



# TEACHER AND STUDENT MIGRATION IN AND OUT OF TENNESSEE'S ACHIEVEMENT SCHOOL DISTRICT

Gary Henry, Ron Zimmer, Jonathon Attridge,  
Adam Kho, and Samantha Viano

Tennessee's First to the Top plan, funded through the federal Race to the Top competition in 2010-11, established the Achievement School District (ASD) and gave it the responsibility for turning around the lowest-performing five percent of the schools in the state. The stated goal for the ASD is to move academic performance of the schools that are taken over from the bottom five percent of schools to the top quartile of schools in Tennessee within five years. In 2012-13, the first cohort of six schools were taken over by the ASD and began the turnaround process – three run by charter management organizations (CMOs) and three run directly by the ASD. In 2013-14, ASD added 11 schools, eight run by CMOs and three run directly by ASD, for a total of 17 ASD schools. While it is too soon to provide definitive estimates of impact of the ASD takeover on these schools, the purpose of this policy brief is to examine the way that teachers and students move in and out of ASD schools.

## KEY FINDINGS

### Teachers

1. Approximately 14 percent of the teachers that staffed schools taken over by ASD in 2011-12 remained in the schools in the year after the takeover. This compares to 70 percent of teachers staying in the ASD schools between the 2010-11 and 2011-12 school years. Approximately 83 percent of the teaching staff in schools that were taken over by ASD in 2012 moved to other schools within the state for the 2012-13 school year.
2. In the first cohort of ASD schools in the 2012-13 school year, approximately 57 percent of the teachers had previously taught in other Tennessee schools and 31 percent were novice teachers or transferred from private schools or schools in other states.
3. In their first year of operation, the ASD schools added more high-performing teachers, in terms of value-added scores, than they lost. The incoming ASD teachers had the highest ratio of high performing to low performing teachers of all other types of schools, including the other lowest performing schools, charter schools and all other schools in Tennessee.

### Students

1. ASD has a high rate of student mobility into their schools, but these rates have declined since these schools became part of the ASD. By the 2013-14 school year, the student mobility rates were about the same as other low-performing schools in Memphis and over twice as high as the rest of the state. In terms of flows, there were no large differences in the net flows of students in or out of the ASD schools in the second cohort of ASD schools as compared to the first cohort, but there was an initial net outflow of students in the first cohort of ASD schools. However, this net outflow disappeared by their second year.
2. In the 2013-14 school year, ASD schools had a slightly higher percentage of special education students (15.2%) as compared to the Memphis non-priority schools (13.3%) and a slightly lower percent than the rest of Memphis priority schools (17.5%) and Memphis iZone schools (15.7%). In addition, we found that students entering ASD schools were not higher achieving than students exiting. Furthermore, differences in the achievement levels of students entering and exiting ASD were similar to other low-performing schools in Memphis.
3. The difference in levels of proficiency between students moving in and students moving out of ASD schools has little effect on the overall proficiency rates of ASD schools.

We focus on teachers for two reasons. First, a large body of research confirms that teachers are the most important school-based resource for improving student performance. Second, staffing the lowest performing schools with highly effective teachers is a central and consistent strategy in Tennessee for improving these schools. In this brief, we examine the movement of teachers out of the schools that ASD took over in 2012-13, and we compare prior performance and other characteristics of the teachers hired in the CMO-run and ASD-run schools.

We focus on students and their mobility into and out of the ASD schools for three reasons. First, regardless of whether the schools are managed directly by the ASD or CMOs, the schools are neighborhood schools – not exclusively schools of choice. That is, these schools serve the community residing near the school rather than exclusively serving students whose parents choose to send their children to that school and are admitted. Second, high rates of student mobility can make educating students more challenging. Third, for any case in which schools are not operated by a local school district, there are concerns as to whether the schools will be accessible to all students. For example, researchers have found that charter schools serve fewer students with special needs than neighborhood schools that are in the same or similar neighborhoods (Zimmer et al., 2003; Winters, 2013). In this brief, we compare the students served by the ASD schools with students enrolled in other types of schools, examining the characteristics of the students, their mobility, and the extent to which student mobility could affect the schools' academic performance.

## KEY QUESTIONS

In this brief, we address two sets of three questions about ASD teachers and students:

### Teachers

1. How many teachers stayed, moved or left teaching from the schools that ASD took over prior to their first year of operation?
2. How does ASD staff their schools? How do teachers in the CMO-run schools compare to those in ASD-run schools? How do ASD teachers compare to teachers in other schools in Tennessee?
3. Does ASD hire effective teachers?

### Students

1. What is the overall student mobility rate into ASD schools, and are there more students moving into rather than out of these schools?
2. Do academically disadvantaged students have access to ASD schools? More specifically, do the ASD schools serve a similar percentage of special education students as other schools, and do more high-performing students enter rather than exit ASD schools?
3. Do the movements of low- and high-ability students have implications for how we interpret ASD schools' performance?

To address each of the research questions listed above, we utilized a database that was provided by the Tennessee Department of Education and compiled by the Tennessee Consortium for Research, Evaluation and Development. The database contains information on each student, teacher, and school in Tennessee and links this information with student and teacher information, including students' prior test scores and

teachers' education, certification, experience, and their value-added scores. Value-added scores are estimates of the amount that teachers add to their students' test scores as measured by statewide assessments of achievement and are provided by the Tennessee Value-Added Assessment System, a product of the SAS Institute™. For this study, we utilized the most recent data available, including student information from 2009-10 through 2013-14 and teacher information from 2009-10 through 2012-13, which was the first year of operation for ASD schools.

*Tennessee's First to the Top proposal set out a bold, but previously untested, approach for improving student performance in the state's lowest performing schools: the schools would be removed from their districts and restarted under different management.*

In this brief, we often compare the ASD results to other low-performing schools in Memphis, which is where all but one of the ASD schools are located. The low-performing schools include Memphis innovation zone schools (or iZone schools), which are turnaround schools under the management of the district, and Memphis priority schools, which are schools that are among the lowest-performing five percent of schools, but not an iZone school or under the auspices of the ASD. In describing our results, we often lump the Memphis iZone and priority schools as "other low-performing" schools. We also often include results for Memphis non-priority schools and schools in the rest of the state to provide context.

## ASD TEACHERS

Tennessee's First to the Top proposal set out a bold, but previously untested, approach for improving student performance in the state's lowest performing schools: the schools would be removed from their districts and restarted under different management. Subsequently, the state decided that these schools could be managed by ASD or CMOs. In either case, the staff in the schools had to apply for the teaching positions in the ASD schools or pursue employment elsewhere. The selection of teachers for ASD schools is an important ingredient of the theory of action that ASD plans to use to move their schools from the bottom five to the top 25 percent of performance in five years.

*How many teachers stayed, moved or left teaching from the schools that ASD took over prior to their first year of operation?*

Prior to taking over the six schools in fall 2012-13, the staff turnover rates in these schools were stable, with 28 percent leaving after spring 2010 and 30 percent leaving after spring 2011. Most of the increase was due to the increase in teachers moving from these schools to other public schools in Tennessee. Of the teachers in the six schools that were taken over the following fall, 83 percent moved to other Tennessee schools in fall 2012 and another 4 percent left public school teaching in Tennessee. The rate of teachers moving from ASD direct run schools to other schools in the state was 78 percent, which was more than five times the prior year's rate. All teachers moved from the CMO run schools to other teaching positions in Tennessee. The overall rate of leaving

ASD schools in the year when take over occurred was about three and one-half times as large as other Priority schools in Memphis (25%) and over twice as large as Memphis iZone schools in the take-over year (42%). Approximately, 19 percent of the teachers in Non-Priority schools in Tennessee left those schools in 2012-13, about 7 percent rate of teachers moved to other schools in the state.

This evidence indicates that ASD schools would begin operation with a teaching staff that was new to the schools, which is consistent with their theory of action. But where did these teachers come from?

#### *How does ASD staff their schools?*

As the 2012-13 school year began, 88 percent of the teaching staff in ASD schools was new to these schools. In the ASD direct

run schools, 84 percent of the teachers were new to the schools and in the CMO run schools, 100 percent were new to the schools. In the ASD schools, 57 percent

of the teachers came from other Tennessee public schools and 31 percent were either novice teachers or transferred in from other states or private schools. The ASD run schools hired more teachers with experience in other Tennessee public schools, filling 66 percent of their staff in that way. CMO run schools hired more teachers that were beginning teachers or did not have experience in Tennessee public schools, filling 68 percent of their teaching positions that way.

In 2012-13, Memphis iZone schools hired about 26

percent of their teachers from other public schools in the state, and 19 percent were new to teaching or new to teaching in the state public schools. The findings suggest that the ASD leaders and the CMOs, at least initially, pursued different strategies for finding the talent that they needed to raise performance in the schools. This begs the question, did they find the talent that they needed to turnaround their schools?

#### *Does ASD hire effective teachers?*

The best way to measure teachers' effectiveness is the extent to which they have been able to raise their students' test scores in the past, using value-added scores—in the case of Tennessee, TVAAS scores. These scores range from five for teachers who were very effective in raising their students' test scores to one for those who were ineffective in raising their

students' scores.

However, TVAAS scores are not available for new teachers, teachers who have not previously taught in Tennessee public schools, or those who did not teach in

tested subjects in tested grades. In this policy brief, we report the ratio of higher value-added teachers, those with a score of 4 or 5, to the lower value added teachers, those with a score of 1 or 2.

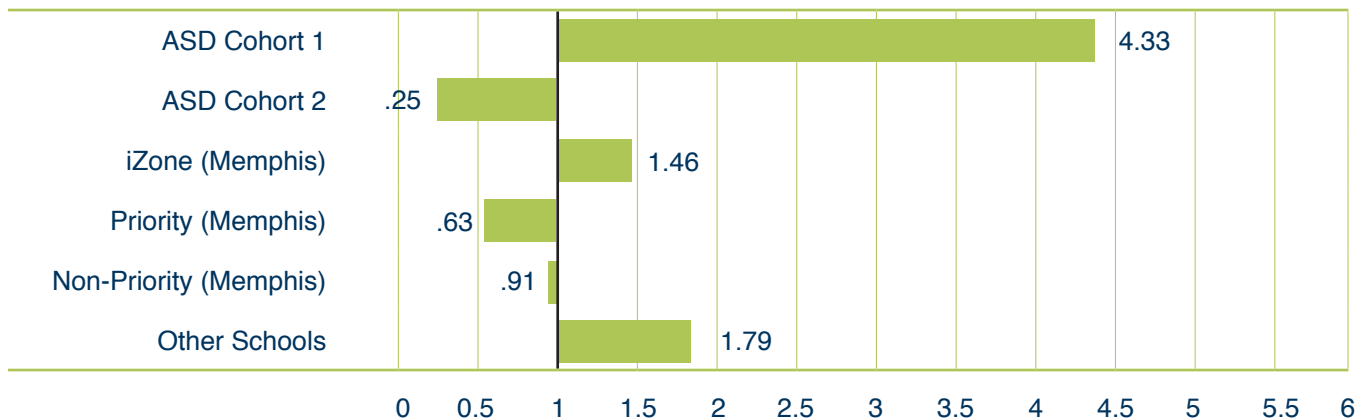
Teachers coming into the first cohort of ASD schools that opened in 2012 had a ratio of 4.3 on this measure, meaning the ASD schools hired more than four teachers with high value-added scores for every one teacher with a low value-added score (See Figure 1

*The findings suggest that the ASD leaders and the CMOs, at least initially, pursued different strategies for finding the talent that they needed to raise performance in the schools*

for the ratios of several groupings of schools). The ratio for Memphis iZone schools was 1.5, second best among the priority schools that we examined. For other Memphis priority schools, the ratio was 0.63, meaning they hired two teachers with higher scores for every three teachers with lower scores. It is telling that the

second cohort of ASD schools (starting in the 2013-14 school year) hired one teacher with higher value-added score for every four teachers with lower value-added scores for the 2012-13 school year, the year before they would be restarted.

**RATIO OF HIGH PERFORMING TO LOW PERFORMING TEACHER HIRES FOR THE 2012-13 SCHOOL YEAR**



The incoming teachers provide an indication of how effectively schools are hiring but the teachers who leave a school and the ones who stay are also important for future success. In 2012-13, 50 percent of the teachers retained in ASD schools had higher value-added scores and none had lower value-added scores. More teachers with lower value-added scores left ASD schools in 2012-13 than teachers with higher value-added scores.

The performance of leavers and stayers will take on greater importance as ASD schools operate for longer periods and make decisions about which teachers should be retained. In Tennessee’s schools that are not in the lowest performing group, the performance ratio of teachers that stay is 2.2 (for every 11 effective teachers that stay, five ineffective teachers stay) and

the ratio of those that leave is 1.6 (for every eight effective teachers that stay, five ineffective teachers stay), indicating that they retain more effective teachers than they lose.

Teaching experience is a second revealing indicator of the process of hiring talent necessary to successfully elevate students’ performance. On average, teachers are least effective in their first year of teaching and teachers’ effectiveness tends to grow through their first three to five years of teaching before leveling off (Henry, Bastian, & Fortner 2011; Henry, Fortner, & Bastian 2012). In the first cohort of schools opened by ASD in 2012, the incoming teachers averaged 3.5 years of experience, which indicates that these teachers were, on average, in the more effective portion of their developmental curves. By contrast,

Memphis iZone schools hired teachers who averaged 7.2 years of experience, which is similar to other Memphis priority schools. Non-low performing schools in Tennessee hired teachers who came in with 5.5 years of experience.

These findings suggest that ASD schools began by hiring effective teachers. In future reports, their success in retaining effective teachers will be examined.

## STUDENTS SERVED

For schools serving low-income families, high rates of student mobility present a constant challenge. To see if this is true for the ASD schools, we examine non-structural student moves (i.e., transfers of students that are unrelated to the entry or exit grade of a school). In addition to creating an educational challenge, students leaving or entering a school could provide a signal of whether the schools are perceived as effective by the community. For instance, if more students are entering than exiting, then a school may be perceived as a high quality school among families. Finally, these moves could have implications for schools' proficiency levels if proficient or non-proficient students are disproportionately moving into or out of a school. We explore these issues in this section.

*What is the overall student mobility rate into ASD schools, and are there more students moving in rather than moving out of these schools?*

For student turnover, we combine the percentage of students moving into a school between and within school years.<sup>1</sup> As displayed in Figure 2, for both cohorts of ASD schools, mobility rates were much higher than the rest of the state and Memphis non-priority schools, but similar to or slightly higher than other low-performing schools within Memphis. This suggests that low-performing schools (regardless of whether they are ASD schools or not) are generally serving transient students.

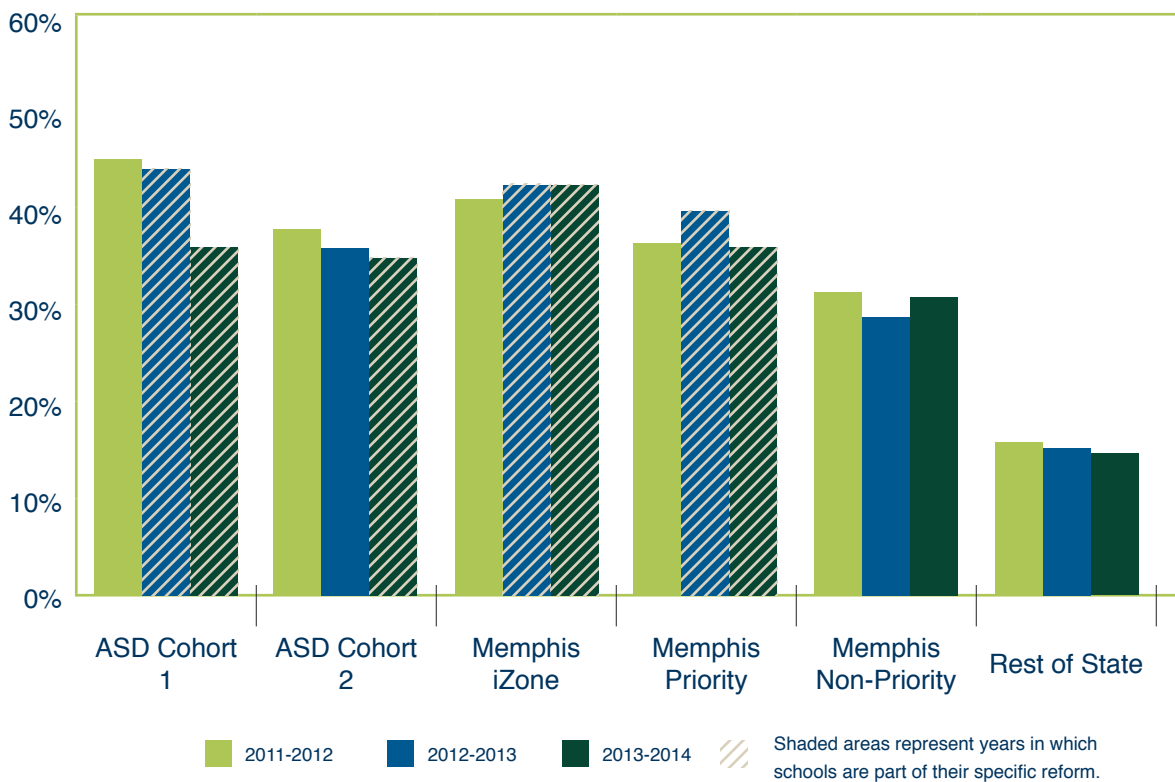
However, student mobility rates in ASD schools improved slightly once under the auspices of ASD. More specifically, for the first cohort of ASD schools in

*....for both cohorts of ASD schools, mobility rates were much higher than the rest of the state and Memphis non-priority schools, but similar to or slightly higher than other low performing schools within Memphis.*

the 2011-12 school year (the year prior to the schools being under the auspices of ASD), the mobility rate was 46 percent. This rate dropped to 37 percent by the 2013-14 school year (the second year under the auspices of ASD). For the second cohort, the rate was lower in the years prior to takeover and remained stable – 37 percent in the 2012-13 school year (the year prior to the schools being under the auspices of ASD) and 36 percent in the 2013-14 school year (the first year under the auspices of ASD).

<sup>1</sup> To calculate this, we added up the number of students who made a non-structural move across school years (was not there in the spring, and entered in the fall) plus the number of students who moved into a school within a school year and divided this total by the fall enrollment number.

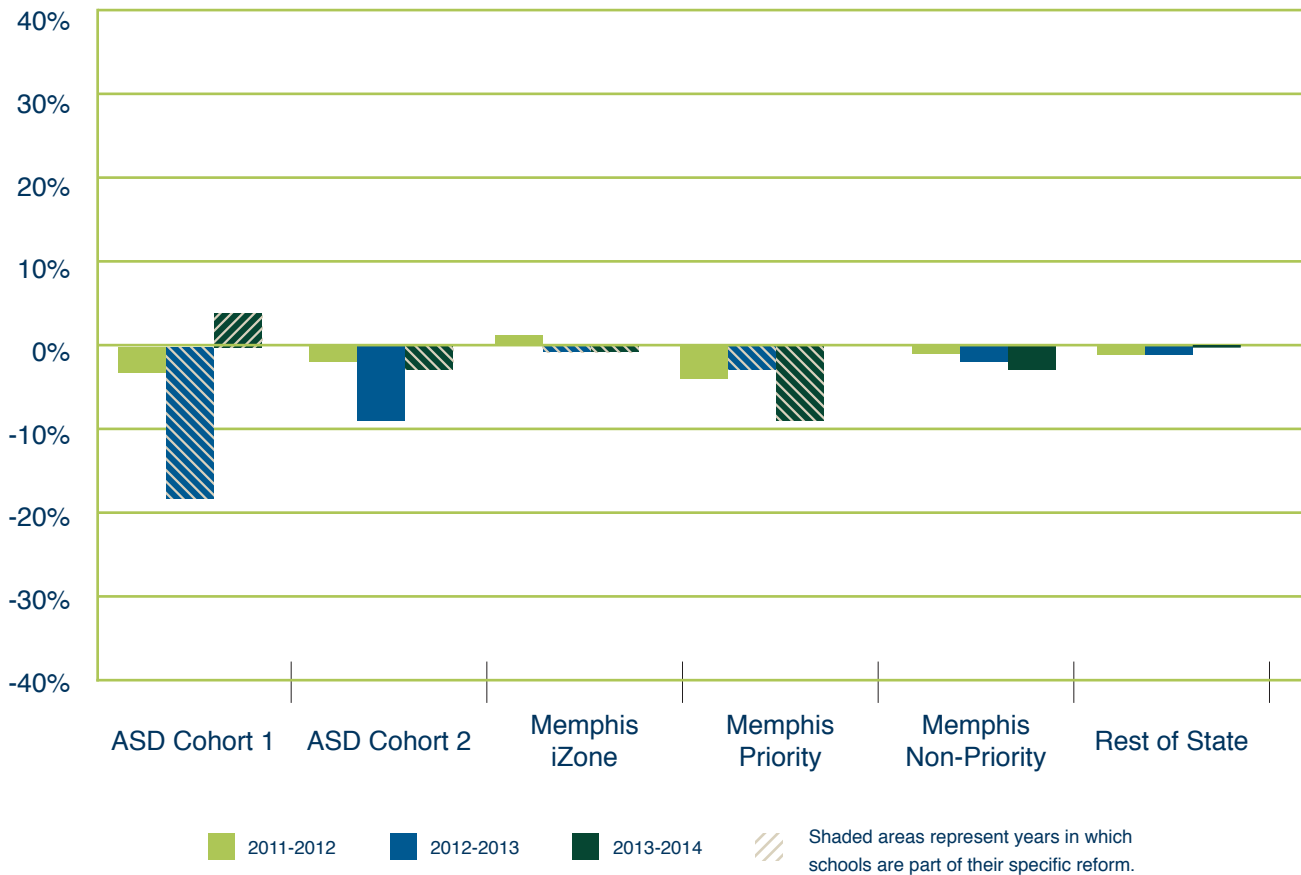
**FIGURE 2: WITHIN AND ACROSS SCHOOL YEAR MOBILITY INTO THE SCHOOL**



In Figure 3, we show whether the ASD schools, as well as other low-performing schools, had a net inflow or outflow of students. A net inflow of students could signal that these schools are viewed favorably among families, while an outflow may suggest the opposite. For the second cohort of ASD schools, there was not a significant difference in the net flow of students during the first year under the auspices of ASD. In contrast, in the first year under the auspices of ASD for the first cohort of ASD schools (2012-13), there was about a

18 percent net outflow of students, which was a larger net outflow than other low-performing schools. This may suggest that some families were concerned about the new management of these schools during the first year. However, by the 2013-14 school year, the trend reversed as there was a small net in migration for these schools. This may suggest that if there were some initial concerns by families, these concerns may have been alleviated by the second year under ASD control.

**FIGURE 3: NET MOBILITY - WITHIN AND ACROSS SCHOOL YEARS**



*Do the ASD schools serve a similar percentage of special education students? Do more low-performing students exit rather than enter an ASD school?*

Anytime schools are managed outside of a local school district, it is important to examine whether there is equitable access to these schools. Two populations of particular interest are special education and low-achieving students. Previous literature that examined the relative special education rates of charter schools as compared to traditional public schools has

suggested that charter schools serve a lower proportion of special education students (Zimmer et al., 2003; Winters, 2013). This raises concerns about equitable access. Because 11 out of the 17 ASD schools in the 2013-14 school year are managed by CMOs, it may be particular concern here as well.

However, in examining the data for the 2013-14 school year, ASD schools had a slightly higher percent of special education students (15.2%) when compared with the Memphis non-priority schools (13.2%) and



a slightly lower percent than the rest of Memphis priority schools (17.5%) and Memphis iZone schools (15.7%). In addition, the overall special education rate for all 17 ASD schools (15.2%) and the subset of 11 CMO managed schools (15.4%) were higher than the special education rate for charter schools statewide (11.3%). However, these rates varied by cohort of CMO schools as the first cohort had a rate of 18.3 percent compared to 12.1 percent for the second cohort. This suggests that access by special education students and the challenges of serving students with special needs vary by cohort.

Previously, charter school critics have raised concerns about whether charter schools would “cream skim” the

*ASD schools had a slightly higher percent of special education students (15.2%) when compared with the Memphis non-priority schools (13.2%) and a slightly lower percent than the rest of Memphis priority schools (17.5%) and Memphis iZone schools (15.7%).*

highest achieving students and “push out” the lowest achieving students (Ravitch, undated; Ravitch, 2010; Cobb & Glass, 1999; Zimmer and Guarino, 2013). To explore this issue in the context of the ASD, we examined whether there were more high-achieving students exiting relative to high-achieving students entering the ASD schools both within and across school years. To do this

we examined the percent of students that are proficient exiting relative to entering an ASD school as well as other low-performing schools in Memphis and the state as whole.<sup>2</sup> Overall, we found almost no difference in the percent of proficient students moving into and out of ASD schools within and across years, which was also true for other low-performing schools in Memphis and the state as a whole.

*Do the movements of low- and high-ability students have implications for how we interpret ASD schools’ performance?*

In future years, we will present an evaluation of the performance of the ASD schools using rigorous research designs. For now, some stakeholders are examining the changes in proficiency rates of the ASD schools relative to other low-performing schools. However, these analyses do not take into account possible changing populations within ASD or comparison schools. For instance, if more students moving into ASD schools were proficient than students leaving ASD schools, a school’s proficiency level could improve without any real change in the quality of the instruction. To explore this issue, we examined the relative performance of students moving in and out of schools and amortized this difference in performance across all tested students. In no case did the movements of students in and out of ASD schools either inflate or deflate the proficiency levels in the ASD schools or any other low-performing schools in Memphis by more than two percent. Therefore, to date student movements have had no effect on proficiency levels of ASD or comparison schools.

<sup>2</sup> Using proficiency as an indicator of student performance does not allow us to examine students in other parts of the distribution (e.g., students scoring much lower than proficiency levels). Therefore, we also standardized the test scores as z scores across all tested students in the states to have a mean of zero and standard deviation of one and reran the analysis comparing whether students entering had higher or lower z scores than students exiting. In general, the results were largely consistent with the results using the proficiency levels. Only in the first year of operation under the auspices of ASD for the first cohort of ASD schools did we see a meaningful difference—students moving in had, on average, about 0.15 of a standard deviation higher test scores in reading relative to students exiting. However, no difference was found by the second year of operation for these schools

## References

Cobb, C. D., & Glass, G.V. (1999). Ethnic Segregation in Arizona Charter Schools. *Education Policy Analysis Archives*, 7(1).

Henry, Gary T., Fortner, C. Kevin, and Bastian, Kevin C. (2012). "The Effects of Experience and Attrition for Novice High School Science and Mathematics Teachers" *Science* 335, 1118-1121.

Henry, Gary T., Bastian, Kevin C. and Fortner, C. Kevin (2011). "Stayers and Leavers: Early-Career Teacher Effectiveness and Attrition" *Educational Researcher* 40, 271-280.

Ravitch, D. (2010). *The Death and Life of the Great American School System: How Testing and Choice Are Undermining Education*. New York: Basic Books.

Ravitch, D. (undated). Florida Model Does Not Work, Letter to New Mexico State Legislators. Reprint Retrieved July 30, 2013, from <http://www.independentsourcepac.com/diane-ravitch-letter-to-new-mexico-legislature.html>.

Winters, M. (2013). "Why the Gap? Special Education and New York City Charter Schools" CRPE, Retrieved September 13, 2014 from: [http://www.crpe.org/sites/default/files/CRPE\\_report\\_speded\\_gap-nyc-charters\\_sept13.pdf](http://www.crpe.org/sites/default/files/CRPE_report_speded_gap-nyc-charters_sept13.pdf).

Zimmer, R., Buddin, R., Chau, D., Gill, B., Guarino, C., Hamilton, L.,...Brewer, D. (2003). *Charter school operation and performance: Evidence from California*. MR-1700. Santa Monica, CA: RAND.

Zimmer, R. & Guarino, C. M. (2013). Is there empirical evidence that charter schools "push out" low-performing students? *Educational Evaluation and Policy*, 35(4), 461-480.