
Education in the United Way Service Area

Strategy Measures - 2014

The Institute for Urban Policy Research
At The University of Texas at Dallas



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Introduction

This report presents analysis conducted by the Institute for Urban Policy Research (IUPR) to measure progress in the community-wide education goals set by the United Way of Metropolitan Dallas. The report uses publicly available education data to produce estimates for the Collin, Dallas, southern Denton and Rockwall counties. This report will refer to this collective area as the United Way of Metropolitan Dallas service area.

The indicators analyzed in this report are third grade reading and elementary and high school math and science abilities, and overall STAAR scores. The Texas Education Agency first implemented the State of Texas Assessment of Academic Readiness (STAAR) in 2012, replacing the Texas Assessment of Knowledge and Skills (TAKS). Since then, the STAAR has been phased into schools gradually and is expected to be implemented fully by 2016. Under STAAR, students in Grades 3–8 are tested for reading and mathematics, Grades 4 and 7 for writing, Grades 5 and 8 for science, and Grade 8 for social studies. High school students have end-of-course (EOC) assessments for each of their required courses. STAAR has three levels of performance measurement: Level I (unsatisfactory academic performance), Level II (satisfactory academic performance) and Level III (advanced academic performance). These standards are indicators not only of the learning abilities of students, but also of how well they are prepared for postsecondary education.

Third-Grade Reading

Third-grade reading ability is indicative of the accumulative impact of instruction in the preceding years and plays an important role in the student’s overall academic and vocational success. Children undergo an important transition in elementary school: Until the end of third grade, they are learning to read. By the start of fourth grade, they are reading to learn.¹ Students who are not reading at the expected level by the end of third grade have difficulty meeting educational demands in the years that follow. Third-grade reading is also shown to be a significant predictor of eighth-grade reading, which in turn impacts college readiness and graduation.²

STAAR implementation relied initially on a progressive implementation plan that would gradually increase the rigor of the standards by which students, teachers, schools and districts are measured. This plan was intended to allow students and faculty time to adjust to the new exam. As a result, several standards exist for measuring student success, each with its own merits for reporting use. These various “phase-in” standards reflect the gradual introduction of STAAR. Based on the original implementation

¹ Annie E. Casey Foundation (2010). *Early warning! Why reading by the end of third grade matters: A kids count special report from the Annie E. Casey Foundation.*

² Lesnick, J. et al. (2010). *Reading on grade level in third grade: How is it related to high school performance and college enrollment?* Annie E. Casey Foundation.

plan, the definition of “Level II,” which indicates an acceptable level of performance, would change in phases. Initially, students would be held to Level II phase-in 1, then phase-in 2, and eventually Level II “final recommended,” which represents the final definition for grade-level achievement. Although changes have been made to the phase-in schedule, the current plan has identified the 2021–2022 school year as the first year in which the final recommended standards will take effect.³

Figure 1. Percentage of Students Meeting Level II and Level III Criteria in Third-Grade Reading, United Way of Metropolitan Dallas Service Area.

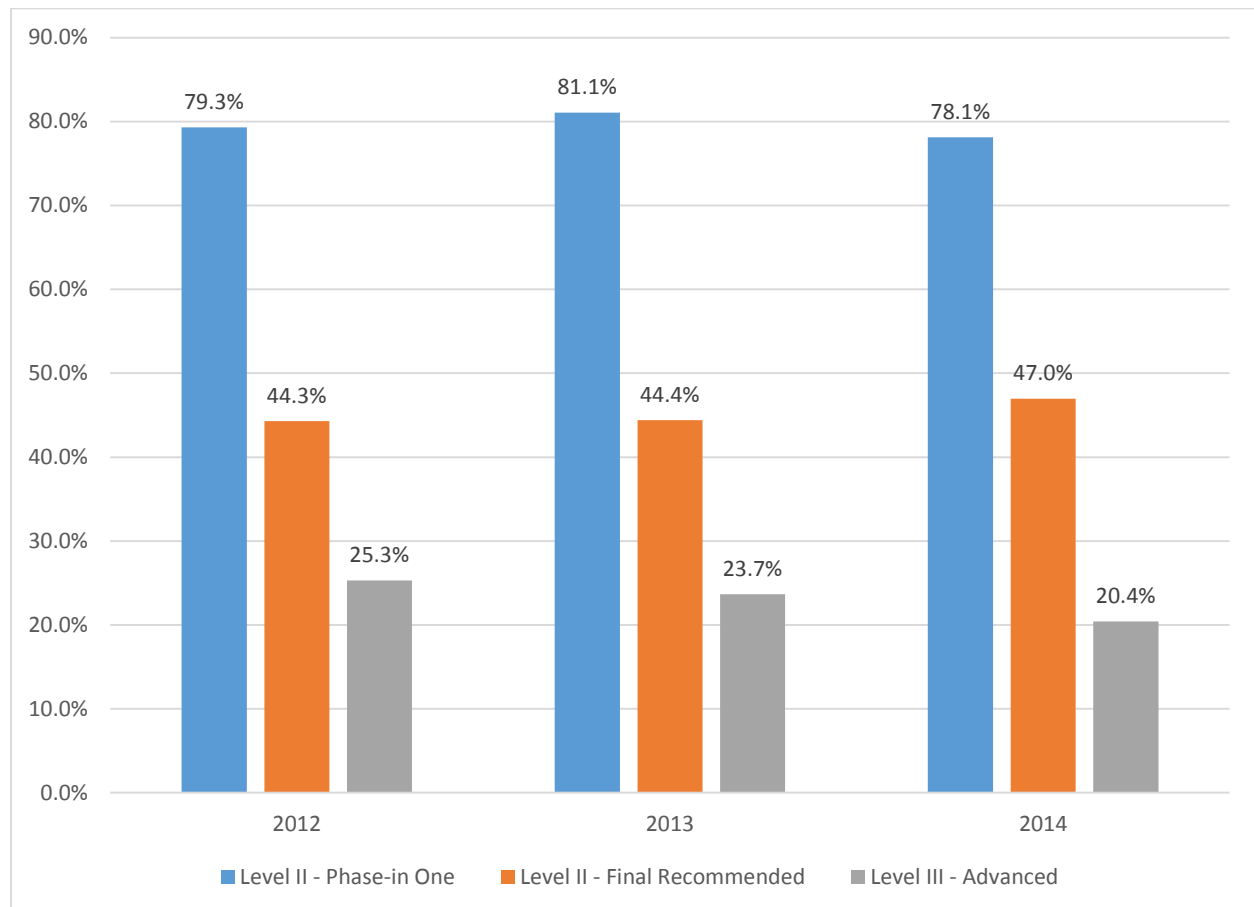


Figure 1 illustrates the third-grade reading performance of the entire United Way of Metropolitan Dallas service area from 2012 to 2014 based on three of the STAAR performance measures. The blue bars represent the percentage of third graders meeting the STAAR Level II phase-in 1 STAAR standard. Although the phase-in standard does not measure true on-grade performance, it is the standard by which the TEA currently evaluates its schools and districts. It is the only standard by which the TEA has measured performance since the implementation of the STAAR. The orange bars indicate the percentage of students meeting the Level II final recommended standard. This standard reflects actual on-grade performance. Therefore, in 2014, only 47% of third graders in the UWMD service area

³ For the current phase in schedule, see this chart: <http://tea.texas.gov/WorkArea/DownloadAsset.aspx?id=25769825112>, and for more information about the changes to the phase in schedule, see this letter from former TEA commissioner Michael Williams: ([http://tea.texas.gov/About_TEA/Laws_and_Rules/Commissioner_Rules_\(TAC\)/Proposed_Commissioner_of_Education_Rules/](http://tea.texas.gov/About_TEA/Laws_and_Rules/Commissioner_Rules_(TAC)/Proposed_Commissioner_of_Education_Rules/)).

performed at grade level, while 78.1% of third graders in the service area met the current performance standard for third grade reading in 2014. Approximately one third of third graders in the service area met the TEA performance standards in reading without demonstrating the ability to read at a third-grade level. Finally, the gray bar shows the percentage of third graders achieving the Level III advanced standard, which is a constant standard that is not subject to phase-in changes.

Figure 1 demonstrates a slight increase in the percentage of third graders reading at grade level (Level II final recommended) but also a steady decline in the percentage of students meeting the Level III advanced standard. Figure 2 shows the same three performance standards applied at the county level in 2014. Dallas County clearly underperformed compared to the suburban counties, especially Collin County, which reported a Level III advanced rate double that of Dallas County.

Figure 2. Percentage of Students Meeting Level II and Level III Criteria in Third-Grade Reading by County, United Way of Metropolitan Dallas Service Area.

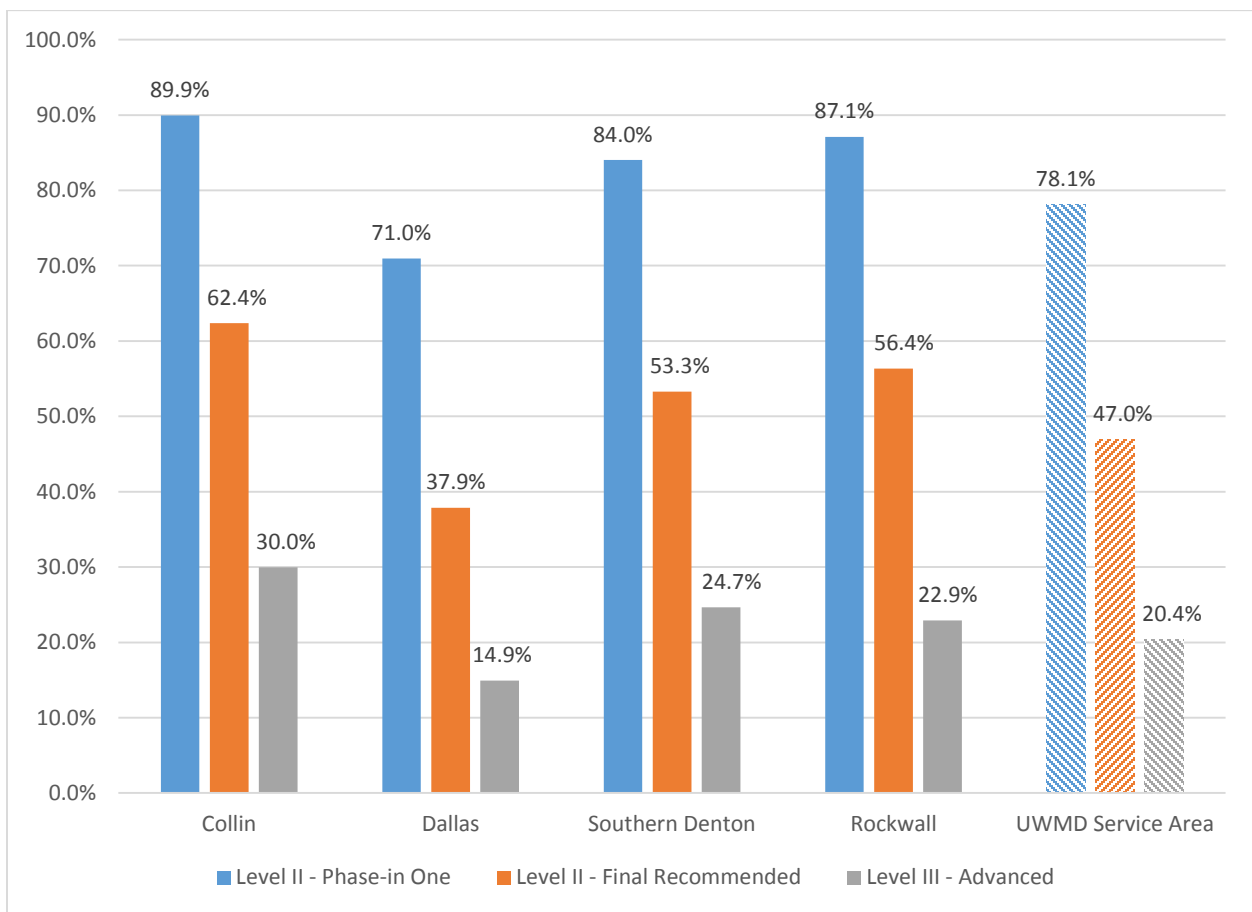
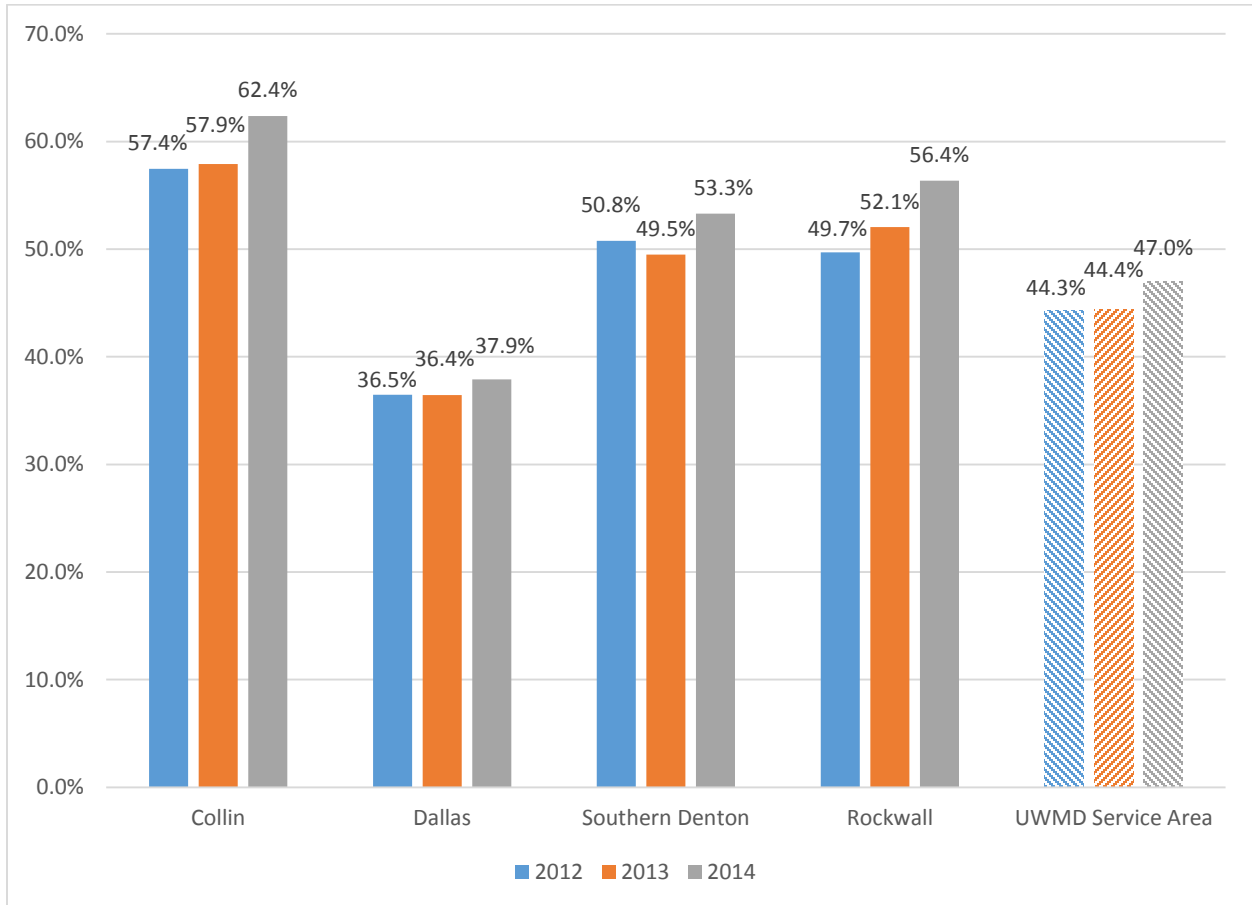


Figure 3 solely examines the percentage of third graders meeting the Level II final recommended standard, which indicates on-grade performance. All counties have experienced a net increase over the three-year period, as has the service area overall, and every county except southern Denton County experienced a year-over-year increase for the time period. Much like Figure 2, Figure 3 also highlights county-level disparities, with Dallas County not only trailing the suburban counties in overall

performance but also experiencing slower improvement, especially compared to Collin and Rockwall counties.

Figure 3. Percentage of Students Meeting Level II Final Recommended Criteria in Third-Grade Reading by County, United Way of Metropolitan Dallas Service Area.



Math and Science

Increasing focus on math and science education is important for enhancing U.S. competitiveness and improving the job prospects of future workers. According to a Bureau of Labor Statistics study of labor projections, by 2018, nine out of 10 of the fastest growing occupations that require at least a bachelor’s degree will rely on major training in math or science.⁴ Science, technology, engineering and mathematics (STEM) occupations are also expected to grow faster than the combined rate of all occupations.⁵ Recently, schools have emphasized developing curricula focused on math and science education. This section reviews progress in elementary and high school math and science among counties within the United Way of Metropolitan Dallas service area since the introduction of the STAAR.

⁴ Lacey, T. A. & Wright, B. (2009). Occupational employment projects to 2018: *Monthly Labor Review*, 132(11), 82-123.

⁵ National Science Board (2010). Preparing the next generation of STEM innovators: Identifying and developing our nation’s human capital. Arlington, VA: Author.

Figure 4. Percent of Students Meeting Level II and Level III Criteria in Fourth-Grade Math, United Way of Metropolitan Dallas Service Area.

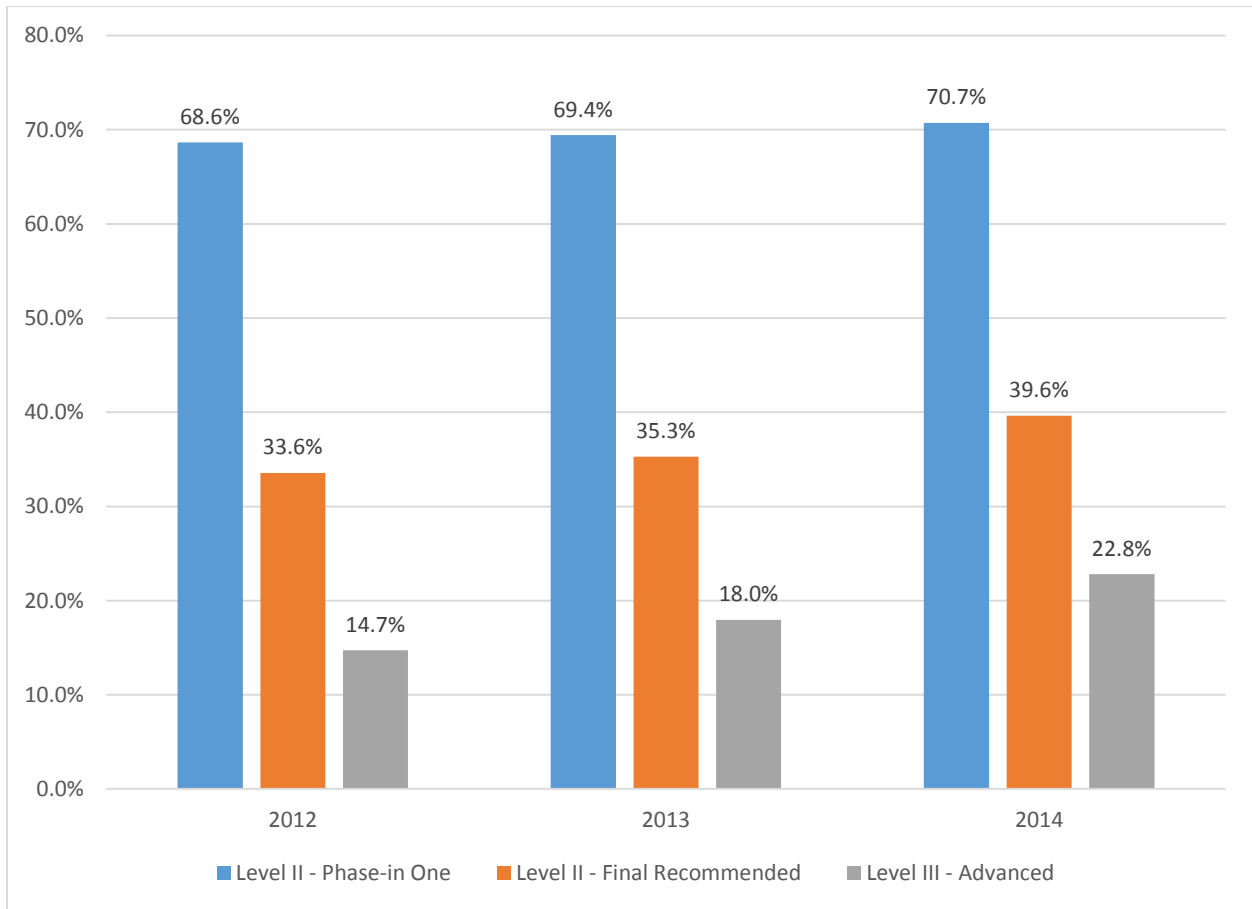


Figure 4 illustrates the same information in Figure 1, except in reference to fourth-grade math rather than third-grade reading. Again, there is a significant difference in the percentage of students achieving the phase-in 1 standard and the final recommended standard. The difference was nearly double in both 2012 and 2013; however, there was a 4.3% increase in the percentage of students reaching the final recommended level in 2014. There was also a 4.8% increase in the percentage of students meeting the Level III advanced performance standard. While 60% of fourth graders in the service area do not perform at grade level in math, there is evidence of improvement in each year since the introduction of the STAAR.

Figure 5. Percentage of Students Meeting Level II and Level III Criteria in Fourth-Grade Math by County, United Way of Metropolitan Dallas Service Area.

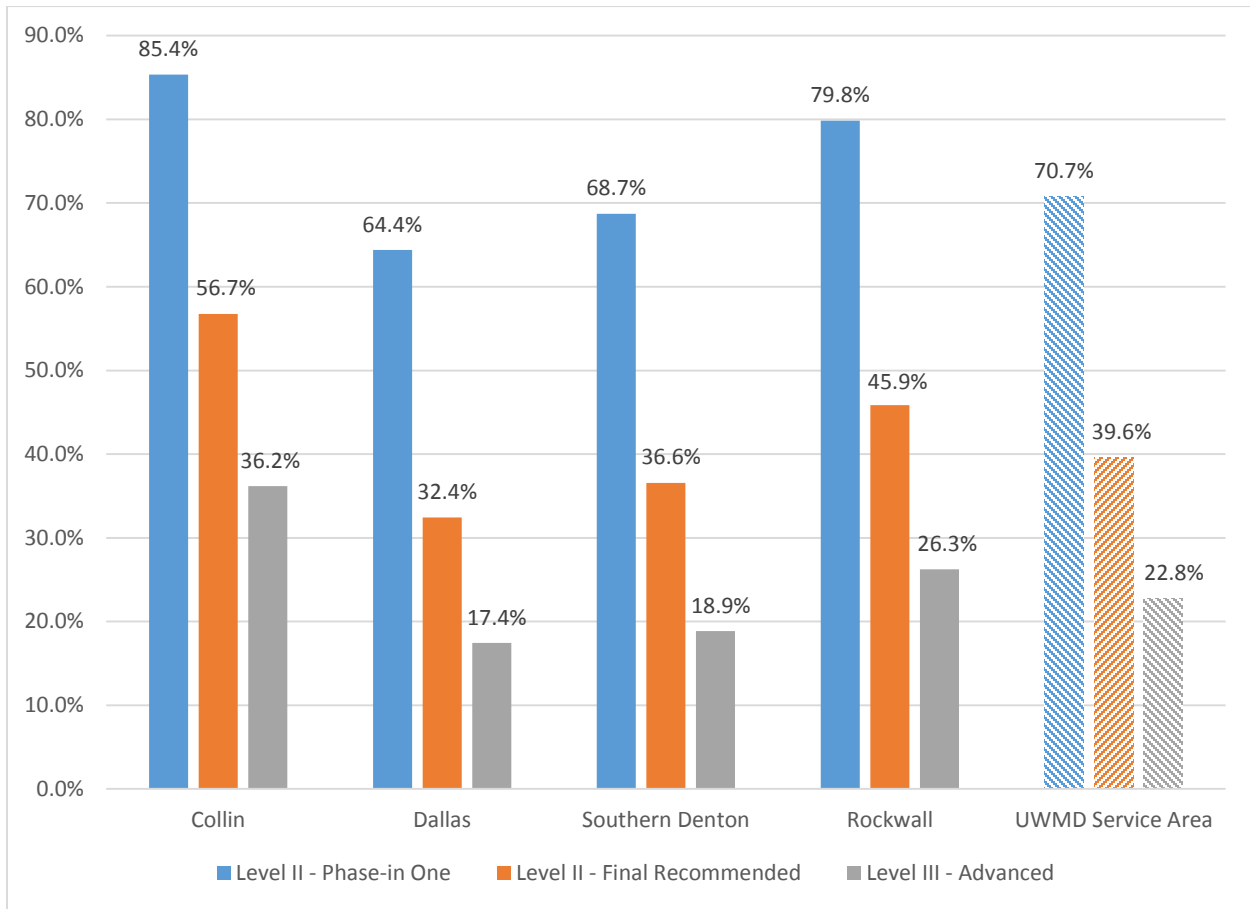


Figure 5 displays the same information for 2014 across all counties in the service area. Again, county-level disparities are evident; in particular, Collin County reported Level II phase-in one and Level II final recommended rates 15% higher than those of the service area as a whole. While Rockwall County also outperforms the overall service area, Collin County outperforms every other county on every measure by at least 10 percentage points. Interestingly, when it comes to fourth-grade math, southern Denton County reports numbers that are remarkably similar to that of Dallas County; this is a contrast to third-grade reading, where southern Denton County strongly outperformed Dallas County.

Error! Not a valid bookmark self-reference. demonstrates the percentage of fourth graders meeting the Level II final recommended standard for math, which indicates on-grade performance, in 2012–2014. Collin and Dallas counties both demonstrated consistent upward trends, with Collin County improving by 10% over the three-year period and Dallas County improving by 5% over the same period. Rockwall County also experienced a net increase of 10% from 2012 to 2014; however, the number decreased from 2012 to 2013 before spiking in 2014. Finally, southern Denton County experienced a net decrease in the percentage of fourth graders performing at grade level in math, although there was a small increase from 2013 to 2014.

Figure 6. Percentage of Students Meeting Level II Final Recommended Criteria in Fourth Grade Math by County, United Way of Metropolitan Dallas Service Area.

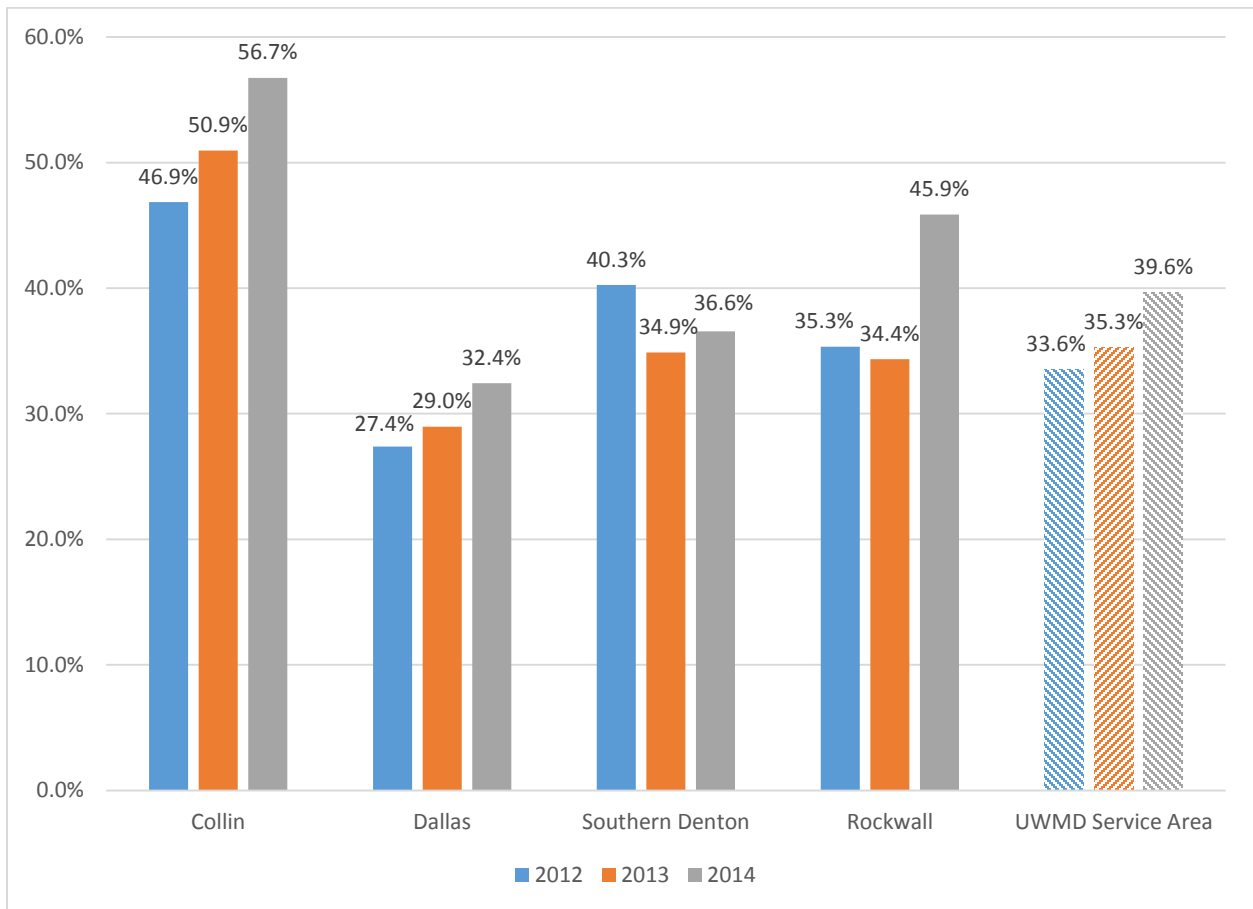
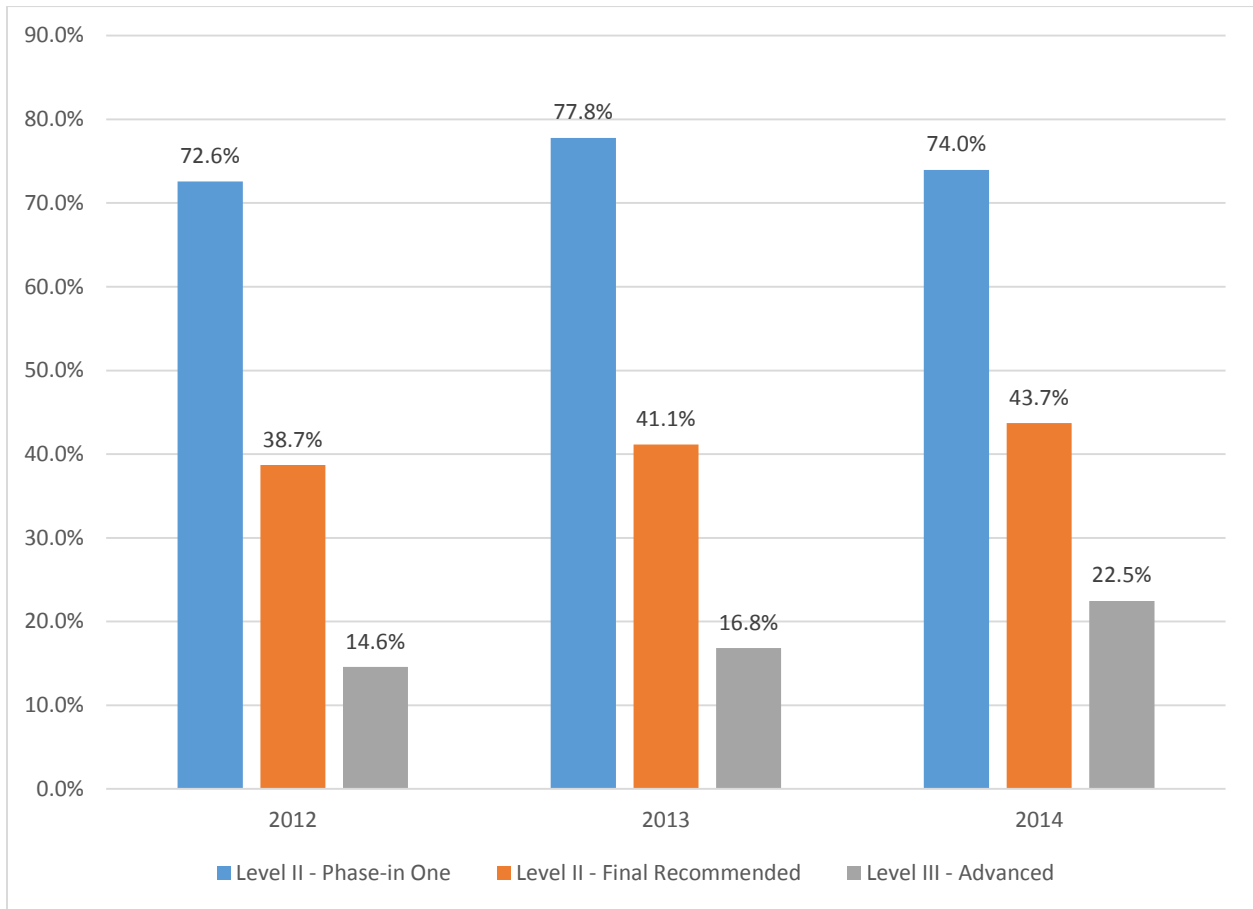


Figure 7. Percent of Students Meeting Level II and Level III Criteria in Eighth-Grade Science, United Way of Metropolitan Dallas Service Area.



Eighth-grade science scores have, for the most part, improved over the three-year period, as demonstrated by Figure 7. In particular, the percentage of students meeting the Level II final recommended and Level III advanced standards have steadily increased since 2012. Figure 8 shows these performance levels by county, which continue to demonstrate county-level disparities, but to a lesser extent than the math scores. Furthermore, Figure 9 shows that the percentage of students scoring at grade level on eighth-grade science has steadily increased each year for the service area as a whole and for each individual county, except southern Denton County.

Figure 8. Percent of Students Meeting Level II and Level III Criteria in Eighth-Grade Science by County, United Way of Metropolitan Dallas Service Area.

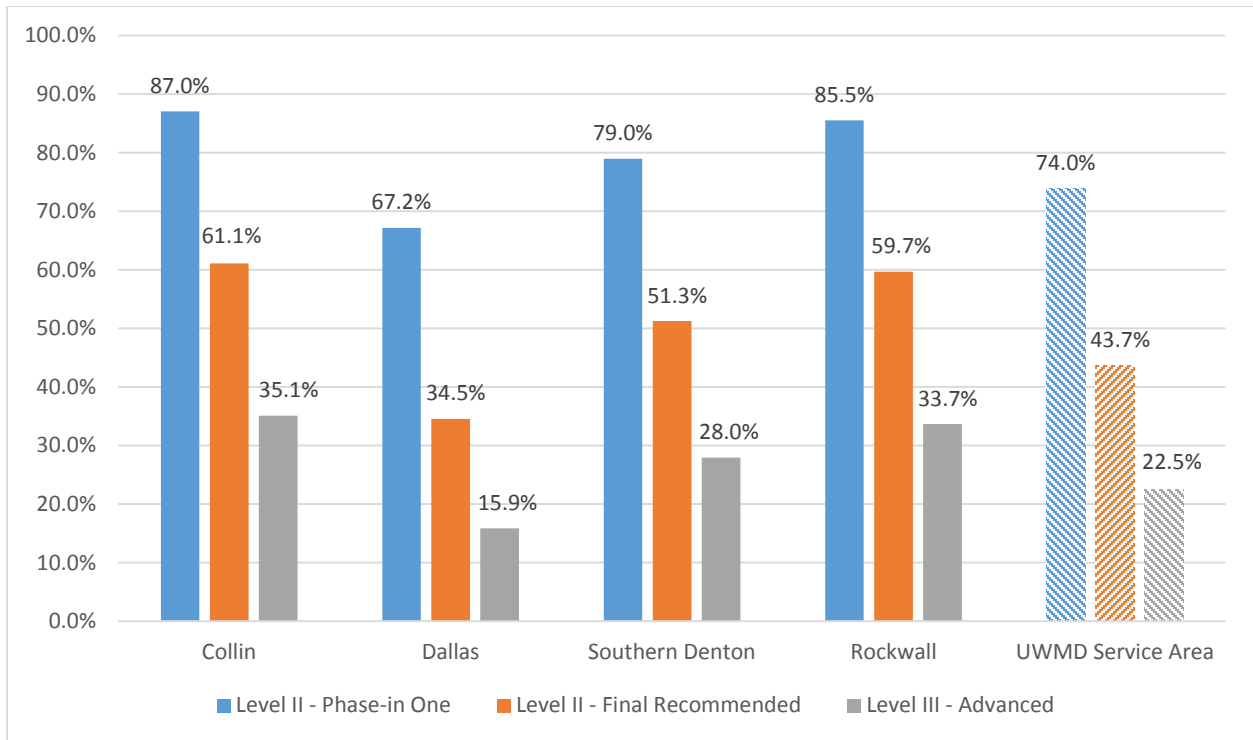


Figure 9. Percent of Students Meeting Level II Final Recommended Criteria in Eighth-Grade Science by County, United Way of Metropolitan Dallas Service Area.

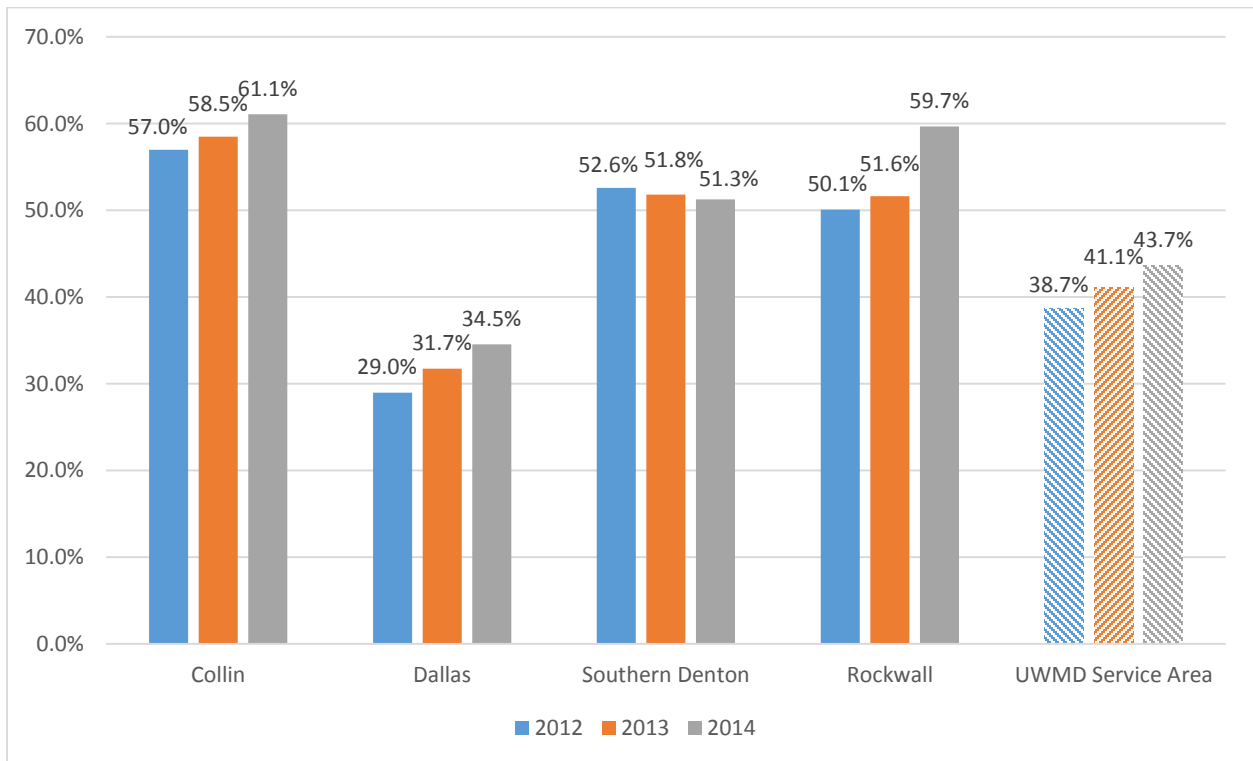
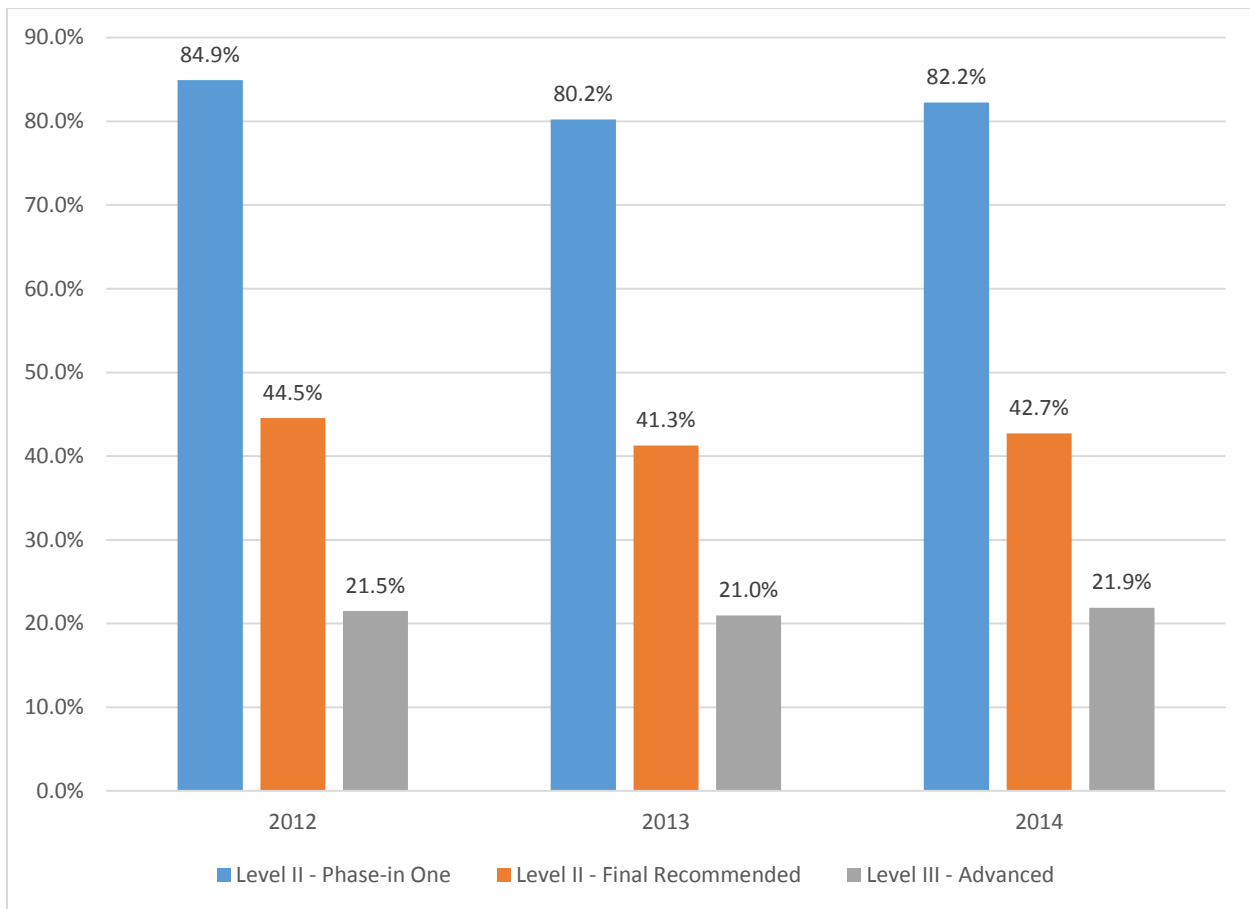


Figure 10. Percent of Students Meeting Level II and Level III Criteria on Algebra I, United Way of Metropolitan Dallas Service Area.



In Algebra I, which most students take during ninth or 10th grade, the percentage of students meeting the current phase-in standard is nearly double the percentage of students meeting the final recommended standard (as shown in Figure 10). This is important because performance and accountability measurements for high schools are based on the phase-in 1 standard, which—when examined in isolation—suggests a much higher level of performance (82.2%) than the final recommended standard (42.7%). Figure 11 further demonstrates county-level disparities, with Collin and southern Denton counties reporting twice the percentages of students meeting the Level II final recommended standard than Dallas County did. Collin County was the only county to report year-over-year increases for the three-year period, as demonstrated by the percentage of students achieving Level II final recommended shown in Figure 12. The remaining three counties—and the service area overall—followed a different pattern in which the percentage of students achieving Level II final recommended decreased from 2012 to 2013 before increasing in 2014. However, in each case, the increase in 2014 was not enough to exceed the 2012 performance.

Figure 11. Percentage of Students Meeting Level II and Level III Criteria in Algebra I by County, United Way of Metropolitan Dallas Service Area.

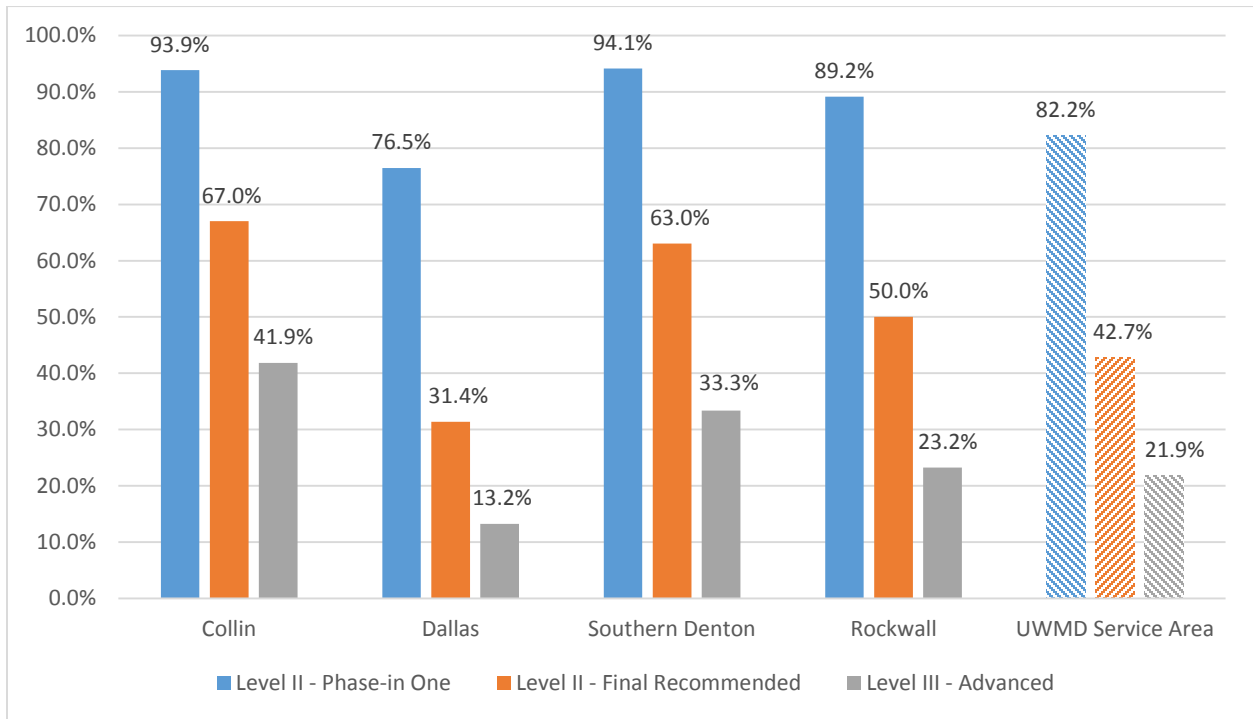


Figure 12. Percentage of Students Meeting Level II Final Recommended Criteria in Algebra I by County, United Way of Metropolitan Dallas Service Area.

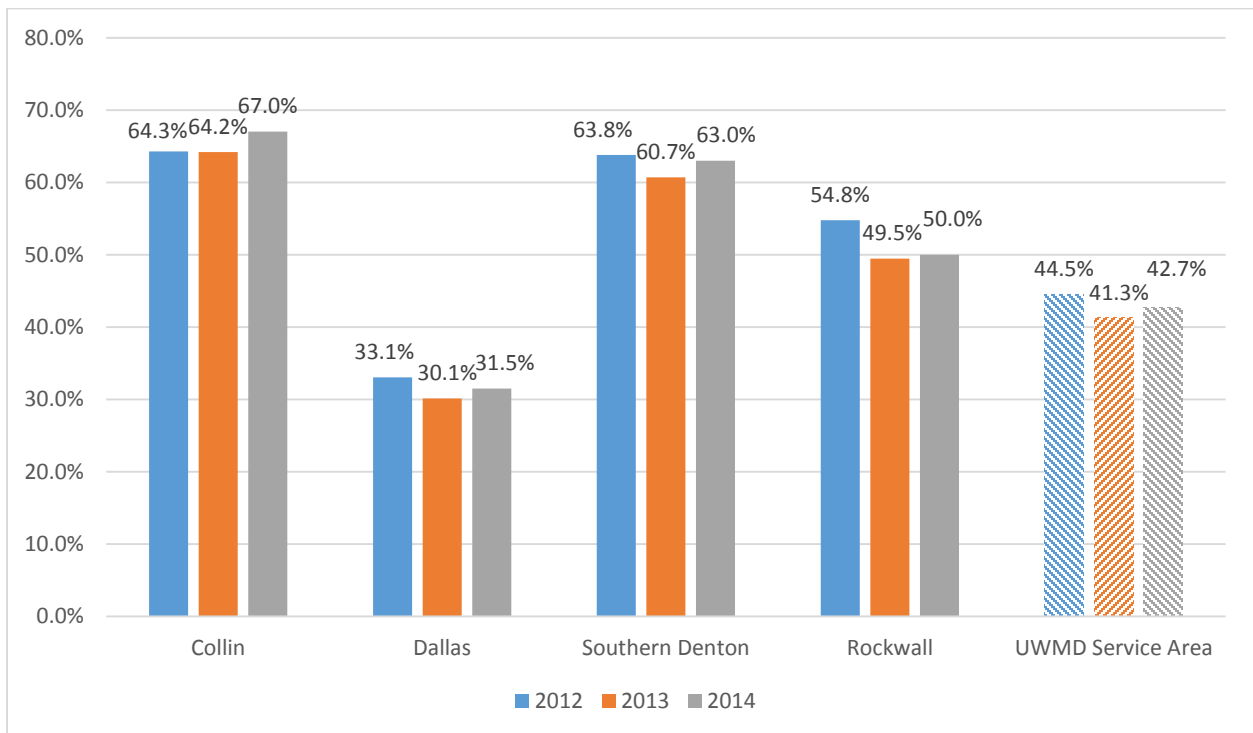


Figure 13. Percentage of Students Meeting Level II and Level III Criteria in Biology, United Way of Metropolitan Dallas Service Area.

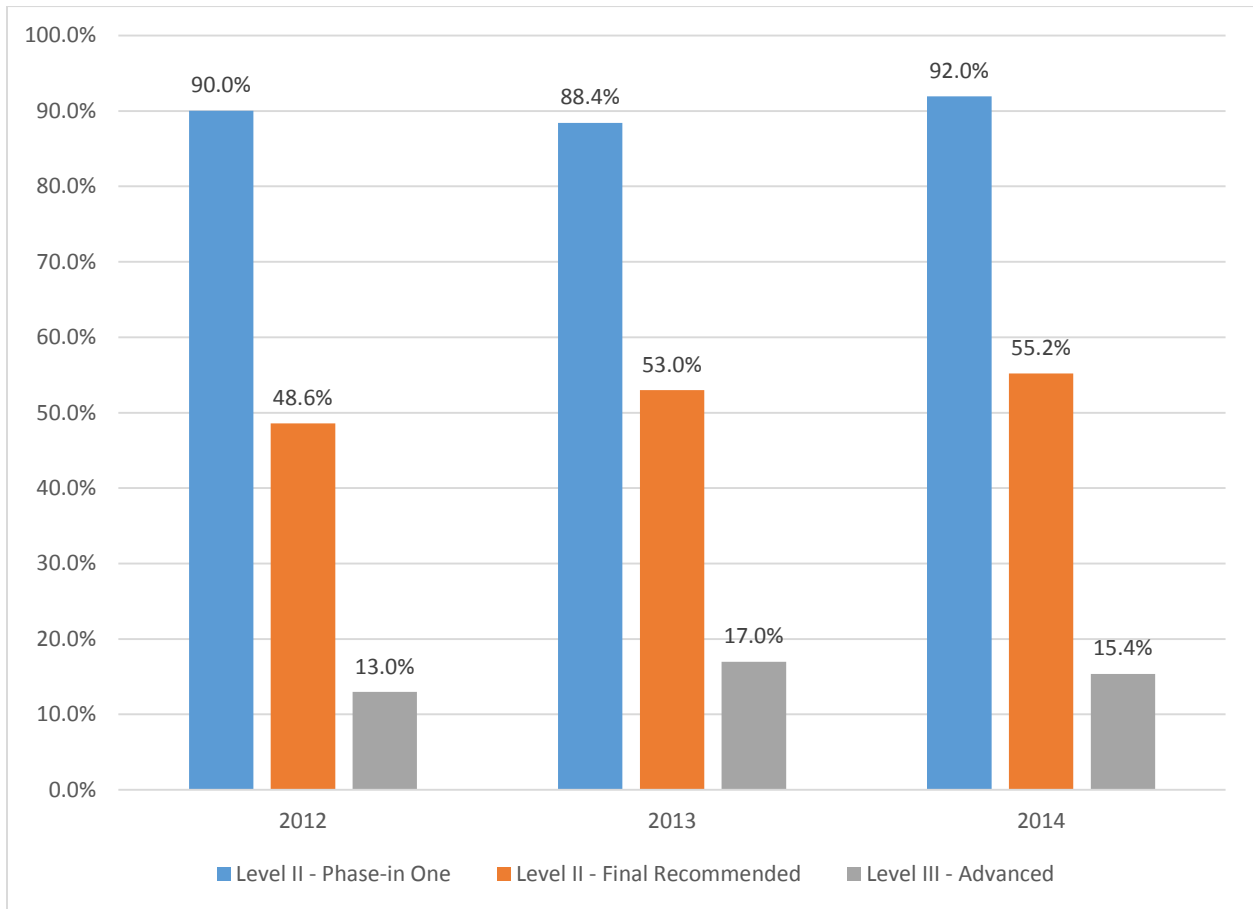


Figure 13 shows student performance on the Biology EOC, another assessment of high school student performance. When compared with the Algebra I results shown in Figure 10, student performance is generally better in Biology than Algebra I. Figure 14 shows that county-level disparities in Biology EOC results are muted compared to Algebra I EOC results. County-level performance in Biology more closely matches overall service area performance, particularly with regards to Level II phase-in one results. Figure 15 shows that the service area overall, as well as each individual county, reported consistent improvement throughout the three-year period.

Figure 14. Percent of Students Meeting Level II and Level III Criteria in Biology by County, United Way of Metropolitan Dallas Service Area.

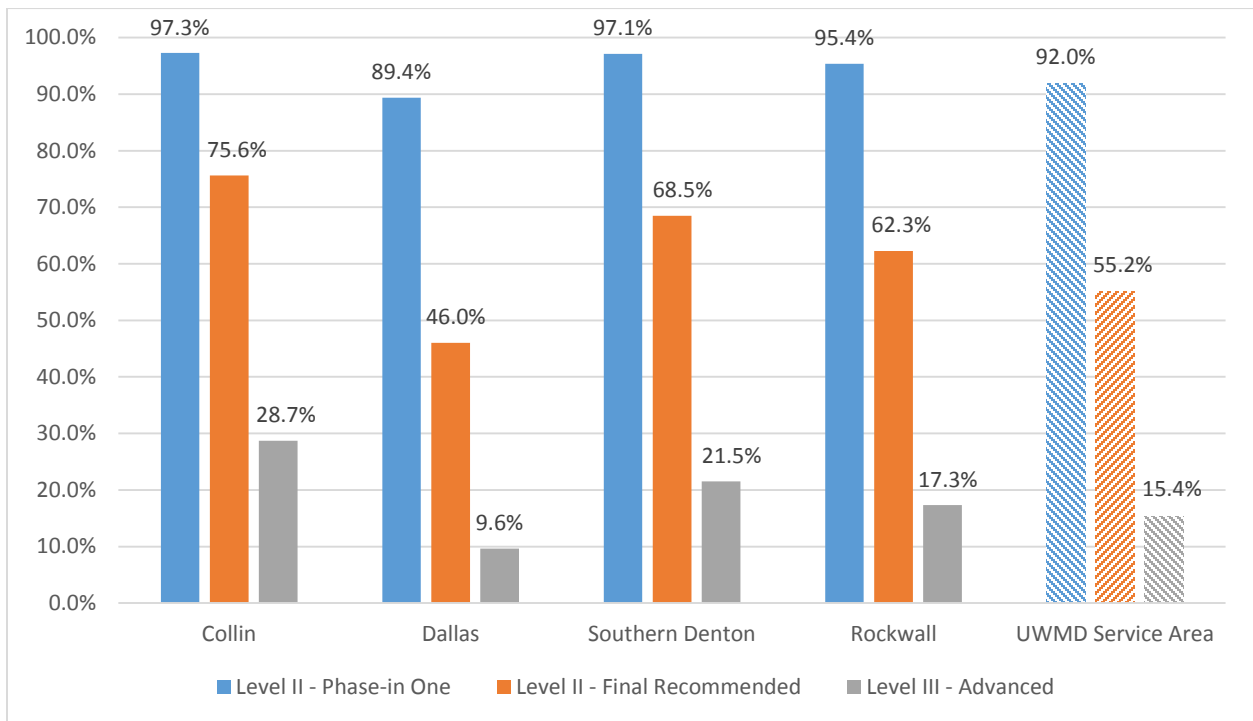
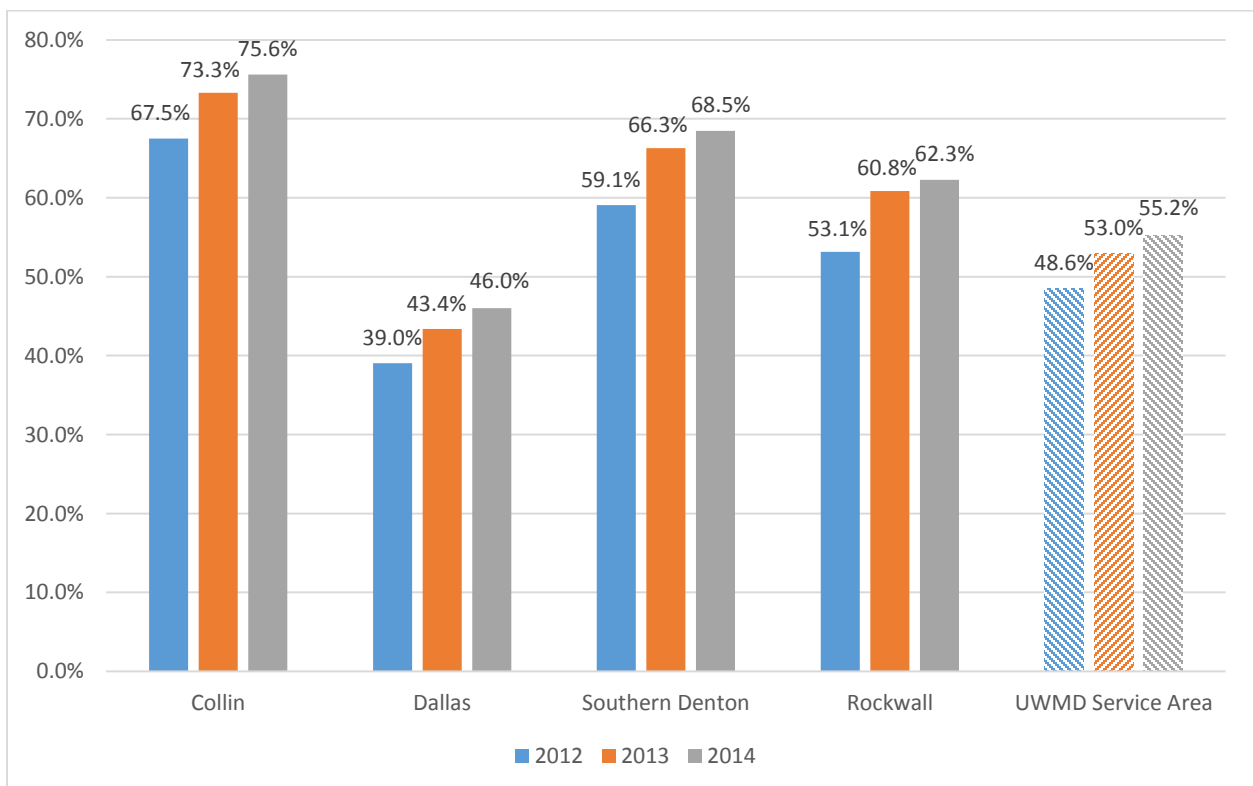


Figure 15. Percent of Students Meeting Level II Final Recommended Criteria in Biology by County, United Way of Metropolitan Dallas Service Area.



Overall STAAR Scores

This section reports the proportion of students achieving the Level III advanced standard for all subjects, as well as for math and science individually. The indicator reflects student performance across Grades 3–11. The percentages are computed by dividing the number of students achieving the Level III standard in each subject(s) by the total number of students appearing in that subject(s).

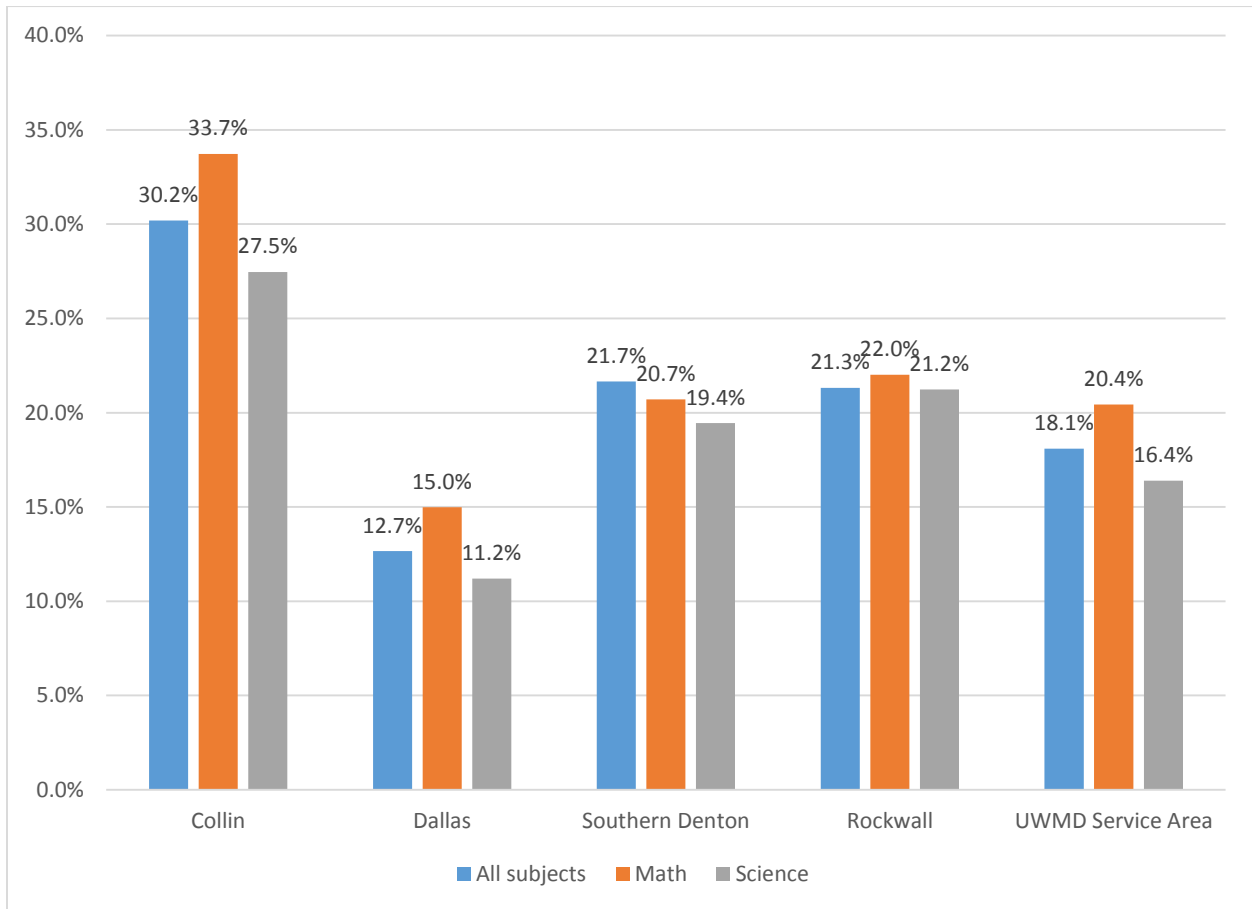
The Level III advanced academic performance standard varies by grade and subject, and because STAAR performance standards are set as scale scores, requirements cannot be expressed as a number or percentage of questions correctly answered.⁶ For example, the Level III requirement for Algebra I is 4,333, and in the fall of 2014 a raw score of 41, or 76%, was required to achieve Level III. However, a semester earlier, a raw score of 42, or 78%, was required to achieve the same scale score. Similarly, the scale score requirement for biology is 4,576, which in the fall of 2014 required a raw score of 45—or 83%—to achieve Level III. Achieving a scale score of 4,576 on the Algebra I test would have required a raw score of 47, demonstrating the difficulty of comparing cut scores across years and even subjects within the same year. As a result, the criteria for Level III advanced cannot be expressed as a percentage of correctly answered questions that would apply universally to all grades, subjects or years.⁷

Figure 16 shows the percentage of students meeting the Level III advanced standard in 2014. Among the four counties, Collin County had the highest proportion of students meeting the Level III standard in all subjects and in math and science. In contrast, Dallas County had the lowest proportion of students in each category generally reporting rates roughly half those of Collin County. Southern Denton and Rockwall counties reported Level III advanced percentages that fell in between Collin and Dallas counties and were roughly similar to each other. Due to population imbalances that favor Dallas County, the service area as a whole performed slightly worse than southern Denton and Rockwall counties. Overall, 18.1% of students in the United Way of Metropolitan Dallas service area achieved the Level III advanced standard in all subjects.

⁶ For more information on scale scores and standard setting, see pages 6 and 7 of the following document: tea.texas.gov/WorkArea/DownloadAsset.aspx?id=25769811319

⁷ For more information on raw score conversion, visit: <http://tea.texas.gov/student.assessment/staar/convtables/>

Figure 16. Percentage of Students Achieving STAAR Level III Advanced for all Grades, 2014, United Way of Metropolitan Dallas Service Area



Conclusion

The transition from TAKS to STAAR concurred with a decline in the proportion of third graders and English Language Learners (ELLs) from all grades who met the minimum standard for reading in the test administered. The proportion of students meeting the minimum standard on high school math and science and on all subjects was not measurably affected by the transition. Furthermore, the proportion of students achieving the Level III advanced criteria was higher in 2014 than in 2012 across the United Way of Metropolitan Dallas service area. Overall, while the STAAR exam is considered to be more rigorous and comprehensive in its evaluation of students' knowledge and abilities, its impact on the education outcome measures analyzed in this report is mixed.