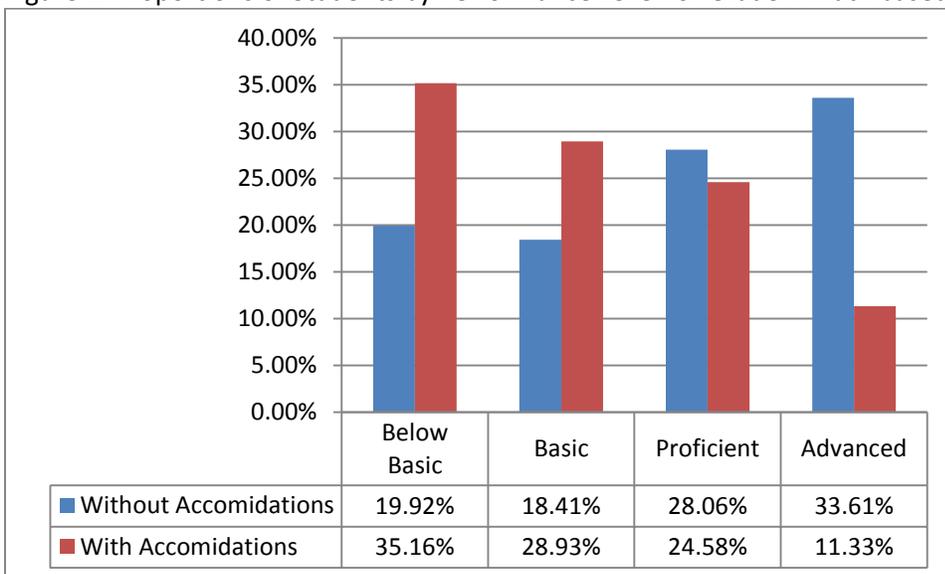


Figure 3. Proportions of Students by Performance Level for Grade 5 Math based on ESI

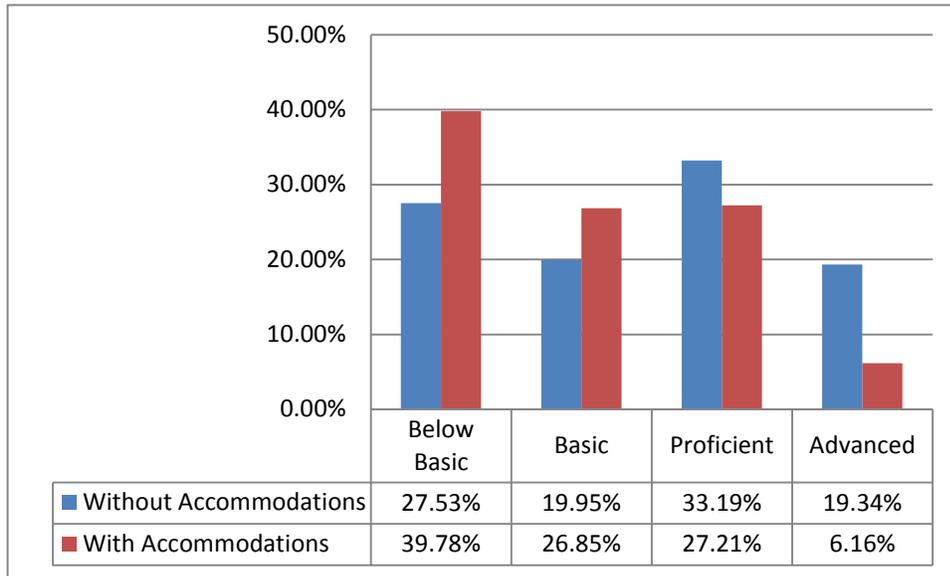


Figure 4. Proportions of Students by Performance Level for Grade 6 Math based on ESI

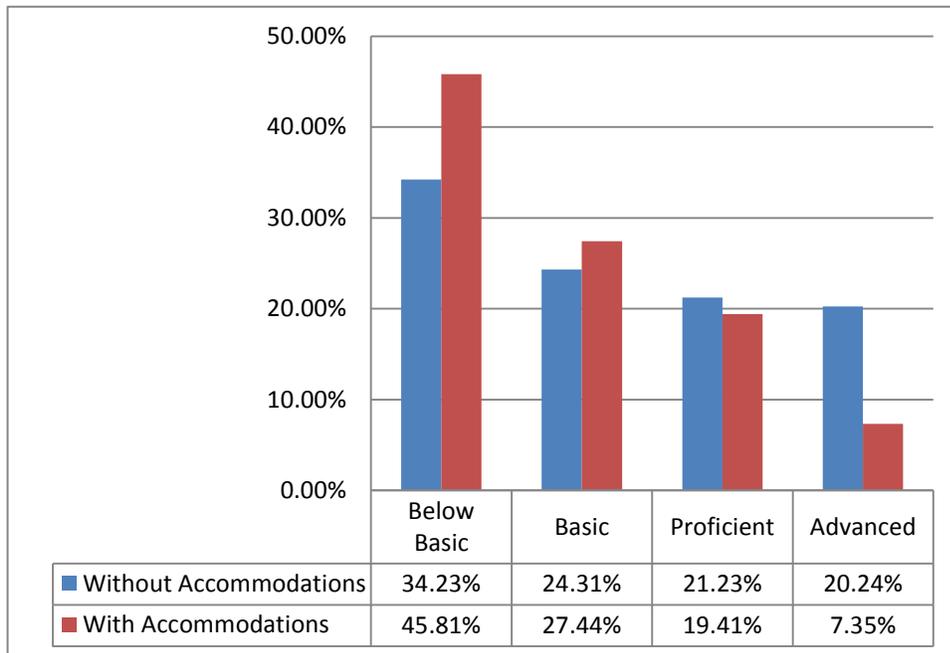


Figure 5. Proportions of Students by Performance Level for Grade 7 Math based on ESI

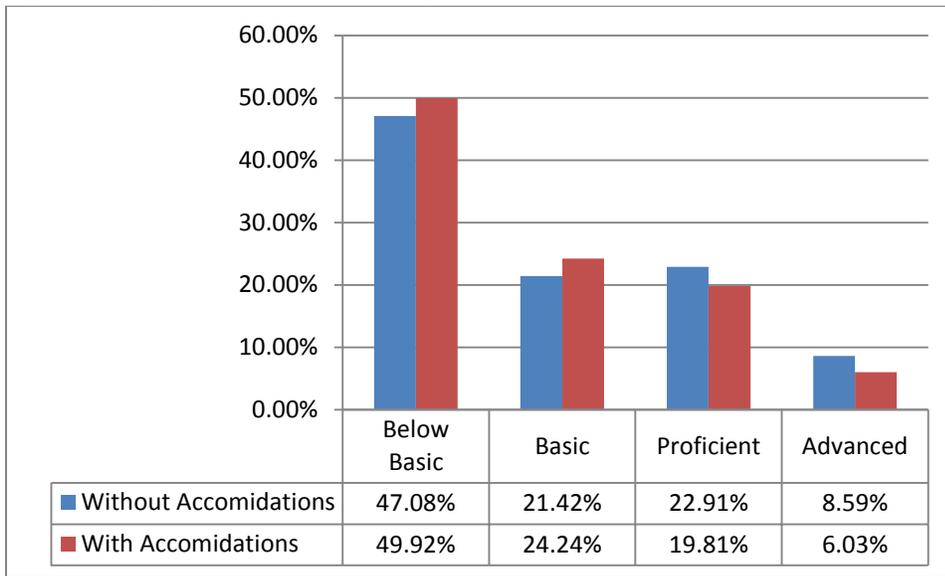


Figure 6. Proportions of Students by Performance Level for Grade 8 Math based on ESI

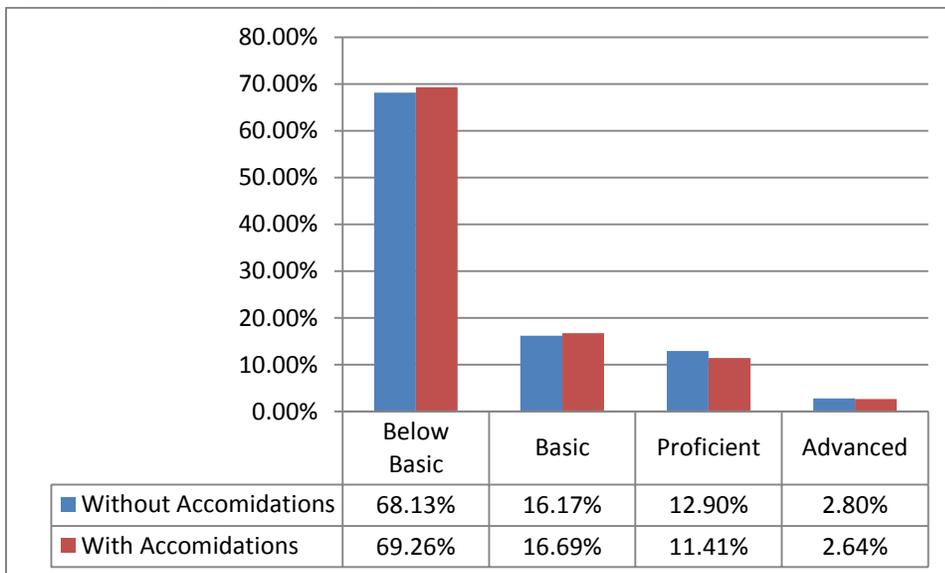


Figure 7. Proportions of Students by Performance Level for Grade 3 Literacy based on ESI

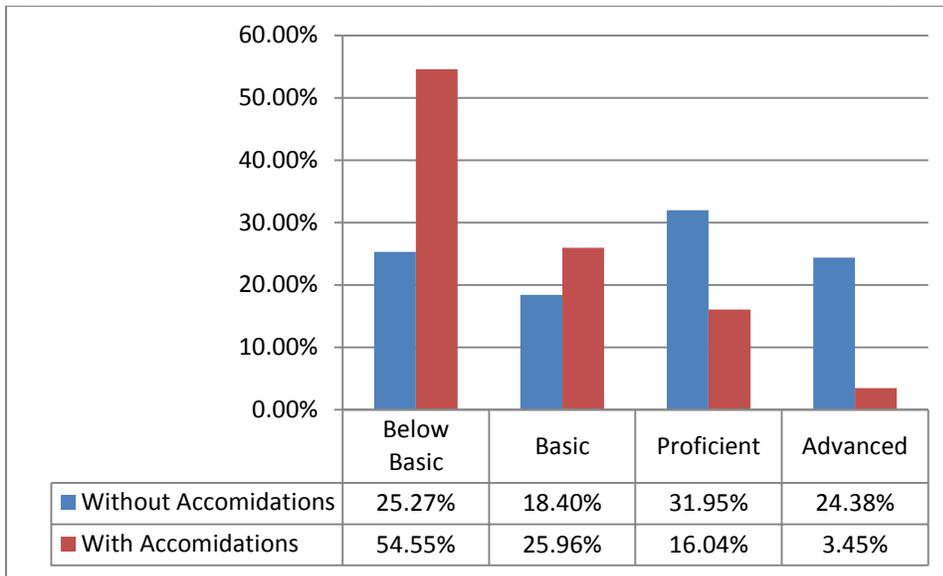


Figure 8. Proportions of Students by Performance Level for Grade 4 Literacy based on ESI

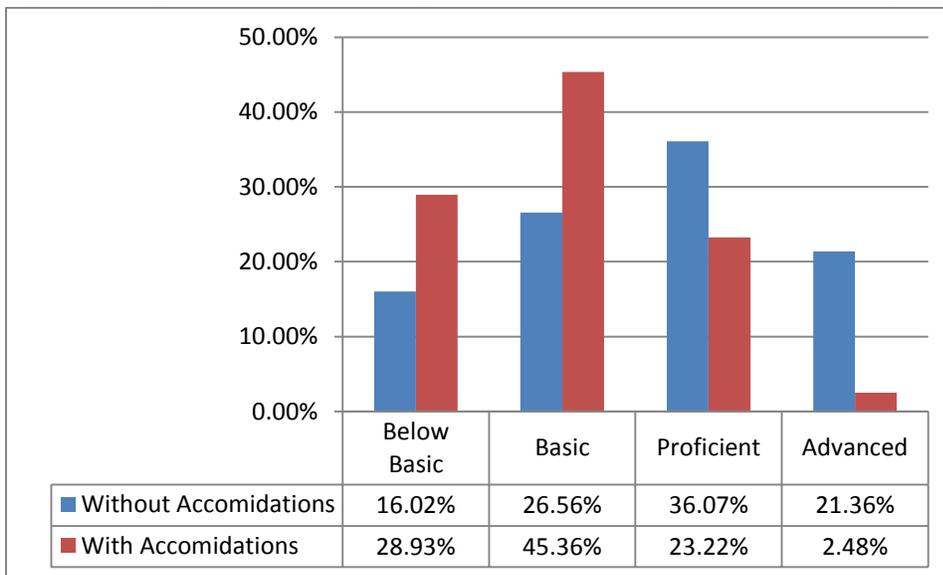


Figure 9. Proportions of Students by Performance Level for Grade 5 Literacy based on ESI

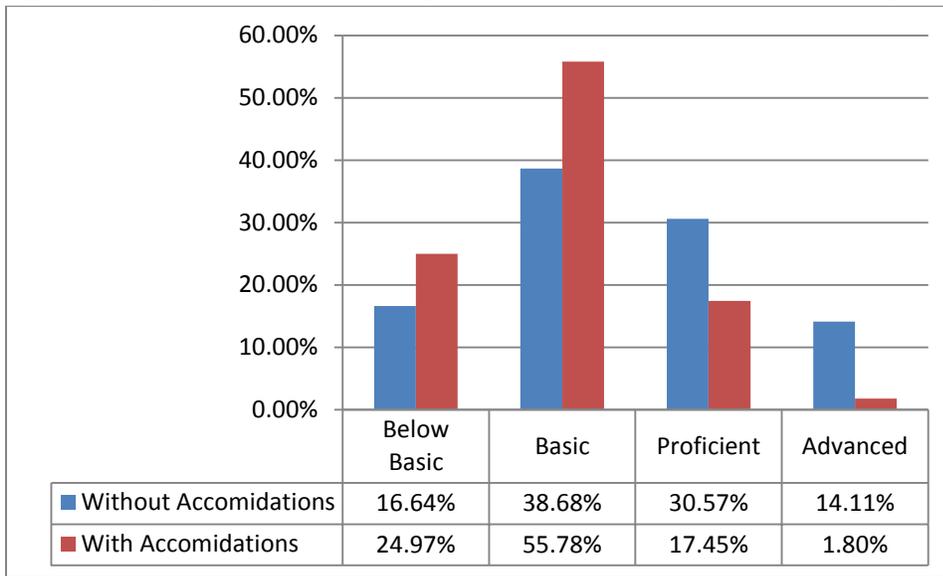


Figure 10. Proportions of Students by Performance Level for Grade 6 Literacy based on ESI

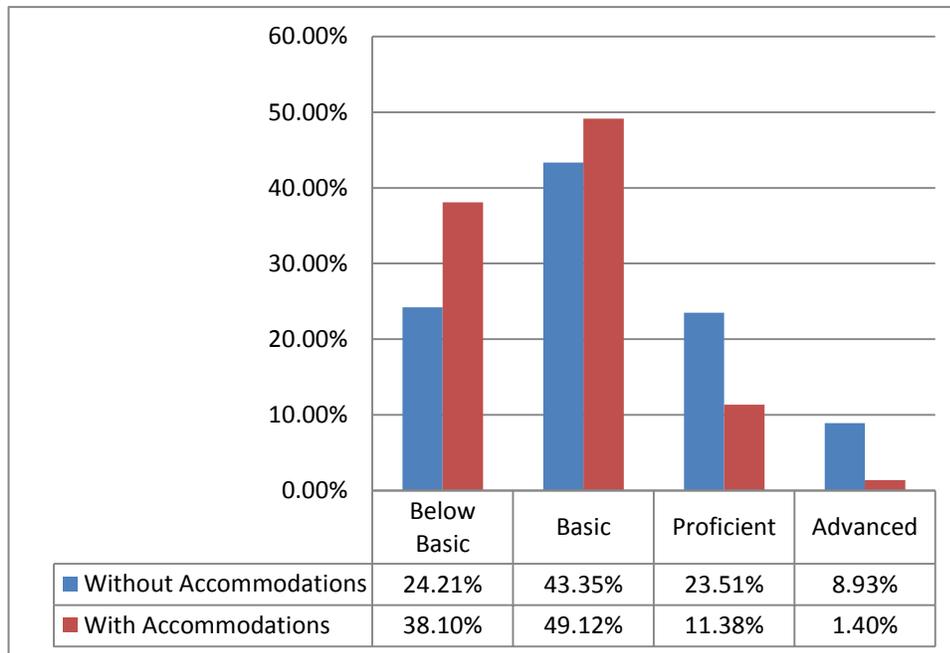


Figure 11. Proportions of Students by Performance Level for Grade 7 Literacy based on ESI

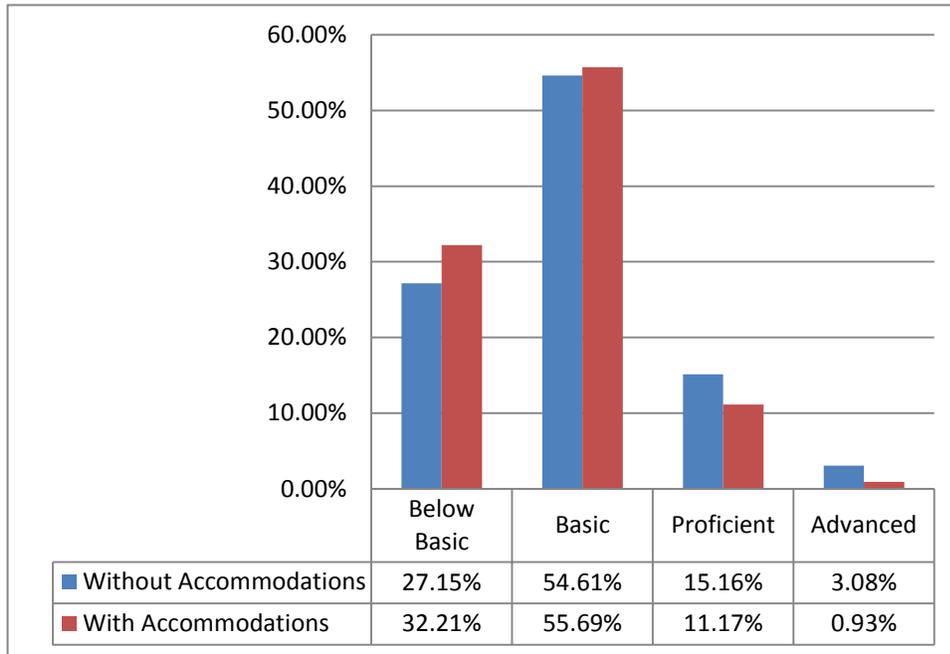


Figure 12. Proportions of Students by Performance Level for Grade 8 Literacy based on ESI

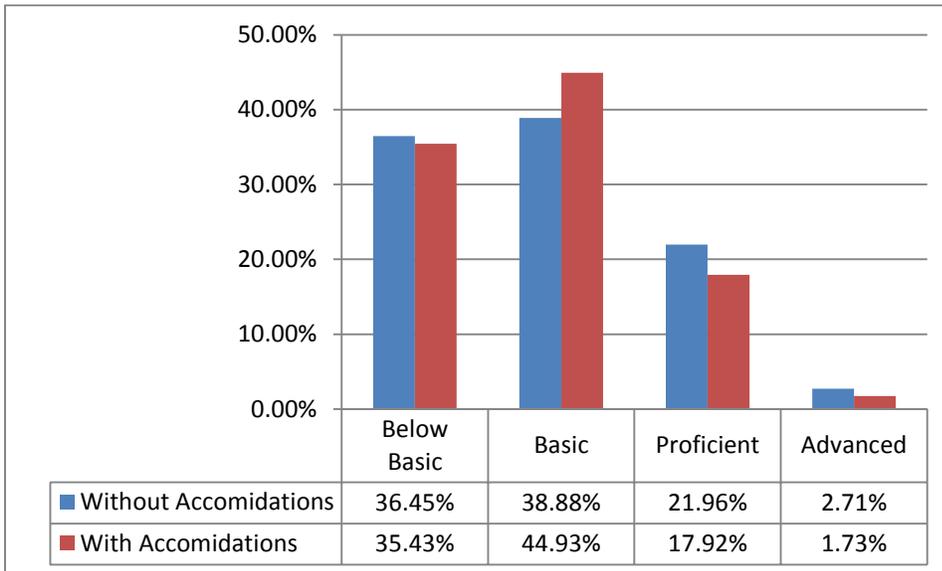


Figure 13. Proportions of Students by Performance Level for Grade 5 Science based on ESI

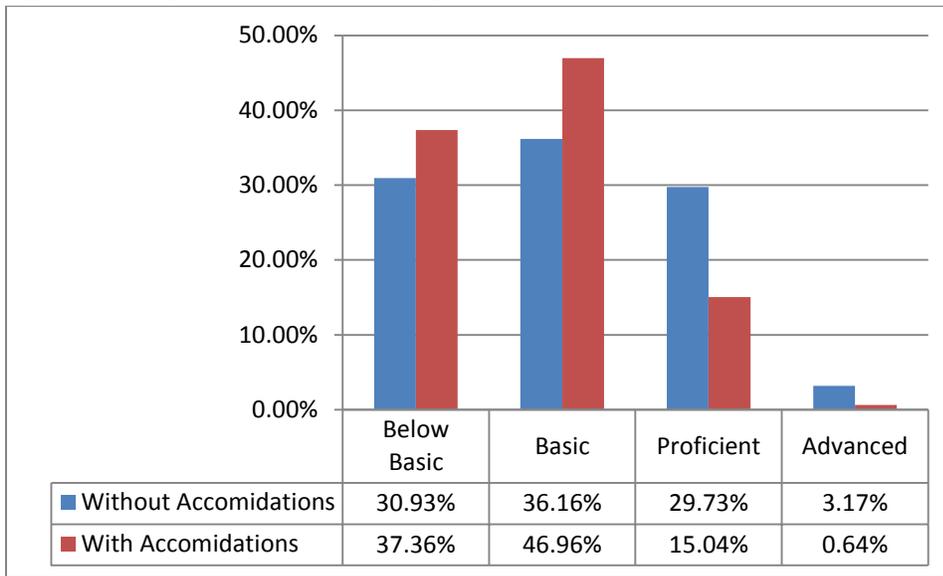


Figure 14. Proportions of Students by Performance Level for Grade 7 Science based on ESI

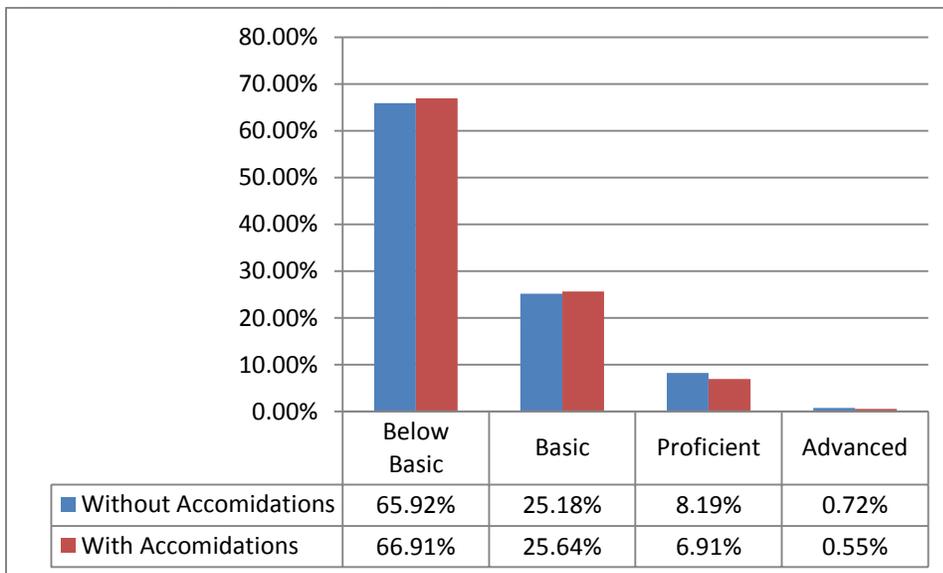


Figure 15. Proportions of Students by Performance Level for Grade 3 Math based on LEP

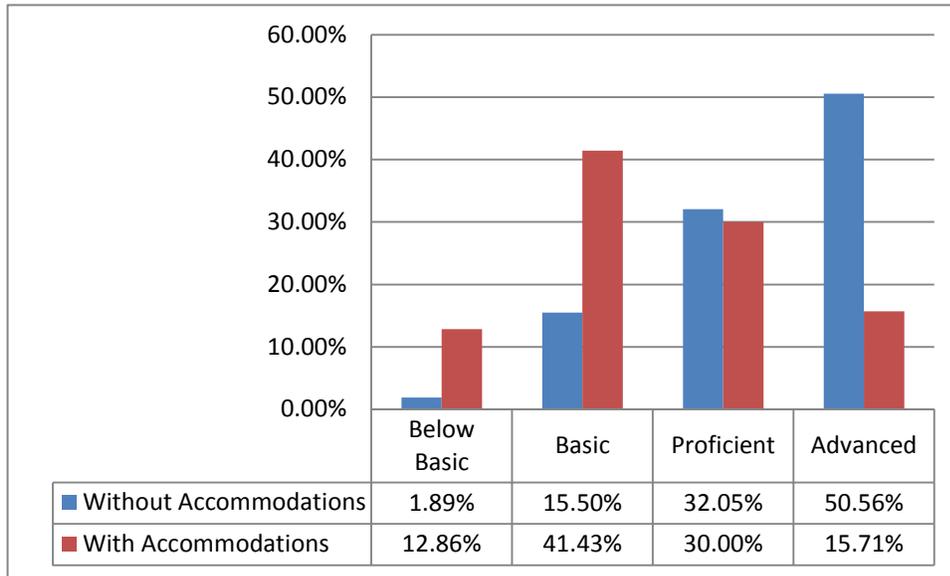


Figure 16. Proportions of Students by Performance Level for Grade 4 Math based on LEP

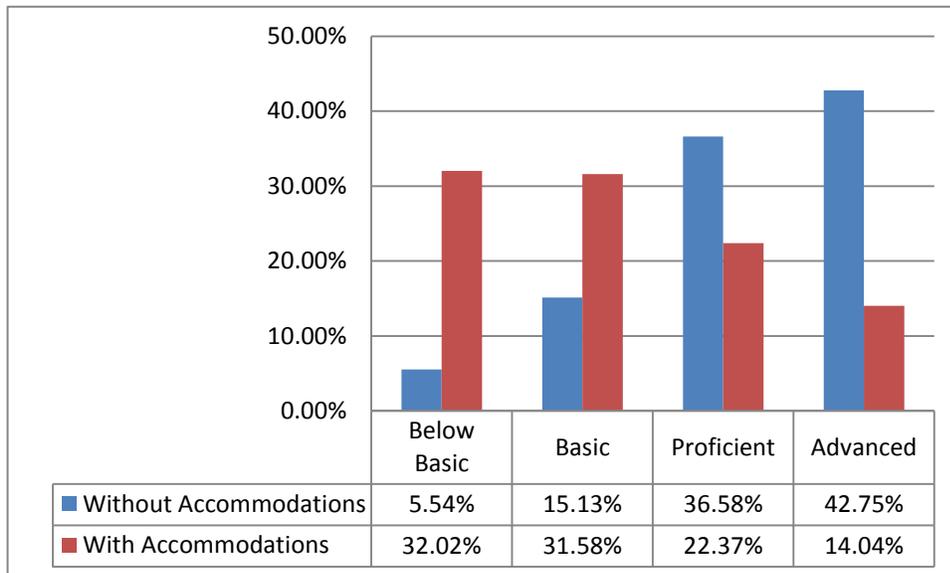


Figure 17. Proportions of Students by Performance Level for Grade 5 Math based on LEP

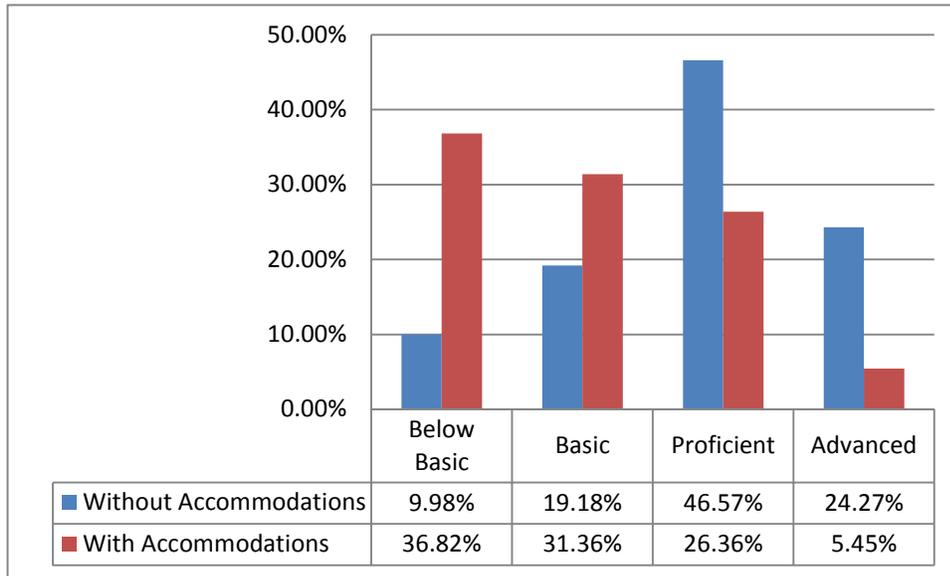


Figure 18. Proportions of Students by Performance Level for Grade 6 Math based on LEP

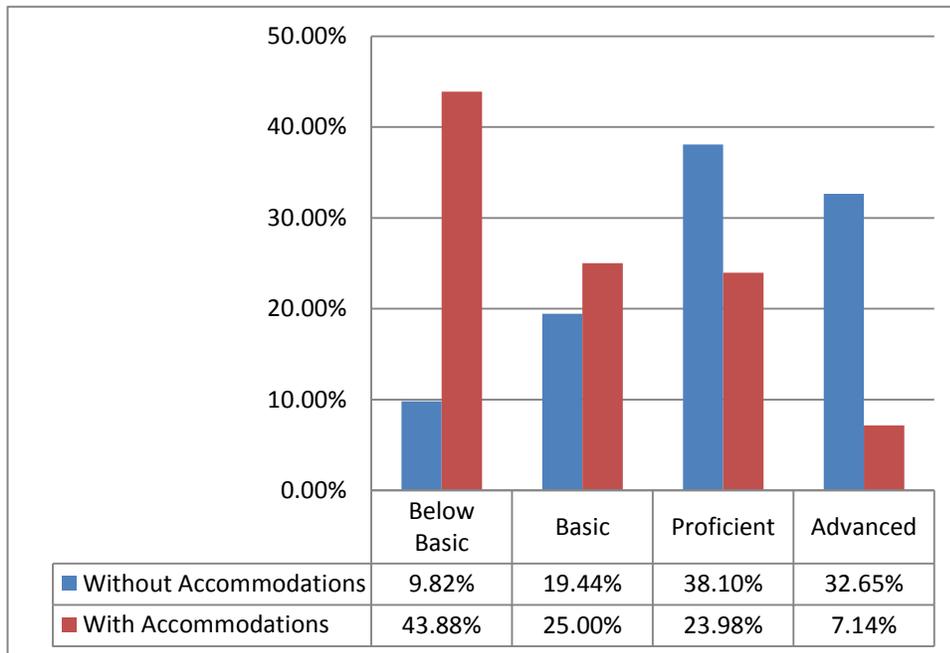


Figure 19. Proportions of Students by Performance Level for Grade 7 Math based on LEP

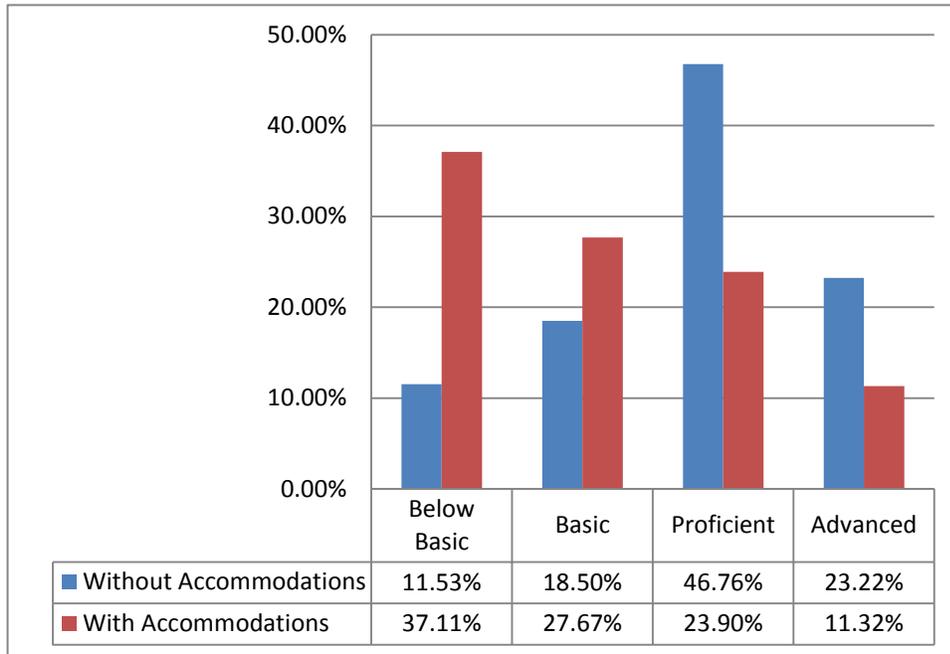


Figure 20. Proportions of Students by Performance Level for Grade 8 Math based on LEP

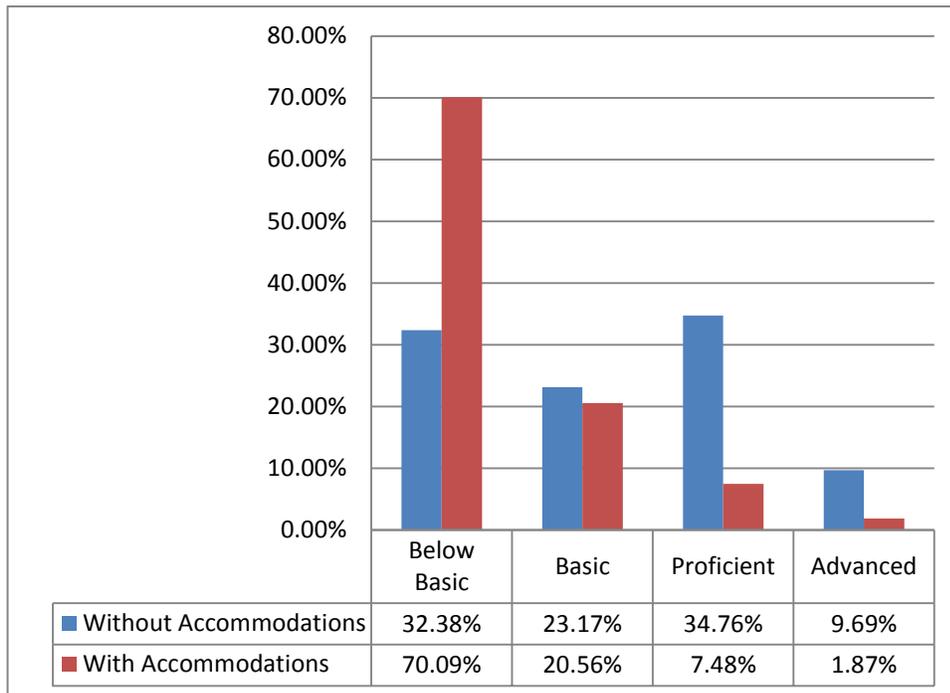


Figure 21. Proportions of Students by Performance Level for Grade 3 Literacy based on LEP

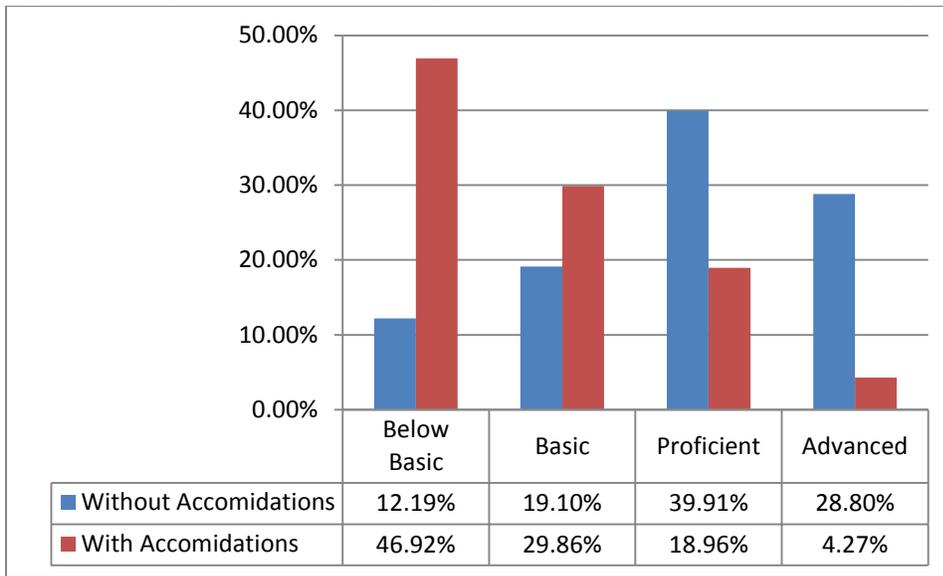


Figure 22. Proportions of Students by Performance Level for Grade 4 Literacy based on LEP

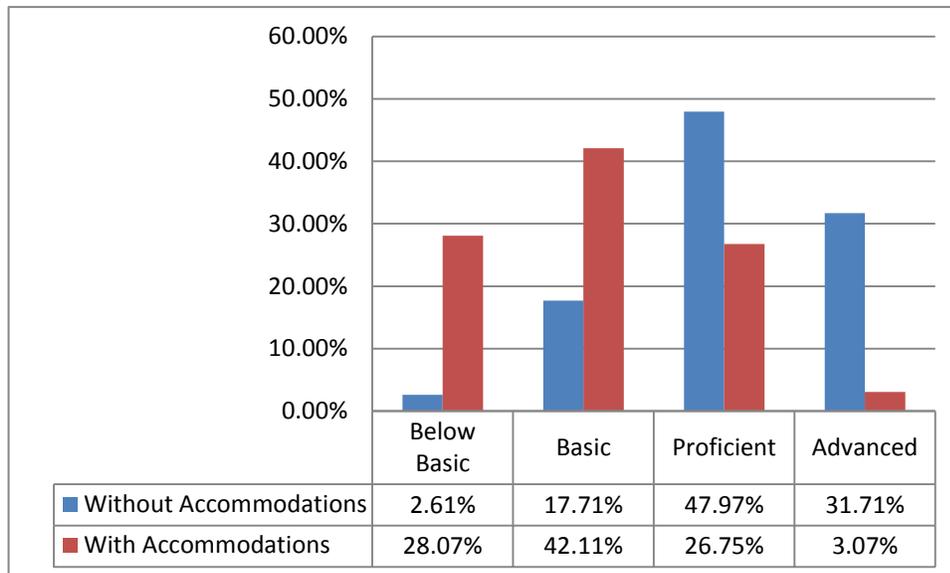


Figure 23. Proportions of Students by Performance Level for Grade 5 Literacy based on LEP

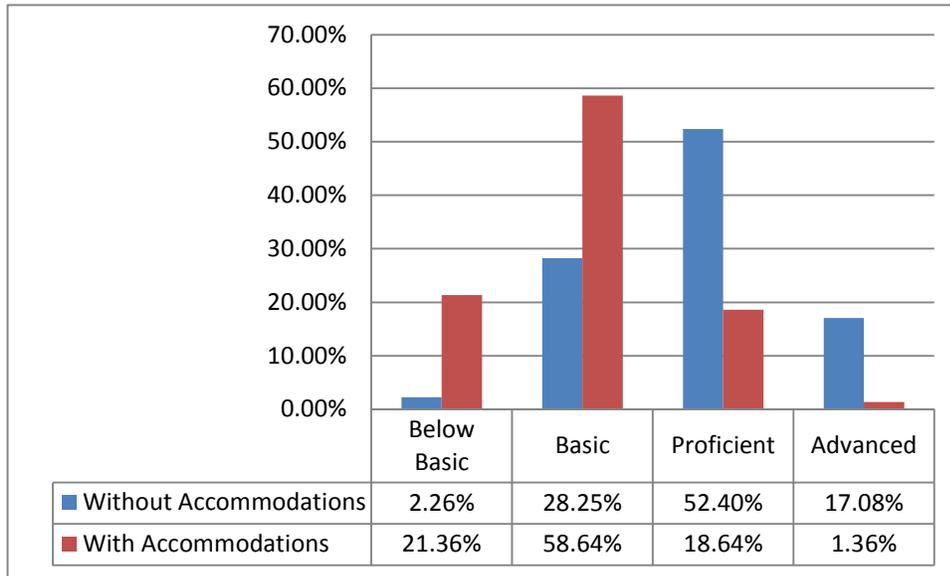


Figure 24. Proportions of Students by Performance Level for Grade 6 Literacy based on LEP

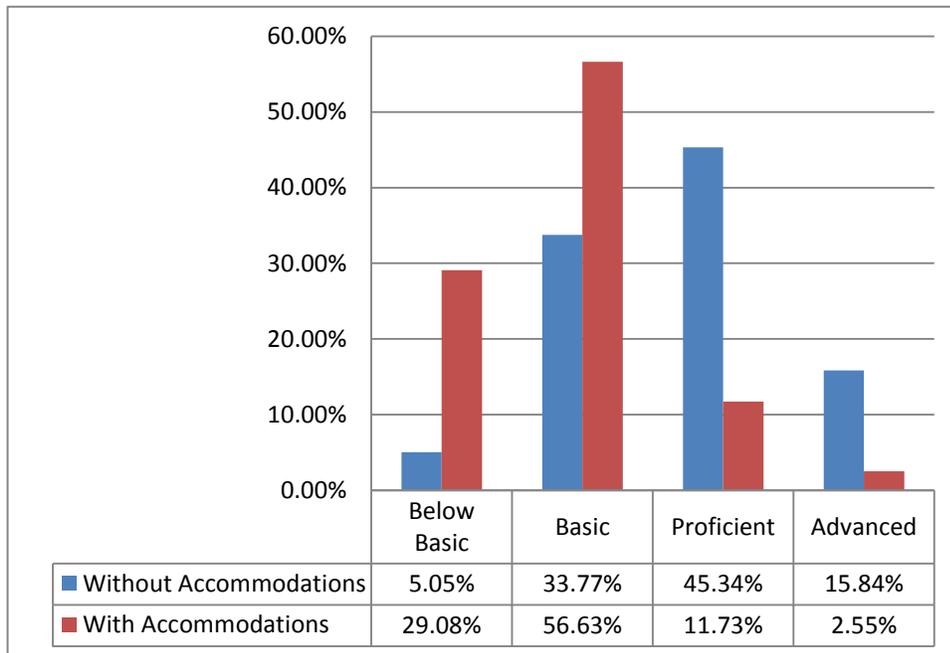


Figure 25. Proportions of Students by Performance Level for Grade 7 Literacy based on LEP

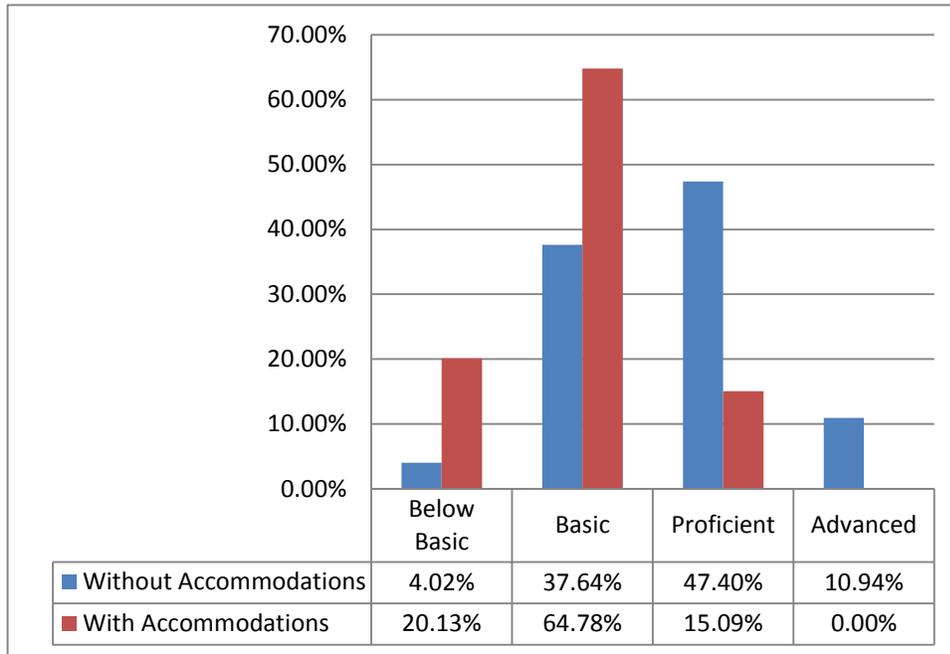


Figure 26. Proportions of Students by Performance Level for Grade 8 Literacy based on LEP

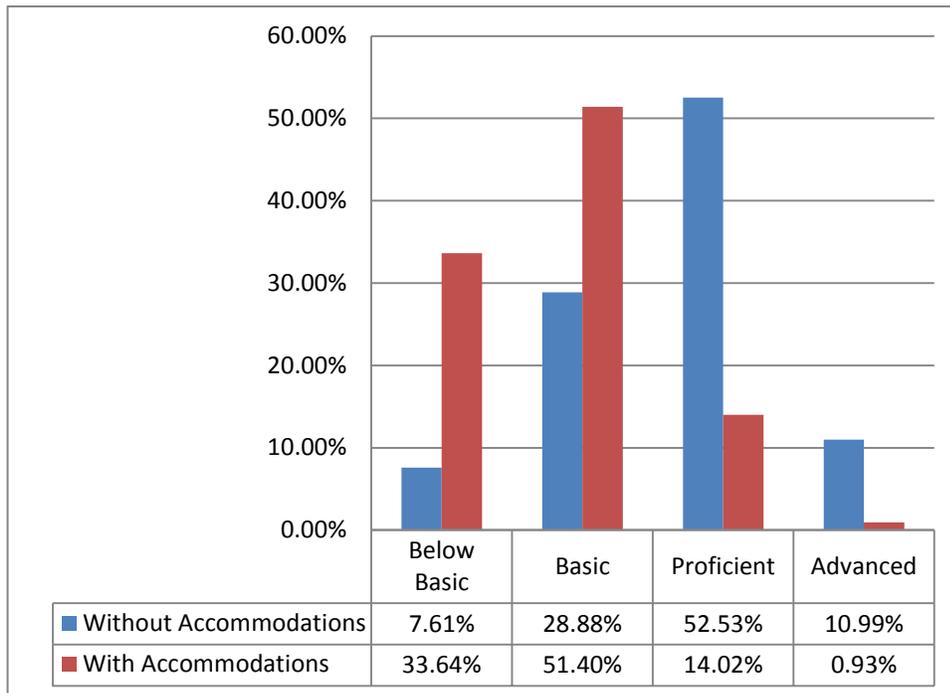


Figure 27. Proportions of Students by Performance Level for Grade 5 Science based on LEP

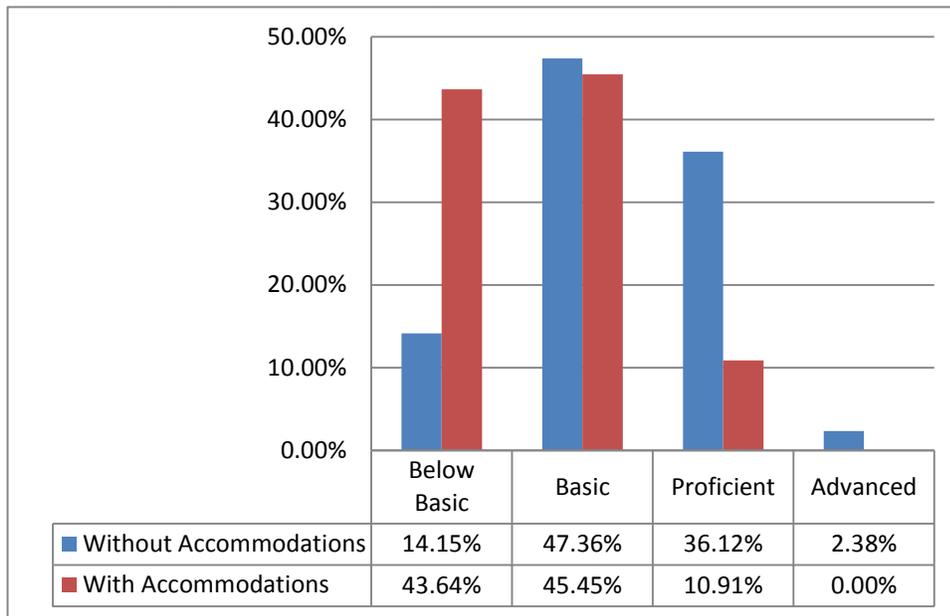


Figure 28. Proportions of Students by Performance Level for Grade 7 Science based on LEP

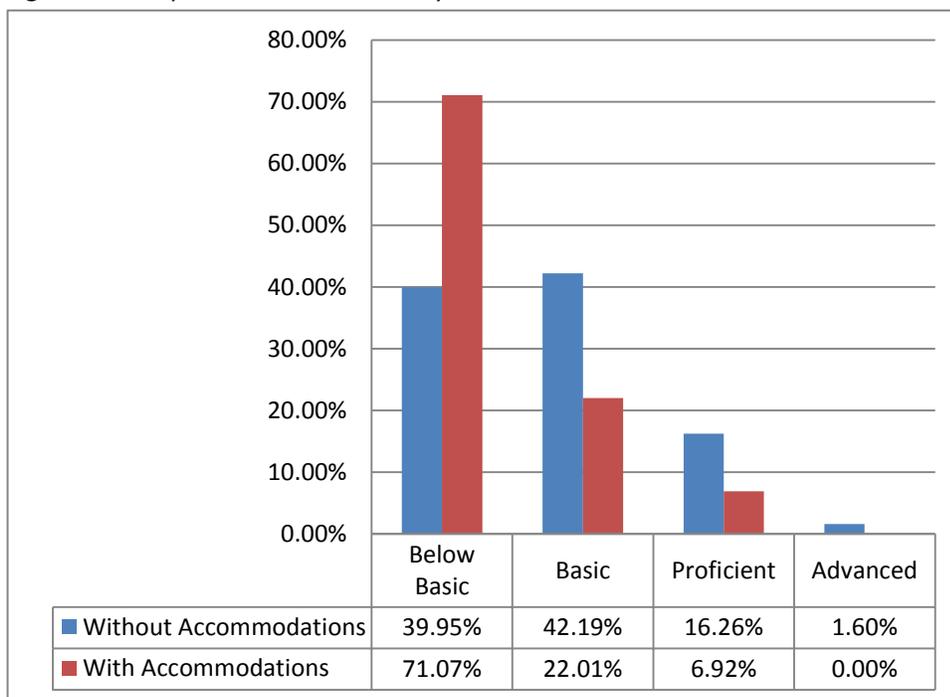


Figure 29. Proportions of Students by Performance Level for Spring EOC Algebra based on ESI

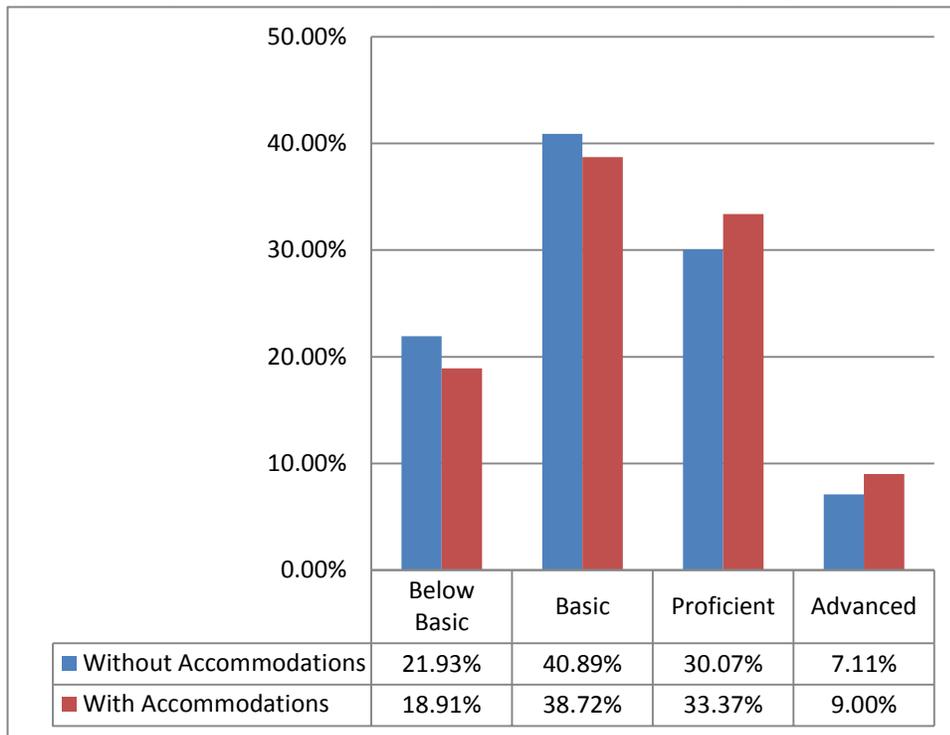


Figure 30. Proportions of Students by Performance Level for Spring EOC Geometry based on ESI

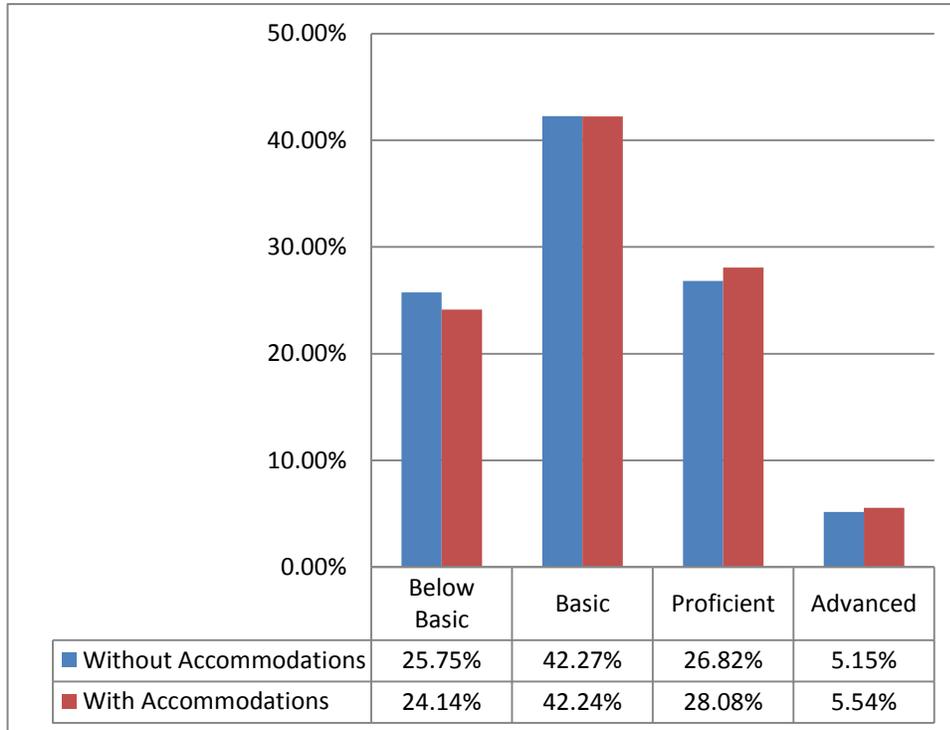


Figure 31. Proportions of Students by Performance Level for Spring EOC Literacy based on ESI

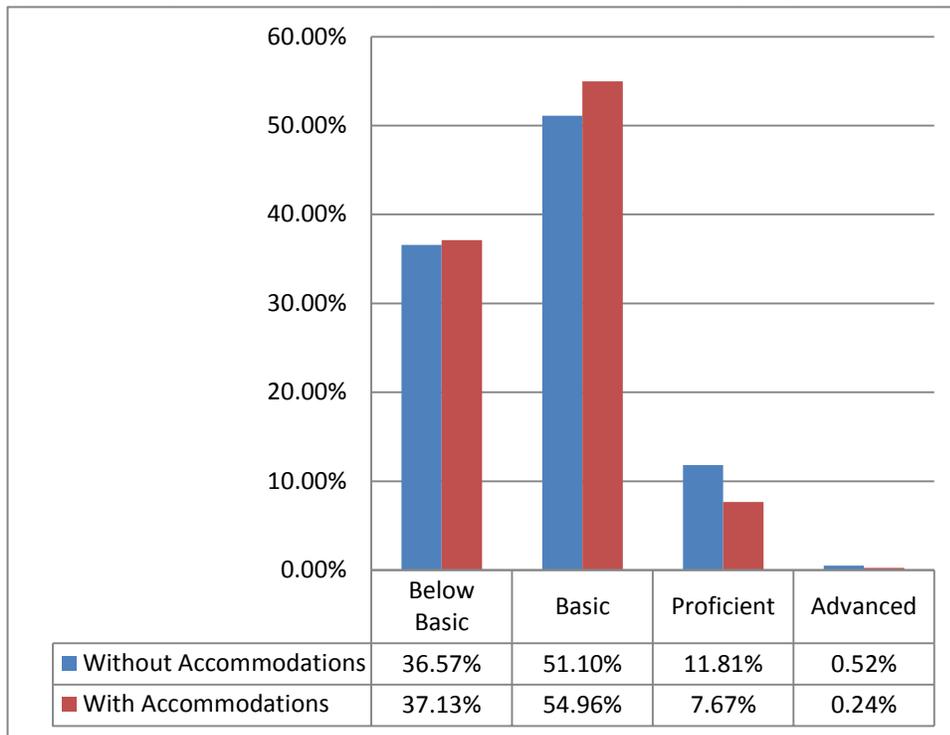


Figure 32. Proportions of Students by Performance Level for Spring EOC Biology based on ESI

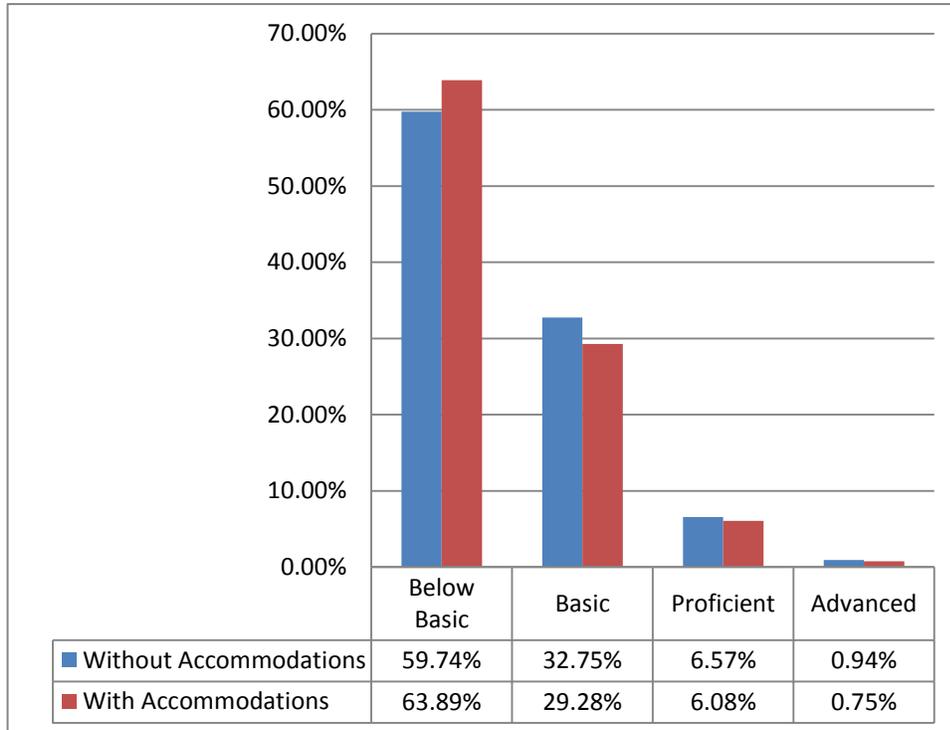


Figure 33. Proportions of Students by Performance Level for Spring EOC Algebra based on LEP

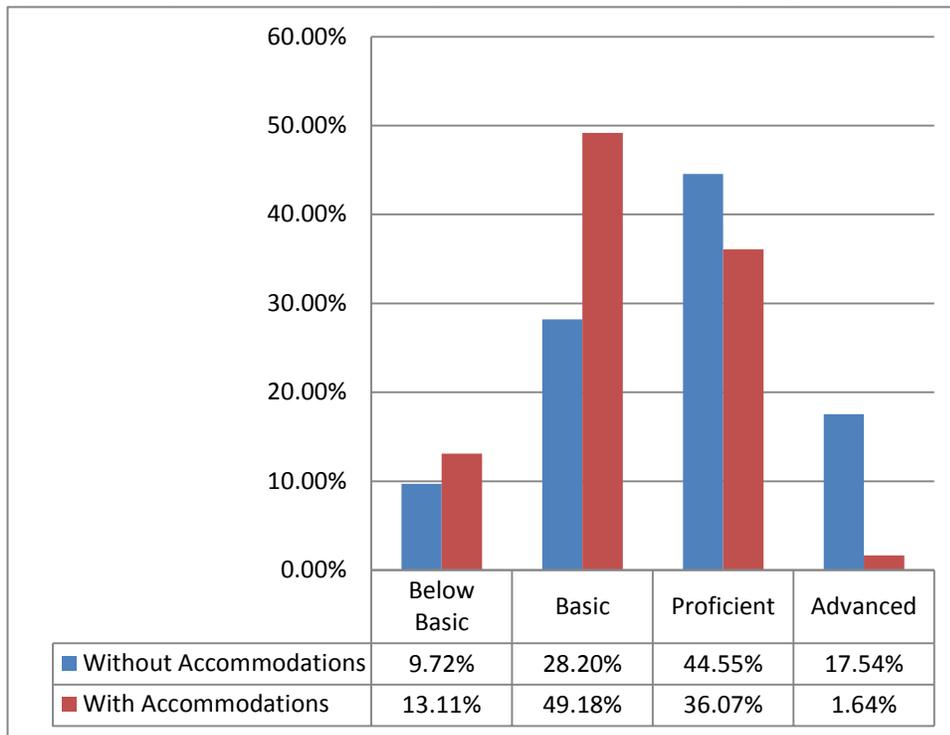


Figure 34. Proportions of Students by Performance Level for Spring EOC Geometry based on LEP

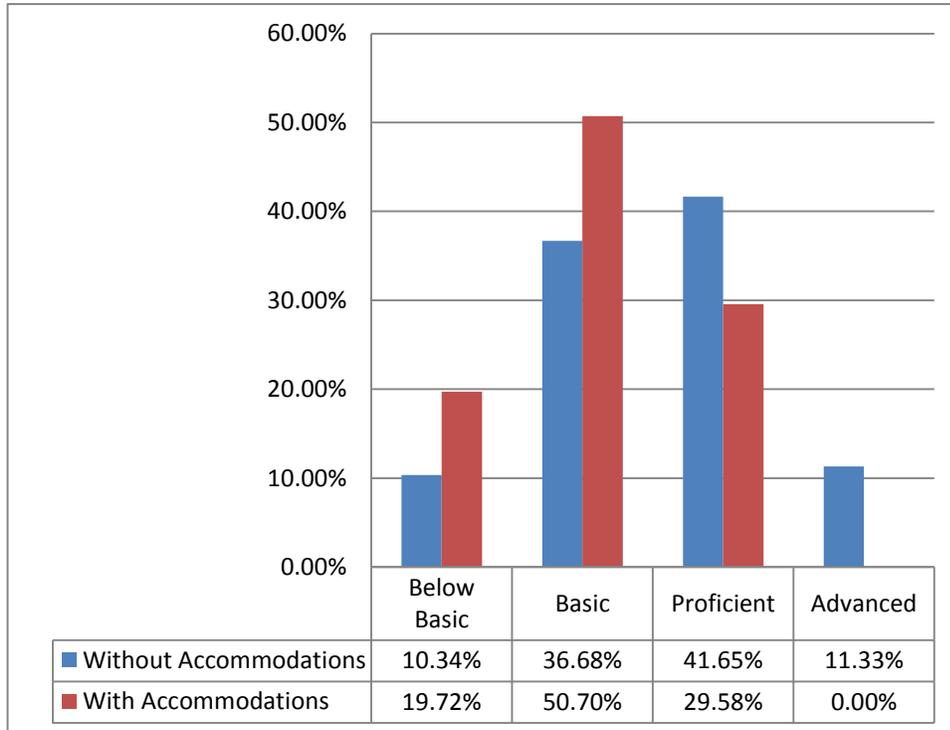


Figure 35. Proportions of Students by Performance Level for Spring EOC Literacy based on LEP

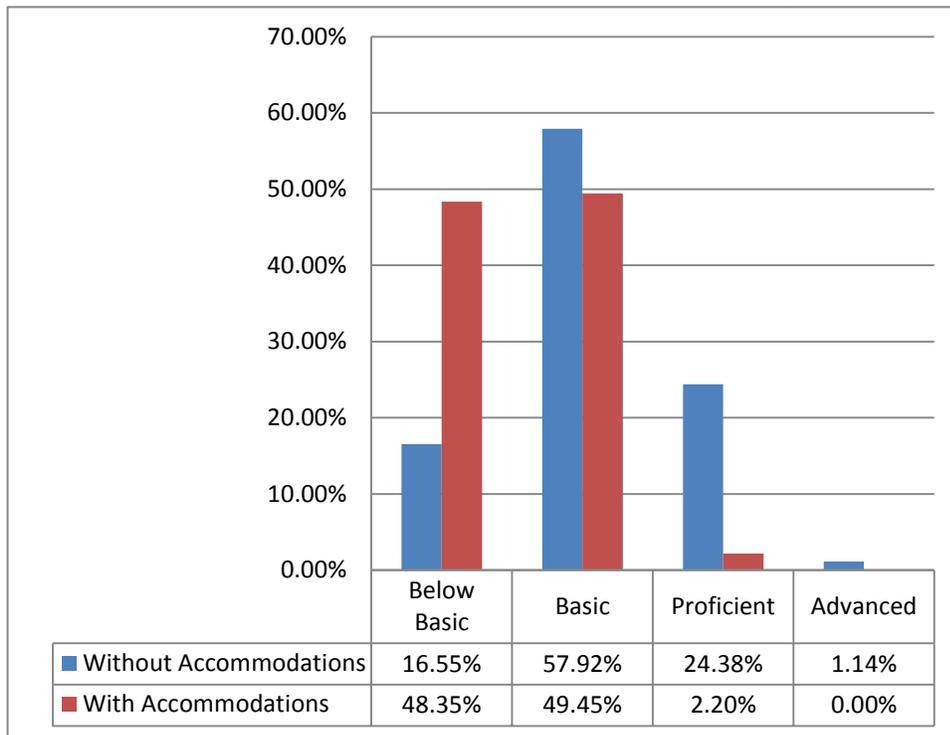
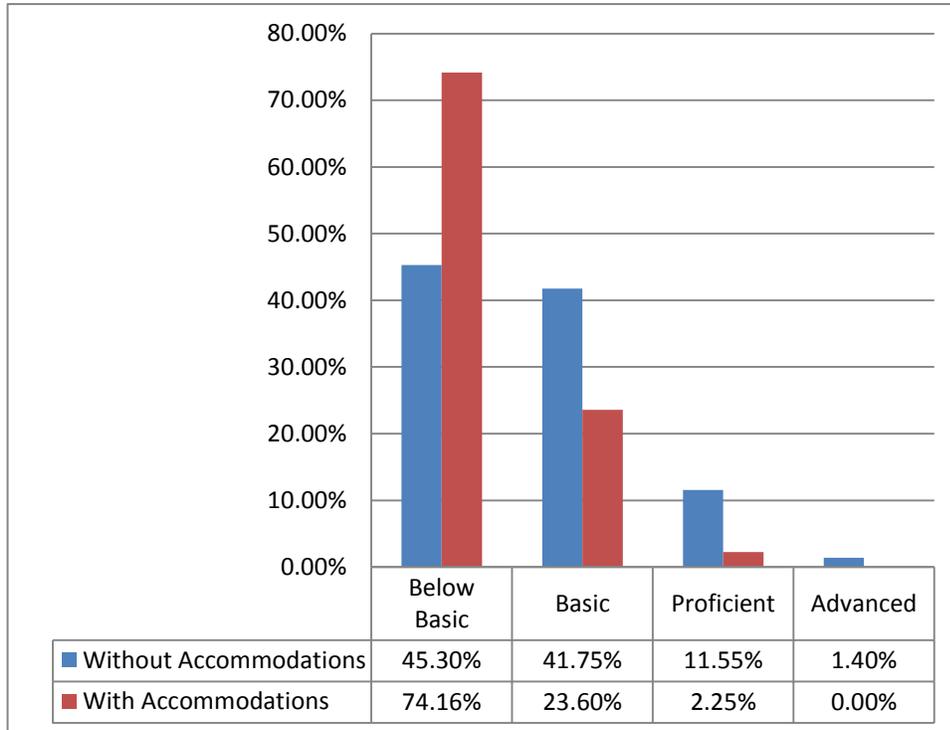


Figure 36. Proportions of Students by Performance Level for Spring EOC Biology based on LEP



3.3. Discussion

Given the results of these analyses, it appears that the accommodations are most likely being used appropriately. Certainly, there is no clear advantage to students who receive accommodations through their IEPs and ESL teacher recommendations. A comparison of results across years 2009, 2010, and 2011 could provide a clearer picture of the use and appropriateness of accommodations. However, computing inferential statistics on these data is not warranted and would most likely result in some significant differences based solely on chance and measurement error. It is important to continue to complete these analyses to investigate changes over time and cohort. It is most important to continue to review, refine, and revise the allowable accommodations periodically. This process along with the administration manual and training sessions will help teachers and test coordinators understand and use accommodations appropriately.