A District Perspective Regarding Principal Preparation through the University of Tennessee Leadership Academy

Technical Report

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Overview

The Leadership Academy was launched in 2010 at the University of Tennessee (UT) Center for Educational Leadership with a goal of creating a rigorous and selective leadership preparation program combining classroom and clinical experience for aspiring principals (Tozer, 2014). This study evaluates the efficacy of the UT Leadership Academy through the lens of a partnering district; the Knox County Schools (KCS). Specifically, this study evaluates the ability of the Leadership Academy to create effective principals that serve and support KCS teachers and students.

The UT Leadership Academy was evaluated by Steven Tozer and Peter Martinez from the University of Illinois at Chicago (UIC) in February 2014. The Leadership Academy was praised for its quality but the study was largely focused on program inputs. This is not uncommon among existing evaluations of principal preparation programs as data sets tend to be small, principal evaluation data is not always available and there is little consensus as to how to best quantify the effect of school leaders (Hattie, 2009, Grissom, 2015, Grissom, 2016, Haller, 2016).

This study uses a mixed methods approach to evaluate the UT Leadership Academy from the district perspective. Unlike the 2014 study, this evaluation will be largely based on program outcomes, though context and input measures will also be considered. The outcome measures considered in this evaluation are related to placement and retention in leadership roles, quality of job performance (as measured by annual administrator evaluations) and student outcome data.

This study considers the efficacy of the UT Leadership Academy from the perspective of Knox County Schools only. Leadership Academy alumni may become effective leaders in organizations other than KCS. Such placements may be considered a success for the Leadership Academy, even if this particular study may not classify them as such. In this respect, this analysis is focused on quantifying the district's perceived value in the program rather than explicitly evaluating the quality of the Leadership Academy. Additionally, readers are cautioned against inferring causality between Leadership Academy participation and the outcomes. This analysis used quasi-experimental methods since admittance to the Leadership Academy was not a random event. Differences in outcomes could be driven by an inherent difference in quality between Leadership Academy alumni and administrators that did not attend the Leadership Academy.

Methodology

The initial cohort of KCS Leadership Academy fellows (LAFs) enrolled in the Leadership Academy during the 2010-2011 school year (SY1011), and the initial principal placement among Leadership Academy alumni occurred in SY1112. Therefore, SY1011 was considered the baseline year for this study. Although some data was available prior to SY1011, the quality of this data cannot be verified and therefore was used sparingly in the analysis.

Principal observation data was not annually collected until SY1112, in which two different systems were used to measure principal performance. These two systems scored performance on unrelated indicators and on different numeric scales. Only data collected through the Tennessee Educator Acceleration Model (TEAM) is included when SY1112 principal observation data is reported. Principal performance was measured under a consistent framework (TEAM) beginning in SY1213. Notation will be provided in years with missing data. Due to inter-rater differences, all administrator observation scores were normalized by observer and all analyses involving observation data controlled for years-of-experience.

Student outcomes were measured as changes in the percent of students who were proficient or advanced on state Reading/Language arts and Math assessments (combined). This student achievement data was available for all schools between SY1112 and SY1415. SY1617 student performance data was not available at the time of publication of this report. SY1516 data was not available for administrators at elementary and middle schools due to a cessation in state testing. Student performance in SY1516 is only considered for high school administrators. All data was baselined by subtracting the percent of students who were proficient or advanced in the year prior to any change in principal leadership. Baselining the data removed strong correlations between student achievement and school-level demographics. Data from SY1516 benchmarked student performance against a drastically different standard when compared to previous years. However, the correlation between SY1415 and SY1516 student achievement was very strong (Pearson's R = 0.973). SY1516 student achievement data was adjusted to be comparable to previous data by adding 30.83%. This percentage was the mean loss in student proficiency among the four high schools that had the same principal since the baseline year. Effects on student testing were estimated using Cohen's d effect size calculations.

Non-parametric testing was used to detect differences in observation ratings between treatment (Leadership Academy alumni) and control groups. The tests included the independent sample Kruskal-Wallis test and the independent samples median test. Power analysis was used to determine the alpha value required to detect small effect sizes (d=0.25) with a power of 80% using a t-test two sided limit. The N count for the power analysis was adjusted using a Pitman Asymptotic Relative Efficiency of 0.864.

Position and demographic data was generated by the KCS human resources database; NextGen. Leadership Academy applicant data and Leadership Academy tuition costs were provided by the University of Tennessee's Center for Educational Leadership. Observation data was collected from the archives of RANDA Tower, and state assessment data was obtained from downloads of Tennessee Department of Education (TDOE) official data sources.

Non-parametric testing was done using SPSS Release 24.0.0.0. Qualitative data was collected using Survey Monkey. Power analysis and qualitative analysis (wordclouds) were done using R version 3.4.0 running on R Studio 1.0.143. The R Packages used in the analysis include wordcloud v 2.5 and pwr 1.2-1.

Results

The first step in the analysis was to determine if the current program is compatible with the needs, investments and the desired outputs of the Leadership Academy.

The total estimated KCS investment in the leadership academy through the end of SY1718 was projected to be $5,463,919 (including Leadership Academy Fellows' salaries and benefits, budgeted mentor stipends and budgeted material costs). The mean cost per Leadership Fellow was slightly greater than $68,000. Because of the unique partnership between the University of Tennessee and KCS, UT waived $1,574.985 in tuition costs to KCS participants in the leadership academy (since SY1011). This represents a 22.4% reduction in the total cost of the program to the district.

Trends in available principal positions in Knox County were analyzed in order to determine if the Leadership Academy cohort size could meet the demand for principals in the district. The number of principal openings in the district since SY1112 is available in Figure 1. The mean number of new principals hired each year since SY1112 was 10.7. This provides some evidence that there is still a need for some kind of principal preparation program in KCS, and that the typical Leadership Academy cohort size of 10 is sufficient to meet the expected demand.

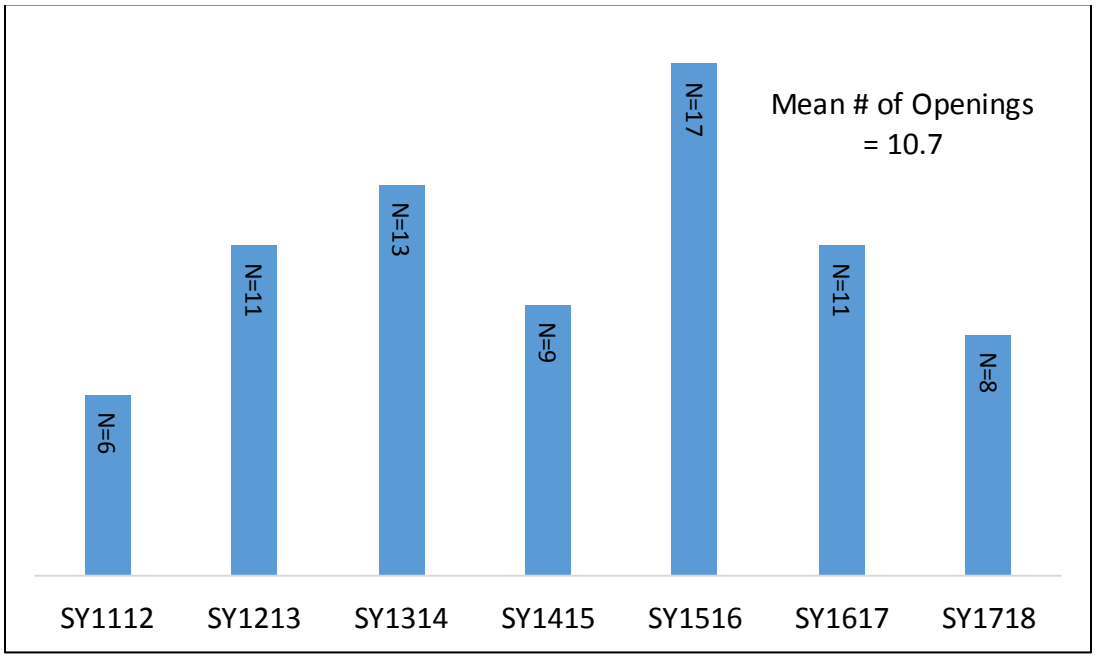

Figure 1: New Principal Openings in KCS (filled by non-experienced Candidates) by Year

Beyond a demonstrated need for a principal preparation program, the district also demonstrated a market of interested applicants. The number of applicants for each Leadership Academy cohort, and the associated acceptance rate for Leadership Academy Fellows is provided in Figure 2.

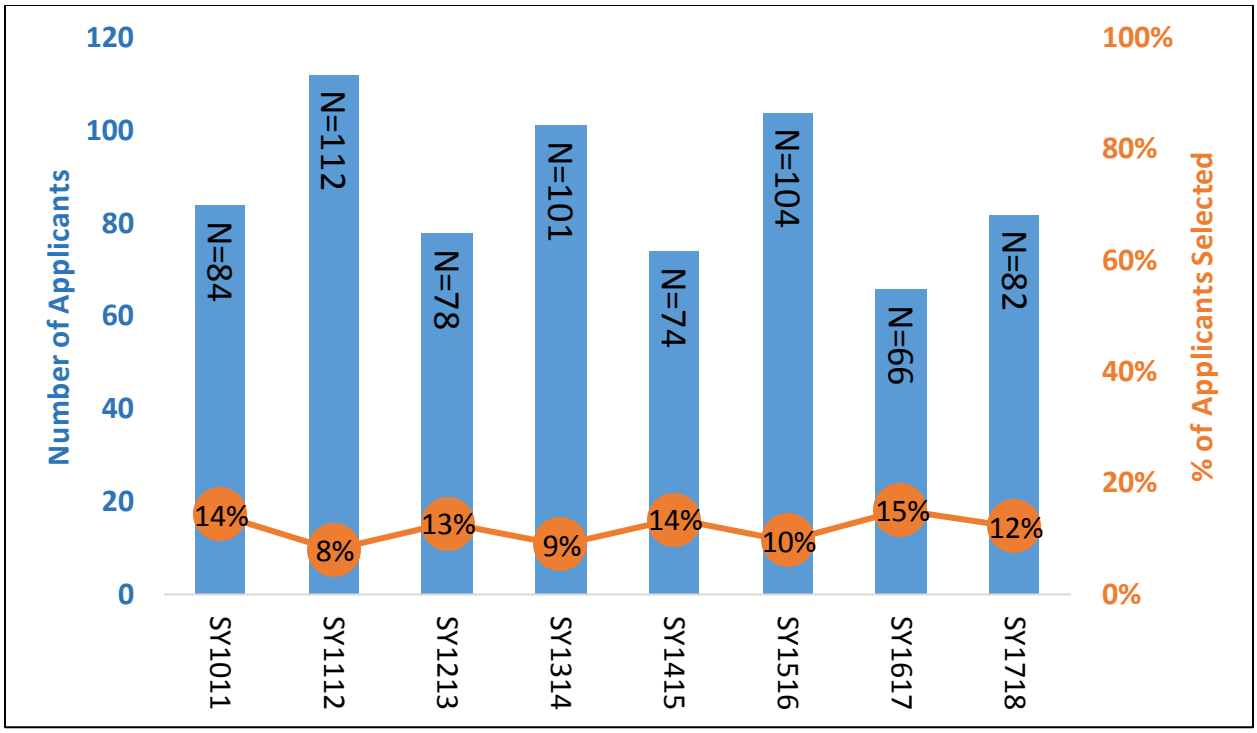

Figure 2: Leadership Academy Applicants and Acceptance Rates by Year

The demand for the Leadership Academy appears to have remained relatively high. The fewest number of applicants (66 in SY1617) was still far greater than the number of available positions, which has allowed enrollment in the Leadership Academy to remain selective.

Research regarding high-quality principal preparation programs notes the benefit of a strong partnerships between school districts and institutes of higher education (Tozer, 2014, Haller, 2016). Exemplar principal preparation programs, not unlike teacher preparation programs, require both a theory-based component (classroom instruction) and a clinical component (field experience) (Tozer, 2014). Qualitative data collected among the Leadership Academy alumni seemed to agree with this statement. When survey respondents were asked "What aspects of the Leadership Academy did you find most valuable?" a majority of respondents mentioned the Leadership Academy classwork at the University of Tennessee.

When the Leadership Academy was launched in SY0910, the KCS superintendent, Dr. James McIntyre, was an active participant in the Leadership Academy. Dr. McIntyre played a role in selecting the Leadership Academy fellows and served as a class instructor. In a telephone interview, Dr. McIntyre stated that his time working directly with the Leadership Academy Fellows allowed him to better understand their strengths and weaknesses and inform his decisions regarding their capacity to serve as principals. Dr. McIntyre left the district at the end of SY1415 to serve as the director of the UT Center for Educational Leadership (which

oversees the Leadership Academy) and as an associate professor at the University of Tennessee. Since then, interim KCS superintendent Buzz Thomas and current superintendent Bob Thomas have had an active role in selecting Leadership Academy fellows, but neither have served as an instructor. This may signal a shift in the how the district chooses to prioritize the Leadership Academy for the development of its administrators.

The success of the field experience component of the Leadership Academy is at least partially predicated on the ability to pair Leadership Academy Fellows with high-quality mentors. The TEAM observation scores of principal mentors were normalized and then ranked against all other principals in the district each year. The median rank for the principal mentors of the Leadership Academy fellows are provided in Table 1.

Table 1: Median Principal Mentor Ranks by Year

Year	Median Principal Rank of Mentor
SY1112*	22 out of 66 observed
SY1213	10.5 out of 81 observed
SY1314	14 out of 83 observed
SY1415	10 out of 83 observed
SY1516	19 out of 83 observed
SY1617	15.5 out of 85 observed
SY1718	Data Not Available

*No observation score for 33.3% of principal mentors due to evaluation on an incompatible rubric.

The results indicated that the majority of Leadership Academy fellows were placed with mentors who had a greater observation score than the median KCS principal. However, 10% of Leadership Academy fellows were placed with principals who were ranked in the bottom half of the district in the year in which they served as mentors. Qualitatively, alumni of the Leadership Academy who were promoted to principals were asked, "What adjustments would have the most positive impact on the Leadership Academy?" The most common responses were related to the placement of fellows with principal mentors. The district agreed to identify principals to serve as mentors who served at schools with above average student growth, exhibited strong leadership skills, and demonstrated a willingness and ability to serve as a mentor. LAF Perception data suggests that the quality of the LAF field experience could still vary depending on the assigned principal mentor, and that fellows did not universally feel that they were assigned to principal mentors in a purposeful manner by the district. The reason for (KCS-driven) specific fellow-mentor pairings could have been made more explicit to participants.

The data suggests a need for a KCS principal preparation program, and that the UT Leadership Academy possesses many of the required qualities of a successful program, but

how does Leadership Academy participation correlate with outcome data? An appropriate counterfactual population had to be identified in order to answer this question. Principals placed after SY1011 were classified as Leadership Academy alumni if they attended the Leadership Academy prior to their first placement as a principal. The counterfactual population consisted of new principals placed after SY1011 that did not attend the Leadership Academy. In some instances, outcomes measures were contrasted against experienced principals who were serving in their first years in a new school. The analysis assumed that the Leadership Academy alumni and counterfactual group had similar potential to be successful principals.

The Tozer evaluation cites the success of the leadership academy in placing 100% of alumni in any school-based administrative role (Tozer, 2014). An analysis of the administrator data indicates that the number of total administrators in KCS has increased by 44.3% since SY0910 (Table 2). Placement data by itself was therefore considered insufficient for judging the impacts of the Leadership Academy in KCS.

Table 2: Total Number of KCS Administrators by Year

Year	Principal	Asst. Principal	Leadership Fellows	Total Administrators
SY0910*	83	93	0	176
SY1011	83	90	12	185
SY1112	84	122	9	215
SY1213	84	143	10	237
SY1314	84	142	9	235
SY1415	86	145	10	241
SY1516	86	146	10	242
SY1617	88	148	10	246
SY1718	90	154	10	254

*Data is estimated based on available sources

The current data allows for closer examination of the placement of Leadership Academy fellows as principals (rather than assistant principals), which is the ultimate goal of the program. Table 3 contains the number of principal openings that were filled by Leadership Academy alumni in their first principal position (LAF), non-Leadership Academy alumni in their first principal position (non-LAF) and principals placed in a new school who had already served in that capacity at another school (experienced principals). Additionally, the table contains the proportion of new principal positions that were filled by LAFs and non-LAFs. Approximately 4 to 5 Leadership Academy alumni were placed as new principals each year (approximately 41% of all new principal openings).

Table 3: Principal Placement Statistics by Year

Category	SY1112	SY1213	SY1314	SY1415	SY1516	SY1617	SY1718	Mean
#LAF Placements	1	7	7	4	4	5	3	4.4
# non-LAF Placements	5	4	6	5	13	6	5	6.3
# Experienced Principal Placements	4	9	15	7	6	9	7	8.1
Total # New Placements	6	11	13	9	17	11	8	10.7
% New Placements - LAF	16.7%	63.6%	53.8%	44.4%	23.5%	45.5%	37.5%	40.7%
% New Placements - non-LAF	83.3%	36.4%	46.2%	55.6%	76.5%	54.5%	62.5%	59.3%

The data in Table 3 could be misleading if there were not enough qualified Leadership Academy alumni to fill the total number of principal vacancies. For example, if there were 10 elementary principal openings in a given year, but only 4 Leadership Academy alumni with elementary experience to fill those vacancies, the percentage of new principals that were LAFs could not exceed 40%. The data in Table 4 contains the ratio of Leadership Academy alumni with grade-level administrative experience (as either an assistant principal or as a Leadership Academy fellow) to the number of principal openings within each grade level. There were no instances where this ratio was less than 1. There were at least as many Leadership Academy alumni available to be placed in a principal position as there were open principal positions in each year.

Table 4: Ratio of Leadership Academy Alumni to New Principal Openings by Grade Level

Grade Level	SY1112	SY1213	SY1314	SY1415	SY1516	SY1617	SY1718
Elementary	3	1.3	1.1	2.2	1	3	5
Middle	5	3	3.5	4	2.3	4	3
High	1.3	6	4.5	4.5	11	5	NA

The percentage of Leadership Academy alumni who were promoted to principal and were no longer serving as a KCS principal at the beginning of SY1718 was 22.2%. For comparison, the percentage of new principals appointed since SY1011 who had not attended the Leadership Academy and were no longer employed as a KCS principal was 20.0% (excluding retirees). Chi-squared testing indicated that we failed to reject the null hypothesis that there was no difference between attending the Leadership Academy and no longer serving as a principal in the district (p value = 0.796). There was little evidence to suggest that Leadership Academy alumni who were promoted to the principal role were more or less likely to be retained by the district.

Table 5 contains the percentage of each Leadership Academy cohort that had been placed in a principal position prior to the commencement of the SY1718 academic year. Additionally, the table contains the mean number of years between the end of the Leadership Academy fellowship and the initial placement as a KCS principal.

Table 5: Cohort Placement Rates and Mean Years to Placement

Cohort	Cohort N	Principal Placements	% of Cohort Placed	Mean Years To Principal Placement	% of Cohort Not Placed within 2 Yrs.
SY1011	12	11	91.7%	1.8	50.0%
SY1112	9	7	77.8%	1.6	55.6%
SY1213	10	7	70.0%	2.1	70.0%
SY1314	9	3	33.3%	0.3	66.7%
SY1415	10	2	20.0%	1.0	80.0%
SY1516	10	0	0.0%	-	NA
SY1617	10	0	0.0%	-	NA
SY1718	10	0	0.0%	-	NA
All	80	30	-	1.6	-

The mean number of years from the end of the Leadership Academy fellowship and the initial principal placement was 1.6 years (when considering all cohorts). The last column in Table 5 contains the percent of each cohort that had been placed as a principals within 2 years. The percentage of Leadership Academy alumni not appointed to the principal position has generally increased longitudinally. Placement percentages were not calculated for the SY1516, SY1617 and SY1718 cohorts because 2 years have not yet elapsed since the end of their Leadership Academy experience.

The increased mean time between the end of the Leadership Academy and the initial principal placement has led to an increase in the number of Leadership Academy alumni in the assistant principal (AP) role (see Figure 3). At all grade levels there was an influx of Leadership Academy alumni to the AP role that was not balanced by the outflow of Leadership Academy alumni to the principal role. This may be an indicator that cohort sizes, the selection process or the intentionality of administrative placements could be adjusted.

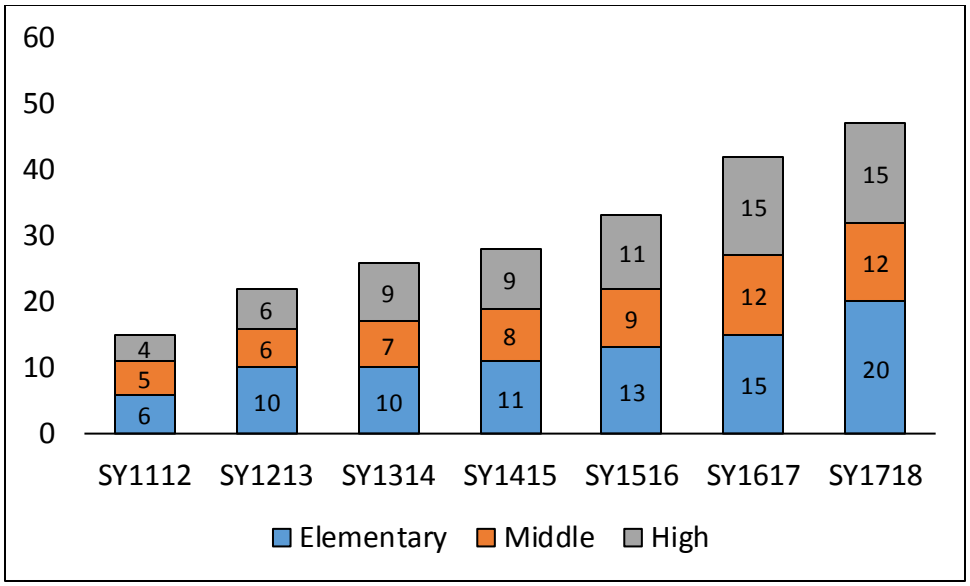

Figure 3: Number of Leadership Academy Alumni in AP Roles

Thirty (30) Leadership Academy alumni had been placed in the principal role in KCS. Twelve (12) of these Leadership Academy alumni were assistant principals prior to attending the Leadership Academy. Sixty percent (60%) of the principal appointments among Leadership Academy alumni were from LAFs who had no previous experience as an administrator (prior to their involvement in the Leadership Academy). Approximately 70% (68.1%) of principals placed since SY1011 who had not attended the Leadership Academy had never applied to be a Leadership Academy fellow. This may provide some evidence that the Leadership Academy was serving as an alternative pipeline to identifying future principals.

The Leadership Academy admitted a larger proportion of minority candidates when compared to the pool of KCS administrators. Although it was never a published goal of the Leadership Academy, most district staff viewed the Leadership Academy as a program to facilitate increases in the number of minority administrators. The trends regarding the number and percentage of minority administrators (including Leadership Academy fellows) in KCS schools is found in Table 6.

Table 6: KCS Administrators by Race and Year

	SY1011	SY1112	SY1213	SY1314	SY1415	SY1516	SY1617	SY1718
Asian			1					
Black or African American	30	35	36	38	35	36	37	38
Non-White	30	35	37	38	35	36	37	38
White	155	180	200	197	206	206	209	216
% Admins Non-White	16.2%	16.3%	15.6%	16.2%	14.5%	14.9%	15.0%	15.0%
% Admins White	83.8%	83.7%	84.4%	83.8%	85.5%	85.1%	85.0%	85.0%

Although the number of non-white administrators serving in KCS increased from SY1011 to the beginning of SY1718, the proportion of non-white administrators remained relatively constant. The data was disaggregated by administrator position to determine the longitudinal trends in principal demographics during the same time period. The trends in the principal demographics are available in Table 7.

Table 7: KCS Principals by Race and Year

	SY1011	SY1112	SY1213	SY1314	SY1415	SY1516	SY1617	SY1718
Black or African American	12	11	12	15	13	12	10	8
White	71	73	72	69	73	74	78	82
% Principals Non-White	14.5%	13.1%	14.3%	17.9%	15.1%	14.0%	11.4%	8.9%
% Principals White	85.5%	86.9%	85.7%	82.1%	84.9%	86.0%	88.6%	91.1%

The number and percentage of non-white principals remained relatively constant. However, since SY1011 12 non-white principals have been appointed in KCS. Seventy-five percent (75%) of the non-white principals appointed were Leadership Academy alumni. Among the minority Leadership Academy alumni placed as principals, 55.5% did not have administrative experience prior to placement in the Leadership Academy (compared to 61.9% for white Leadership Academy alumni). The principal placement rates among minority and non-minority Leadership Academy alumni were not significantly different. Approximately 40% (40.9%) of minority alumni (between SY1011 and SY1617) had been appointed principals, whereas 43.8% of white alumni had been appointed principals.

One research question investigated in this study was, "has the proportion of minority principals increased during the district's participation in the Leadership Academy?" Although the answer to that particular question is "no", the majority (75%) of non-white principals appointed in this timeframe were Leadership Academy alumni.

An independent samples Kruskal Wallis test and independent samples Median Test was used to determine if there were statistical differences in the in-coming student achievement

among schools in which different types of principals were appointed between SY1112 and SY1516. The results indicated that we failed to reject the null hypothesis that the median school-level student achievement (the percent of students who were proficient or advanced) in the year before a principal change was no different among schools receiving an experienced principal moving to a new school (experienced), a Leadership Academy alumnus (LAF) in their first principal position and a new principal who had not attended the Leadership Academy (non-LAF) (N=62, Test statistic = 0.323, sig = 0.851). We also failed to reject that null hypothesis that the distribution of school-level student-achievement was no different in the year prior to receiving an new experienced principal, first year LAF or first year non-LAF (N=62, Test Statistic = 1.155, sig = 0.561). Boxplots displaying the distributions of school-level achievement in the year preceding a principal change are available in Figure 4.

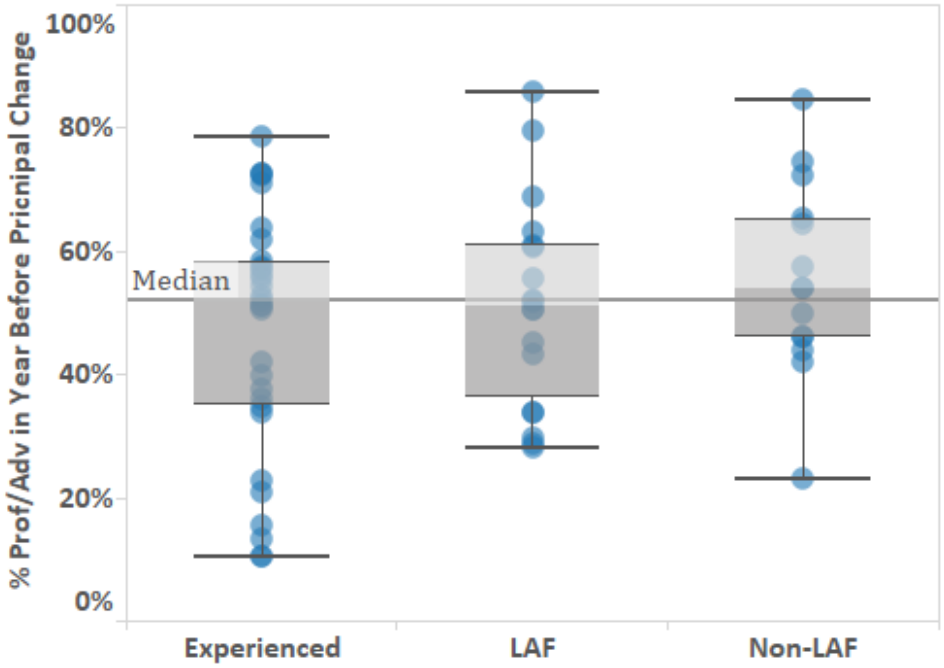

Figure 4: Prior Student Achievement at Schools with Different Types of Administrator Placements

We examined if the schools receiving different types of principals had different multi-year trends in student achievement. The change in student achievement from two years before a principal change to one year before a principal change was determined for the schools receiving a new principal between SY1112 and SY1516. Schools were removed from the analysis if more than one principal served the school in the two years preceding the next change in leadership. Power analysis indicated that the critical alpha for rejecting the null hypothesis was $\alpha=0.20$.

The results indicated that we failed to reject the null hypothesis that the distribution of changes in student achievement was no different among schools receiving different types of new principals (N=49, Test statistic = 1.487, sig = 0.475). However, we can reject the null hypothesis that the medians were no different among schools receiving various types of principals (N=49, Test statistic = 5.232, sig=0.073). Visual inspection indicates that the schools in which Leadership Academy alumni (in their first principal placement) were placed had a higher median change in achievement in the years preceding their appointment (Figure 5).

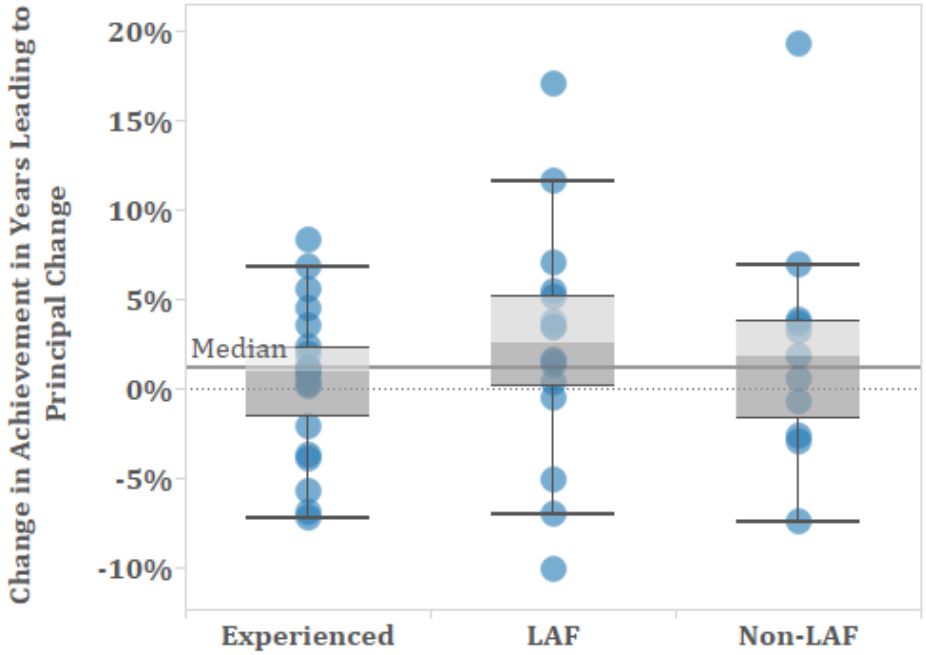

Figure 5: Change in Achievement in Years Leading to a Principal Change

There was little evidence to support a claim that Leadership Academy alumni were more likely to be placed in high-needs schools within the district. The preponderance of evidence indicates that there were few significant differences between the schools in which an experienced principal, a Leadership Academy alumnus, or first-year principal who had not attended the Leadership Academy were placed.

A separate analysis was done to estimate how different principals impacted student achievement after the new principals were appointed. Contrast testing was done to determine the effect size (in standard deviation units) in student outcome data after a principal change. Data was not considered beyond the second year after a principal change because of the low number of data points available. The results of the contrast testing is shown in Table 8.

Table 8: Changes in Student Achievement after Principal Appointment

Time	Metric	Principal Type			Cohen's D		
		Exp. Princ.	LAF	non-LAF	Contrast: LAF-non LAF	Contrast: LAF-Exp. Princ.	Contrast: non LAF-Exp. Princ.
1 Year After Change	Mean change in student achievement	-1.10%	-1.22%	-2.93%			
	N	29	18	15	0.269	-0.026	-0.311
	Stdev change in student achievement	0.047	0.049	0.078			
2 Years after Change	Mean change in student achievement	-1.28%	-0.72%	-3.63%			
	N	22	15	12	0.355	0.074	-0.315
	Stdev change in student achievement	0.071	0.083	0.081			

The size of the Cohen's d indicates that the difference in mean change in student achievement between Leadership Academy alumni and non-Leadership Academy alumni was small in the principal's first year and was small-to-medium in the second year. In both years, the mean change in student achievement favored schools in which Leadership Academy alumni were placed as principals. The mean change in student achievement when a Leadership Academy alumnus was placed in their first principal position was nearly equivalent to the mean change in student achievement that occurred when an experienced principal was moved to a new school.

It should be noted that the majority of schools experienced a decrease in the percent of students who were proficient or advanced whenever a new principal was appointed, regardless of the type of principal. Between SY1112 and SY1516, 62% of schools experienced a decrease in student achievement when an experienced principal was appointed to fill a leadership vacancy. When a Leadership Academy alumni was placed in their first principal position, 55.6% of schools experienced a decrease in student achievement. When a non-Leadership Academy alumni in their first year as a principal was appointed to a school, 60% of schools experienced a decrease.

The effect of a principal on student achievement may be diluted since teachers are generally considered to have greater impact on student learning (Hattie, 2009). Therefore, TEAM observation data was included in the analysis to detect differences in the perceived performance of principals. Normalized (intra-observer) observation data was analyzed using independent samples Median tests and independent samples Kruskal Wallis tests. Power analysis indicated that $\alpha=0.20$ allowed for the detection of small effects.

We rejected the null hypothesis that the median normalized observation score was no different between principals who attended the Leadership Academy (LAF) principals who did not attend the Leadership Academy (Non-LAF) in their 1st year in the role (N=58, Test statistic=4.462, sig=0.065). We also rejected the null hypothesis that there was no difference in the distribution of normalized observation scores among 1st year principals (N=58, Test statistic=7.317, sig=0.007). Visual inspection indicates that Leadership Academy alumni generally had the more favorable results (Figure 6).

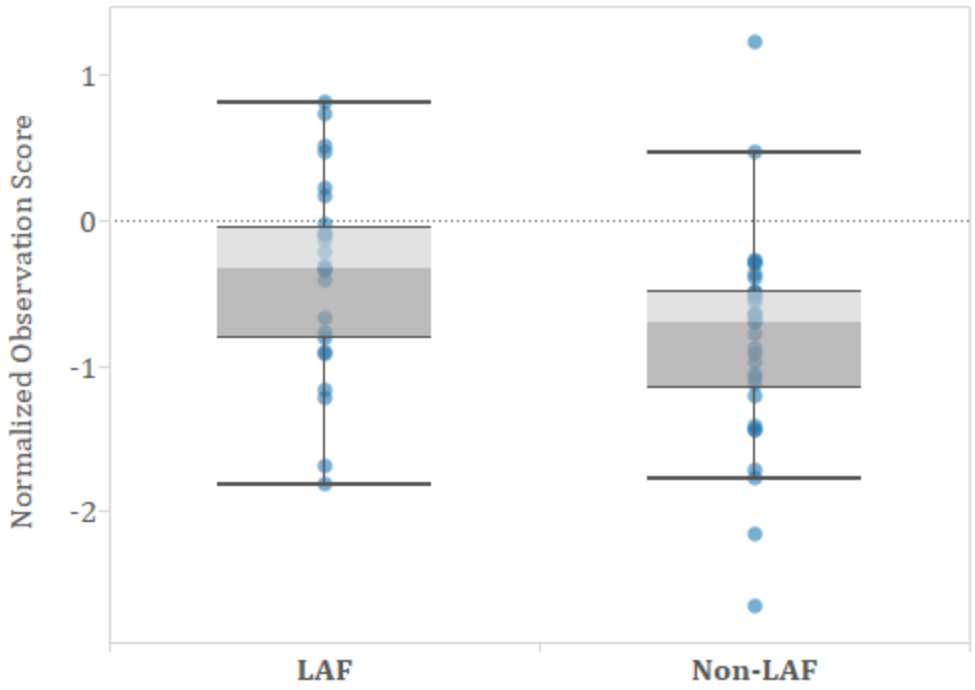

Figure 6: Normalized Observation Scores, 1st Year Principals

The same tests were applied to principals in their second year. Again, we rejected the null hypothesis that there was no difference in median (normalized) observation scores of Leadership Academy alumni and non-Leadership academy alumni in their 2nd year as a principal (N=54, Test statistic=2.761, sig=0.166). We also rejected the null hypothesis that the distribution of (normalized) observation scores was no different for Leadership Academy alumni when compared to non-Leadership Academy alumni in their 2nd year as principals (N=54, Test statistic=1.934, sig =0.164). Visual inspection indicates that Leadership Academy alumni generally had the more favorable results (Figure 7).

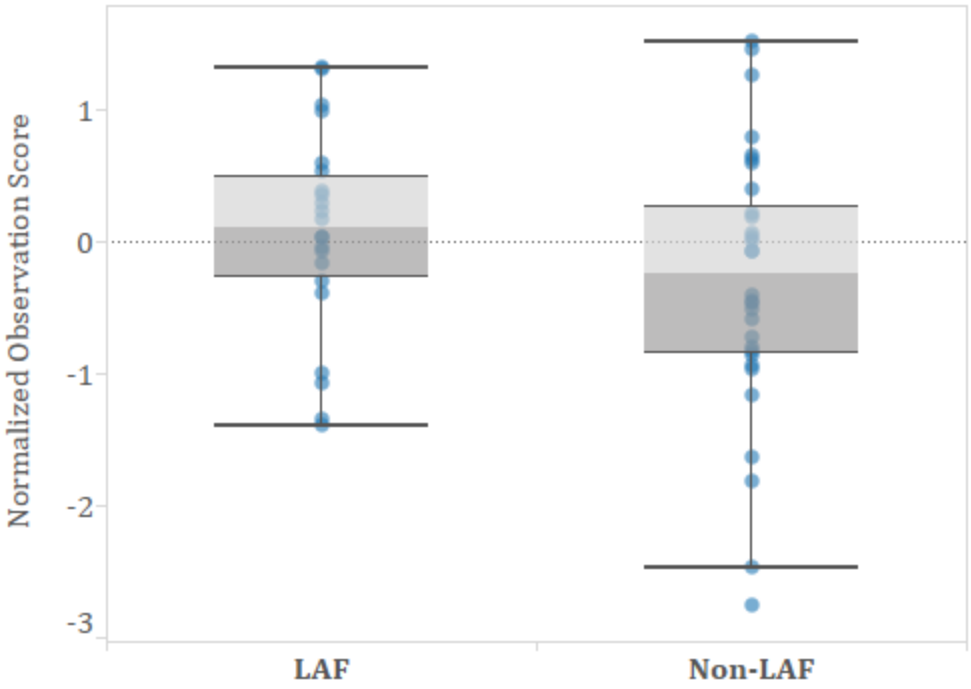

Figure 7: Normalized Observation Scores, 2nd Year Principals

The same analysis was applied to the KCS assistant principals (APs). The AP observation scores were also normalized (by observer). Some APs were observed by principals who conducted very few other observations. The AP sample therefore was impacted by attrition because some scores could not be normalized. Leadership Academy fellows were not observed using the KCS administrator rubric while they are enrolled in the Leadership Academy. Therefore, comparisons were made among Leadership Academy alumni and non-Leadership Academy alumni APs in their second and third years of service. Power analysis indicated that α=0.20 allowed for the detection of small effects.

We failed to reject the null hypothesis that the median (normalized) AP observation scores were no different for APs who attended the Leadership Academy when compared to APs who did not attend the Leadership Academy in their 2nd year as an AP (N=115, Test statistic=0.666, sig=0.414). We rejected the null hypothesis that there was no difference in the distribution of (normalized) observation scores among Leadership Academy alumni and non-Leadership Academy alumni who were in their 2nd year as an AP (N=115, Test statistic=2.208, sig=0.137). Visual inspection indicates that the normalized observation scores of Leadership Academy alumni were more dispersed in comparison to APs who had not attended the Leadership Academy.

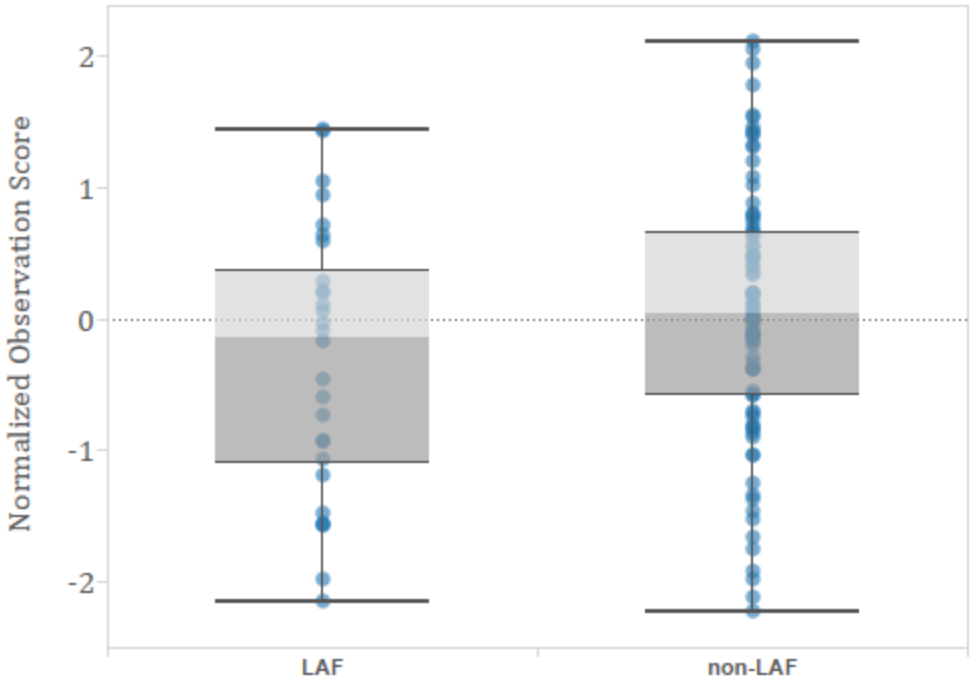

Figure 8: Normalized Observation Scores, 2nd Year Assistant Principals

We rejected the null hypothesis that the median (normalized) AP observation scores were no different for APs who attended the Leadership Academy when compared to APs who did not attend the Leadership Academy in their 3rd year as an AP (N=91, Test statistic=4.912, sig=0.050). Visual inspection indicates that non-Leadership Academy Assistant principals had a higher median normalized observation score in their 3rd year as an administrator. Additionally, we rejected the null hypothesis that there was no difference in the distribution of (normalized) observation scores among Leadership Academy alumni and non-Leadership Academy alumni who were in their 3rd year as an AP (N=91, Test statistic=2.024, sig=0.155). Visual inspection indicates that the normalized observation scores of non-Leadership Academy alumni continued to be more dispersed in comparison to APs who had attended the Leadership Academy.

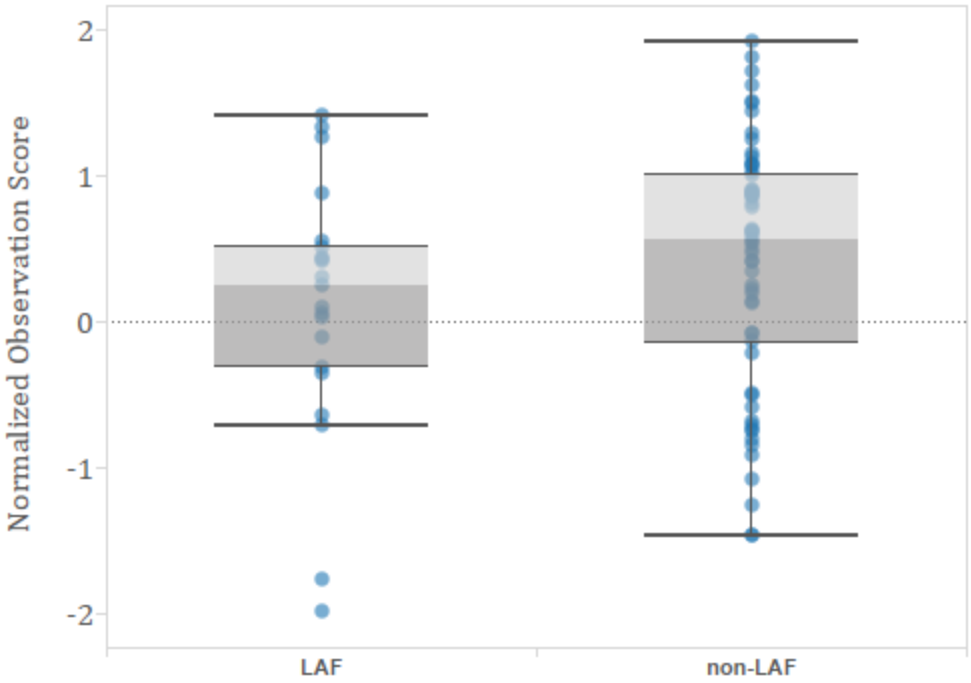

Figure 9: Normalized Observation Scores, 3rd Year Assistant Principals

The outcome data provides some evidence that the Leadership Academy alumni that were placed in the principal role were more likely to be associated with positive outcomes in observation scores and student achievement. However, the Leadership academy alumn i that have not been appointed to the principal role were generally rated as well or worse than assistant principals that had not attended the Leadership Academy and had the same amount of administrator experience.

Conclusions & Considerations

This analysis of the University of Tennessee's Leadership Academy provides evidence of the academy's strengths and weaknesses for serving as an administrator development program. There was evidence that some kind of administrator preparation program could be beneficial for the Knox County Schools. KCS averaged 10.7 principal openings between SY1112 and SY1718 and the total number of administrators has increased in the district by 46% since SY0910.

The Leadership Academy met common requirements cited in research regarding characteristics of quality leadership preparation programs. Demand for the University of Tennessee's leadership academy was strong, which allowed the program to be selective when considering admittance. Leadership Academy alumni were given full-time field experience and were generally paired with highly rated principals to serve as mentors. The Leadership Academy also leveraged classwork in order to provide a theoretical background

to fellows. The Leadership Academy alumni who had been promoted to principals within KCS specifically identified the Leadership Academy as what best prepared them to be principals (87.5% of those responding to survey items).

KCS administrator observation scores indicated that principals who attended the Leadership Academy had better ratings than principals who had not attended the Leadership Academy (after controlling for years of administrator experience). The median TEAM observation score for 1st year principals who had attended the leadership academy was greater than the median observation score of 1st year principals who did not attend the leadership academy and the effect continued into the 2nd year.

There was evidence of the positive impact of Leadership Academy alumni principals had on student outcomes. The majority of all principal changes led to short-term decreases in student achievement. The median decrease in student achievement was less in the 1st year in which a Leadership Academy alumni served as a new principal when compared to new non-Leadership Academy principals. The change in student achievement when Leadership Academy alumni were placed in their first principal role was similar to the changes when an experienced principal was moved to a new school. This effect continued into the 2nd year of principal performance.

There was evidence that the Leadership Academy was most successful in providing a pathway to the principal role for staff not currently serving as school-based administrators. 60% of all of the principals appointed from Leadership Academy cohorts were not school-based administrators prior to their enrollment in the Leadership Academy. This provided some evidence that the Leadership Academy could serve as an effective first step to the principal position for staff with no prior school-based administrative experience.

Despite these programmatic bright spots, there are also areas in which the Leadership Academy fell short in terms of developing the KCS leadership pipeline. The early evaluations of the Leadership Academy concluded that the Leadership Academy was poised to "produce outstanding school principals on a reliable and predictable basis, not as a rare exception to the rule" (Tozer, 2014). Although there is evidence that the Leadership Academy alumni placed as principals generally outperformed non-Leadership Academy alumni, only 41.3% of all new principal openings since SY1112 were filled by Leadership Academy alumni (average of 4.4 Leadership Academy alumni placed per year). Additionally, the number of Leadership alumni that were placed as principals within 2 years of finishing the Leadership Academy has generally decreased, providing some evidence that the district's willingness to promote Leadership Academy alumni to the principal role may be decreasing with time.

Although there was evidence that Leadership Academy alumni serving as principals were rated better than principals who did not attend the Leadership Academy, there was no evidence to extend this finding to Leadership Academy alumni that remained in the assistant

principal role. There was no statistical difference in the median TEAM observation score of assistant principals who had attended the Leadership academy versus the median TEAM observation score of assistant principals who did not attend the Leadership Academy in the year after the fellowship ended. The median observation score is actually lower for Leadership Academy alumni in the second year after the fellowship ended when compared to assistant principals who did not attend the leadership academy.

Current research identifies the importance of strong partnerships between the districts and higher education intuitions for principal preparation programs. Historically, there was active participation between the highest levels of leadership at both KCS and the UT Center for Educational Leadership. The two most recent KCS superintendents, however, have taken a less active role in the Leadership Academy. This may lead to misalignment between the program curriculum and district needs. Programs that operate without such strategic cooperation and alignment are not likely to produce desired results. Strong partnerships will be especially important if KCS hopes to better achieve its secondary goals, such as developing leadership pipelines for high-needs schools. The staff at the Center for Educational Leadership feel that the structures for collaboration between UT and the district exist. The district should make deliberate attempts to utilize feedback mechanisms to help tailor the program to meet district goals.

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