

RTA/MAF GRANT REVIEW

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EXECUTIVE SUMMARY

INTRODUCTION

The Kentucky Department of Education (KDE) has prioritized early learning in its development of strategic plan priorities and goals. Key components of the early learning supports provided by KDE are the Read to Achieve (RTA) and Math Achievement Fund (MAF). These grants have been in existence for more than a decade and currently serve approximately 300 schools and 100 schools respectively.

The Department is seeking to gain a better understanding of how the grants are being implemented and assess results of these efforts. This set of analyses used data from the most recent cohorts of RTA and MAF grant-receiving schools to paint a picture of the current state of grant implementation.

This report has been developed to provide insight on grant implementation and is organized in the following sections:

- Part 1: Grant Distribution and Recipients
- Part 2: Grant Spending
- Part 3: Intervention Teachers
- Part 4: Intervention Students

KEY FINDINGS

In the most recent round of grant awards, for both RTA and MAF, grants have not been directed towards schools with low grade 3 performance or high levels of underserved students. The grant funds also have largely not been used to provide schools with specialized intervention staff or training opportunities for intervention teachers. This lack of investment in the neediest schools or instructor development may make it difficult to realize grant goals. This is suggested by 2018-19 MAF student assessment data, which does not show accelerated or robust progress needed for intervention students to catch up to their peers.

PART I: GRANT DISTRIBUTION AND RECIPIENTS

This section looks at the 2018-19 cohort of RTA and MAF grant-receiving schools and seeks to understand how the RTA and MAF grants have been distributed.

The analysis identified several important insights about how the RTA and MAF grants have been awarded and provides direction for improvements in grant implementation.

- **Neither grant seems to have been awarded based on a school's academic or student population needs.** These findings suggest school need may have been defined and considered using other criteria, or may not have been considered at all. It could be that grant awards have greatly depended on which schools applied for the grant, and schools with the most need may not be the schools most often submitting an application. As such, an opportunity exists to better align the grant application and award process

with state goals such as achievement gap closure by targeting schools most in need of support.

- **In both grants, the history of a school's past grant receipt may have influenced whether or not a school received a grant in 2018-19.** The grants saw opposite results in this area with 2018-19 RTA schools more often having received the grant for more than 10 years and MAF schools more often having received grants for less than five years. This raises the question of the purpose of the grants: are they long-term supports aimed at sustaining change, or are they short-term catalysts that seek to kick-start change? This may also present an opportunity to better align the grants to agency goals. However, due to the long history of RTA grant receipt for many schools, changing the grant structure may result in large challenges for schools in implementing reading interventions in the future.
- **A district's ability to obtain grants may have influenced which schools received a grant.** Both grants showed clustering at the district level, with some districts receiving a higher concentration of grants than others. While this finding can point to systematic improvement efforts made by some districts that incorporate the grant, it also raises the question as to whether the grant application and implementation processes raise barriers for some schools that may be good candidates but that may not have adequate resources to take advantage of the grant.

PART 2: GRANT SPENDING

For this analysis, expenditure data from KDE's MUNIS system was collected and analyzed for the 2018-19 grant schools (these expenditures were unaudited at the time of analysis). The aim of this section is to develop an understanding of how schools have spent grant funds.

The section provides details on grant schools' spending decisions and the potentially competing priorities that schools must weigh when allocating grant money for intervention program components.

- **Schools generally used the full grant allocation in 2018-19.** In this most recent year, the grant funds seemed to be fully utilized and spent on the categories stipulated by the intervention program.
- **For both grants, the vast amount of grant spending in 2018-19 went to expenses associated with acquiring staff such as salary and benefits.** Because the majority of schools spent the full grant amount in this area, this may indicate schools' main grant priority has been obtaining the necessary staff to provide intervention services. Such heavy weighting of this component of the intervention program could point to trade-offs faced by schools: if the grant amount generally only covers enough to hire an interventionist, there may be little room to invest grant funds in other areas such as training.
- **Grant money was least often spent on training and staff development in both grants compared to other program components; when money was spent in this area, it also saw the lowest median spending amounts for both grants.** While schools may be spending other money to train the grant interventionist, the recorded RTA and MAF expenditures seem to prioritize staff training to a lesser degree than other categories as measured by spending decisions. Because most money is spent on obtaining staff as opposed to training, this could point to an important issue affecting the quality of intervention

delivery – who schools hire is of great importance. The level of interventionist expertise may rely heavily on the training and credentials these teachers bring into the position.

PART 3: INTERVENTION TEACHERS

This section explores characteristics of the RTA and MAF intervention teaching force as defined by years of teacher experience, type of teacher credentials, and rate of teacher retention.

EPSB and MUNIS data from 2014-15 to 2017-18 school years were used for the analysis. Findings provide guidance around how this resource might be better leveraged to achieve grant goals.

- **Intervention teachers in both grants were well-experienced and held the necessary grade-level credentials for the population they serve. However, these teachers largely did not hold credentials that indicated specialized training in content-specific instruction (reading/literacy in the case of RTA and mathematics for MAF).** This may point to an area of need when paired with the results from *Part 2: Grant Spending*. Teachers may be entering the interventionist position with little content-specific expertise and may also not be receiving robust training within the provision of the grant.
- **While teacher turnover from year to year was at or below the state average, over the course of four years, both grants lost a large portion of their teaching force – over one-third for RTA and more than half for MAF.** Coupled with the training issue above, this loss of capacity may make maintaining an experienced and expert intervention staff even more difficult. Additionally, the relationships with students and ability to provide a continuity of services from year to year may be more challenging when new staff come in and must get up to speed on students' needs and progress.

PART 4: INTERVENTION STUDENTS

This section uses 2018-19 student-level data to explore the growth of MAF intervention students and the relationship between growth and the amount of intervention students received from the MAF grant.

These results provide insight on the grant's connection to student outcomes and as well as to elements of grant implementation discussed in the previous sections.

- **Students receiving intervention services, on average, made one year's worth of progress. While these gains are significant and in the right direction, they do not show the amount of accelerated growth needed for the students targeted by the MAF grant.** This further underscores findings in previous sections of the need for high-quality interventionists. Limited professional development opportunities or lack of specialization in the content area may make it difficult for interventionists to provide high quality instruction needed to achieve accelerated growth. Additionally, these findings highlight the importance of teachers' ability to provide strong tier 1 instruction that ensures students are engaged in grade-level tasks. The RTA and MAF grants may present an opportunity to address this issue by being more closely aligned with the recently adopted Kentucky Academic Standards.
- **Students saw gains made in their progression towards grade level math standards over the course of the intervention and as a function of how much intervention they received. However, the amount of growth varied depending on the grade, time of year the**

intervention was delivered, and the amount of intervention received. These findings reiterate the importance of intervention instruction that is coherent across the academic standards continuum: instruction should be aligned within the standards domains of the current grade level and connected to the standards in adjacent grades. This alignment consequently will move students forward in their mathematical progression. As stated above, the grants may present an opportunity to better support teachers in delivering coherent and aligned interventions.

PART 1: GRANT DISTRIBUTION AND RECIPIENTS

INTRODUCTION

To investigate grant effectiveness, examining how grants are awarded is important in determining whether the resources provided by the grant are being distributed for the greatest impact. If the grant is not going to those schools with the greatest need, even the most effectively implemented programs may have a limited result.

This analysis looks at the 2018-19 cohort of RTA and MAF grant-receiving schools and seeks to understand how the RTA and MAF grants have been distributed.

The section is organized around the following three questions:

1. Did the 2018-19 grants go to the schools most in need?
2. How long have the 2018-19 grantees been receiving the grants?
3. Are the 2018-19 grants clustered in particular districts?

DID THE 2018-19 GRANTS GO TO THE SCHOOLS MOST IN NEED?

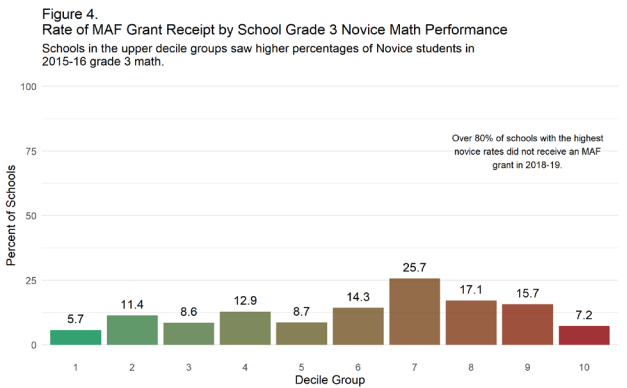
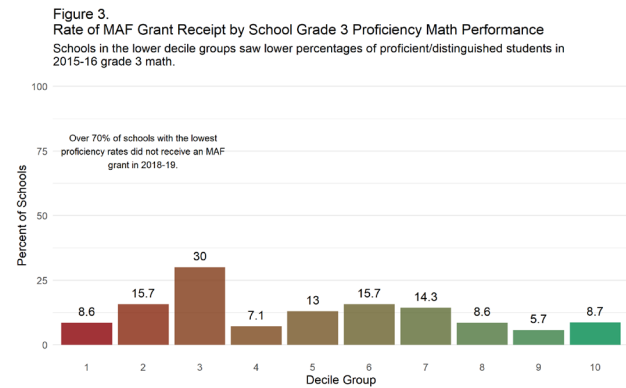
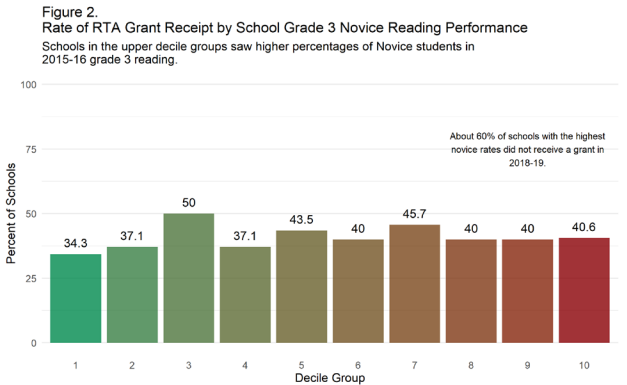
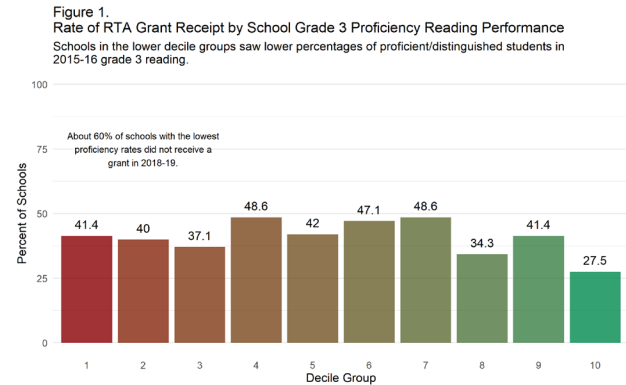
SCHOOLS WITH THE GREATEST NEED AS DEFINED BY GRADE 3 KPREP PERFORMANCE OR STUDENT DEMOGRAPHIC CHARACTERISTICS DID NOT SEE A GREATER LIKELIHOOD OF RECEIVING A GRANT COMPARED TO SCHOOLS WITH LOWER LEVELS OF NEED. THIS RESULT IS ESPECIALLY EVIDENT FOR THE RTA GRANT.

This question seeks to understand whether grant receipt in 2018-19 was related to a school's need as defined by its academic achievement on the respective grade 3 KPREP assessment in 2015-16 or by the percentage of the school's students that were part of an underserved population in 2015-16. This year was selected because it was the year of data that would have been available during the grant award process and thus could have been used in determining award winners.

The odds of a school receiving either an RTA or MAF grant in 2018-19 were modeled using a logistic regression approach, with controls added for school demographics (percent African American, percent Hispanic, percent English Learner, percent with an IEP, percent eligible for free/reduced-price lunch), school size (school membership), and school performance (both the percent of students scoring novice in reading or math and the percent of students reaching proficiency in reading or math). The analyses found no meaningful relationship between any of the covariates and the odds of receiving a grant in 2018-19 for either subject area.

To illustrate the relationship between grant receipt and school performance, Figures 1-4 show schools' academic performance on the respective grade 3 KPREP assessment in 2015-16 ordered by decile group on the X-axis and the percent of schools in each group receiving a grant in 2018-19 on the Y-axis. Both proficiency rates and novice rates are depicted to inspect achievement at both ends of the performance spectrum.

For the RTA grant, schools with lower levels of performance (red) often had similar rates of grant receipt as their higher performing peers (green). In fact, schools performing in the lowest decile group on grade 3 KPREP reading proficiency received a grant at the same rate as schools in the ninth decile group (figure 1). The MAF grant sees a more positive pattern with some differentiation of grant receipt between low and high performing schools, although this relationship does not look as strong as might be hoped. For instance, schools with the highest rates of novice performance had the second lowest rate of grant receipt amongst all decile groups (figure 4).



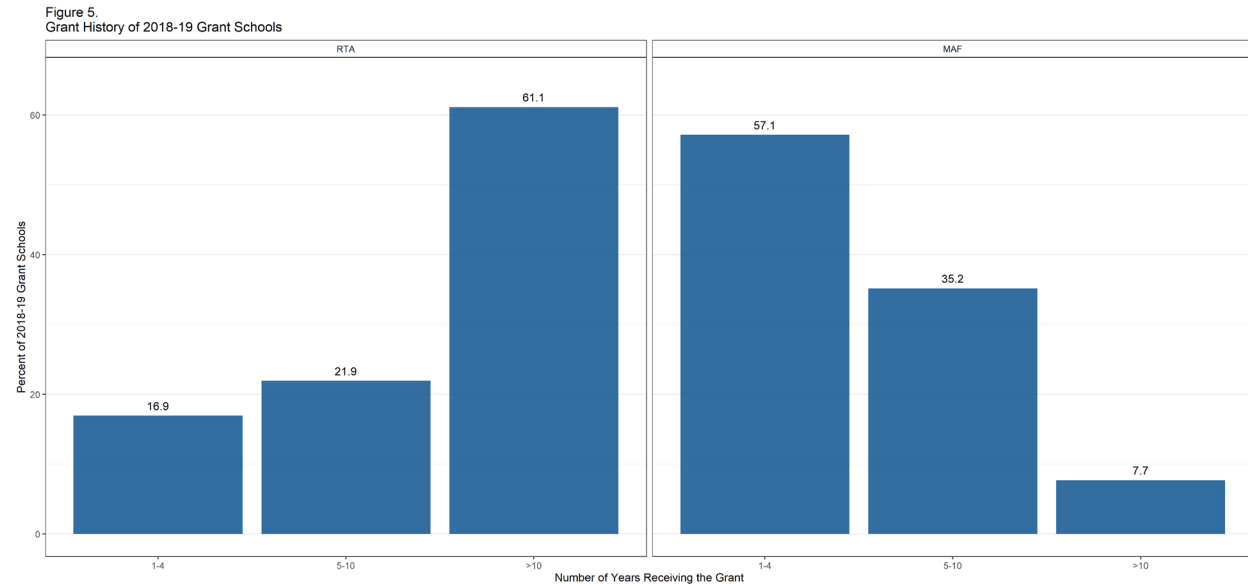
HOW LONG HAVE THE 2018-19 GRANTEES BEEN RECEIVING THE GRANTS?

A SCHOOL'S PAST GRANT RECEIPT MAY HAVE INFLUENCED WHETHER A SCHOOL RECEIVED EITHER AN RTA GRANT OR AN MAF GRANT IN 2018-19. FOR RTA, MOST 2018-19 GRANT SCHOOLS HAVE RECEIVED THE GRANT FOR MORE THAN 10 YEARS, WHEREAS THE MAF GRANT SAW THE OPPOSITE DISTRIBUTIONAL PATTERN WITH MOST 2018-19 GRANT SCHOOLS RECEIVING THE GRANT FOR LESS THAN 5 YEARS.

In addition to a school's need, the history of a school's grant receipt may also drive whether they are awarded a grant. For example, a school's familiarity with the application process or program details may make it easier for the school to win the grant again in the future. Figure 5 shows the distribution of 2018-19 grant-receiving schools and the number of years they have received the respective grant (between 2005-16 and 2018-19 for RTA and 2006-07 and 2018-19 for MAF). The X-axis indicates three groups that correspond with grant cycles. The 1-4 year group roughly aligns with the most recent four-year grant cycle, while the 5-10 year group indicates

schools receiving grants for more than one four-year cycle. The final group includes schools receiving the grant for more than 10 years, or more than two cycles.

Schools receiving an RTA grant in 2018-19 most often held the grant for more than 10 years. For MAF, this was the category with the lowest population of schools. Instead, most schools have received the grant for only 1-4 years.



ARE THE 2018-19 GRANTS CLUSTERED IN PARTICULAR DISTRICTS?

BOTH GRANTS DEMONSTRATE CLUSTERING AT THE DISTRICT LEVEL, WITH A SMALLER GROUP OF DISTRICTS HOLDING A LARGER PROPORTION OF GRANTS. THIS CLUSTERING IS MORE PRONOUNCED WITH THE RTA GRANT, WHICH SPREADS 300 GRANTS OVER 108 DISTRICTS (A RATIO OF 2.8 GRANTS PER DISTRICT). THE MAF GRANT DISTRIBUTES 97 GRANTS OVER 50 DISTRICTS (A RATIO OF 1.9 GRANTS PER DISTRICT).

Related to the potential influence of schools' past grant receipt, some districts may have more resources than others, such as grant writers, which may influence a school's ability to obtain a grant. Grants clustered within districts may also indicate the incorporation of the grant into systemic district improvement processes. Figures 6-7 show the percentage of schools with any grades K-3 in the district that received a grant in 2018-19 on the X-axis. The average length of time schools have been receiving the respective grant (between 2005-16 and 2018-19 for RTA and 2006-07 and 2018-19 for MAF) is given on the Y-axis, and the size of the bubbles indicate the number of grants held in 2018-19 by the respective district.

For RTA, there are 30 districts which held three or more grants and in which half or more schools received a grant (see the red bubbles in figure 6). These 30 districts include 27.2% of eligible schools (those with any grades K-3) and held 54.7% of the 2018-19 RTA grants. Interestingly, these districts also tended to have a higher average number of years that schools received the grant.

The MAF grant also saw some clustering, although to a lesser extent. Most districts saw less than half of their schools receiving a grant (left half of figure 7). Five districts (Madison, Whitley, Logan,

Owensboro, and Grayson, highlighted in red) had more than half of their schools receiving an MAF grant and held three or more grants. These five districts accounted for 4.3% of all eligible schools and held 27% of all MAF grants. Additionally, these districts also showed clusters of RTA grants. Madison County demonstrates the most clustering with 10 MAF grants and 10 RTA grants spread across the county's 12 schools with K-3 grades.

Figure 6. 2018-19 RTA Grant Distribution and Average Number of Years Schools have Received the RTA Grant

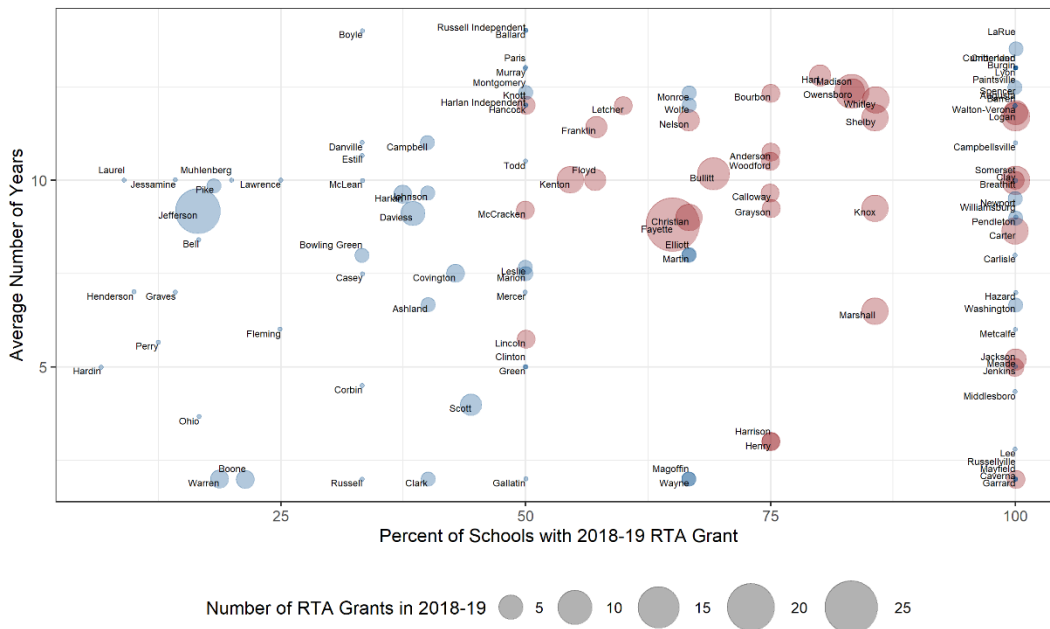
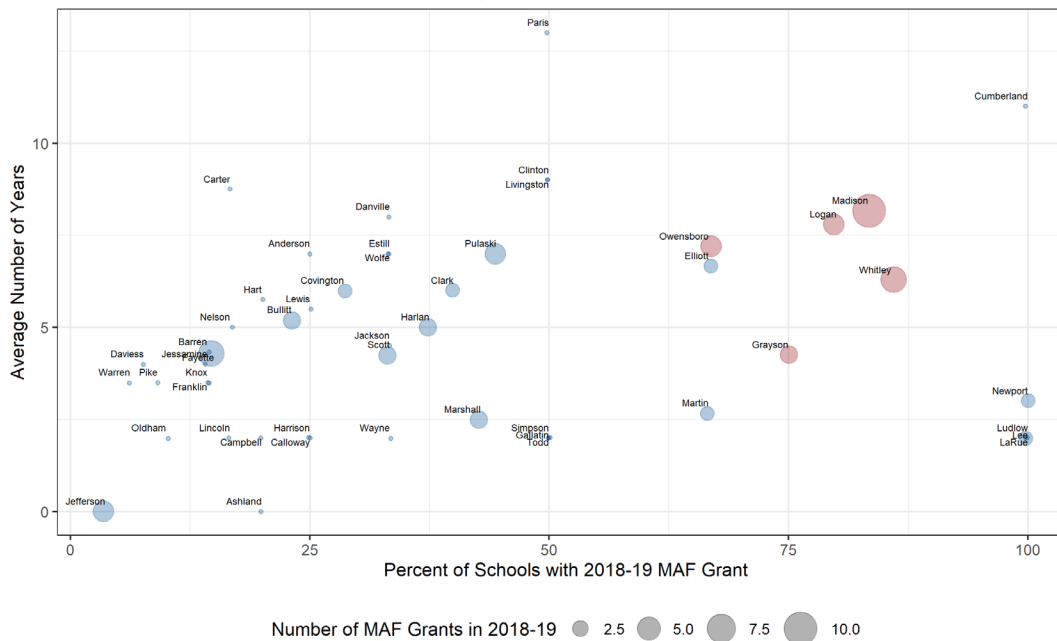


Figure 7. 2018-19 MAF Grant Distribution and Average Number of Years Schools have Received the MAF Grant



CONCLUSION

The analysis above identified several important insights about how the RTA and MAF grants have been awarded and provides direction for improvements in grant implementation.

- **Neither grant seems to have been awarded based on a school's academic or student population needs.** These findings suggest school need may have been defined and considered using other criteria, or may not have been considered at all. It could be that grant awards have greatly depended on which schools applied for the grant, and schools with the most need may not be the schools most often submitting an application. As such, an opportunity exists to better align the grant application and award process with state goals such as achievement gap closure by targeting schools most in need of support.
- **In both grants, the history of a school's past grant receipt may have potentially influenced whether or not a school received a grant in 2018-19.** The grants saw opposite results in this area with 2018-19 RTA schools more often having received the grant for more than 10 years and MAF schools more often having received grants for less than five years. This raises the question of the purpose of the grants: are they long-term supports aimed at sustaining change, or are they short-term catalysts that seek to kick-start change? This may also present an opportunity to better align the grants to agency goals. However, due to the long history of RTA grant receipt for many schools, changing the grant structure may present large challenges for schools in implementing reading interventions in the future.
- **A district's ability to obtain grants may have influenced which schools received a grant.** Both grants showed clustering at the district level, with some districts receiving a higher concentration of grants than others. While this finding can point to the systematic improvement efforts made by some districts, it also raises the question as to whether the grant application and implementation processes raise barriers for some schools that may be good candidates but that may not have adequate resources to take advantage of the grant.

PART 2: GRANT SPENDING

INTRODUCTION

In addition to understanding how grants are awarded and distributed, establishing a picture of how schools use grant money is an important facet in determining the effectiveness of the grant. This information can shed light on whether schools are spending money in a manner that is in line with the purpose of the grant.

For this analysis, expenditure data from KDE's MUNIS system was collected for the 2018-19 grant schools (these expenditures were unaudited at the time of analysis). The data reported below includes expenditures that were indicated as being part of the RTA and MAF project codes. It should be noted that while 300 schools are indicated to have received the RTA grant in 2018-19, 276 reported RTA expenditures. Similarly, 97 schools are listed as receiving MAF grants in program files, and 85 schools are listed in the expenditure data.

The analysis is organized around the following four questions regarding grant spending in the 2018-19 school year:

1. How much grant money did schools spend?
2. How were total grant expenditures distributed across program components?
3. On which program components did schools decide to spend grant money?
4. How much money did individual schools spend on program components?

HOW MUCH GRANT MONEY DID SCHOOLS SPEND?

MOST SCHOOLS SPENT A LARGE PORTION OF THE 2018-19 GRANT AMOUNT FOR BOTH GRANTS, WITH THE MAJORITY OF SCHOOLS SPENDING THE FULL GRANT ALLOCATION OR MORE.

This question aims to provide information on how much of the annual grant amount schools generally spent. In 2018-19, schools spent between \$0.01 and \$71,347 in the RTA grant. Almost all schools spent more than \$33,000, and more than 75% of schools (n=216) spent \$47,200 (the 2018-19 grant amount) or more.

Similarly, MAF schools spent between \$8,531 and \$71,129 in the MAF grant. A large majority of schools (82%, or n=70) spent the full grant amount, \$48,400, or more.

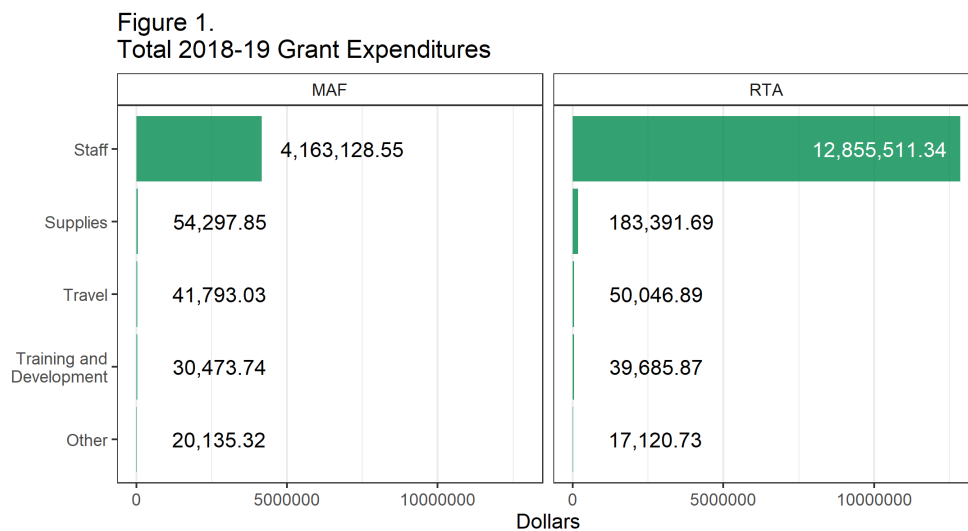
HOW WERE THE TOTAL GRANT EXPENDITURES DISTRIBUTED ACROSS PROGRAM COMPONENTS?

FOR BOTH GRANTS, AN OVERWHELMING MAJORITY OF TOTAL GRANT FUNDS WAS SPENT ON STAFF EXPENDITURES WHICH INCLUDE SALARIES AND BENEFITS. THE SPENDING ON TRAINING AND PROFESSIONAL DEVELOPMENT ACCOUNTED FOR LESS THAN A PERCENTAGE POINT OF THE YEAR'S TOTAL GRANT EXPENDITURES.

In addition to how much schools are spending in total from grant funds, examining the distribution of expenditures by program component provides insight on grant schools' spending priorities. In the 2018-19 school year, \$13,145,756 was spent via the RTA grant, and \$4,309,828 was

spent via the MAF grant. As seen in figure 1, the vast majority of grant spending occurred in the staff category for both grants (97.8% of RTA expenditures and 96.6% of MAF expenditures), which includes staff salaries and benefits. Supplies was the second highest spending category in both grants, although it represented just a fraction of grant expenditures. This category included things such as consumables, curriculum resources, and technological supplies. Training and development of staff was the lowest category aside from the miscellaneous 'other'. This category included professional development expenditures such as course or conference registration fees and training course costs. It represented 0.3% and 0.7% of RTA and MAF expenditures respectively.

Interestingly, while the RTA grant serves about three times the number of schools and both the staff and supplies categories saw about three times the spending, both travel and training and development only reached expenditure amounts similar to that of the MAF schools. This may be due to the type of reading intervention selected by the school and the purpose of each grant. For example, Reading Recovery teachers do not need to be trained each year and thus would not warrant yearly training expenditures, whereas the MAF grant seeks to train an additional teacher each year and therefore would see higher yearly training expenditures.



ON WHICH PROGRAM COMPONENTS DID SCHOOLS DECIDE TO SPEND GRANT MONEY?

SCHOOLS ARE LARGELY SPENDING GRANT MONEY ONLY ON STAFF EXPENDITURES. TRAINING AND DEVELOPMENT OF STAFF SAW THE LOWEST PERCENTAGE OF SCHOOLS DECIDING TO SPEND MONEY ON THAT CATEGORY EXCEPT FOR THE 'OTHER' CATEGORY.

To better understand schools' grant spending priorities, this question seeks to identify the components of the intervention program on which schools decided to spend any money at all. In figure 2, the X-axis indicates the program component category and the Y-axis provides the percentage of schools that spent any money in that category in 2018-19. Almost all schools in RTA and all schools in MAF decided to spend grant money on staff. More than two-thirds of schools did not spend any money on travel, supplies, training and development, or other areas. Training and development saw the second lowest rates of spending decisions, higher than only

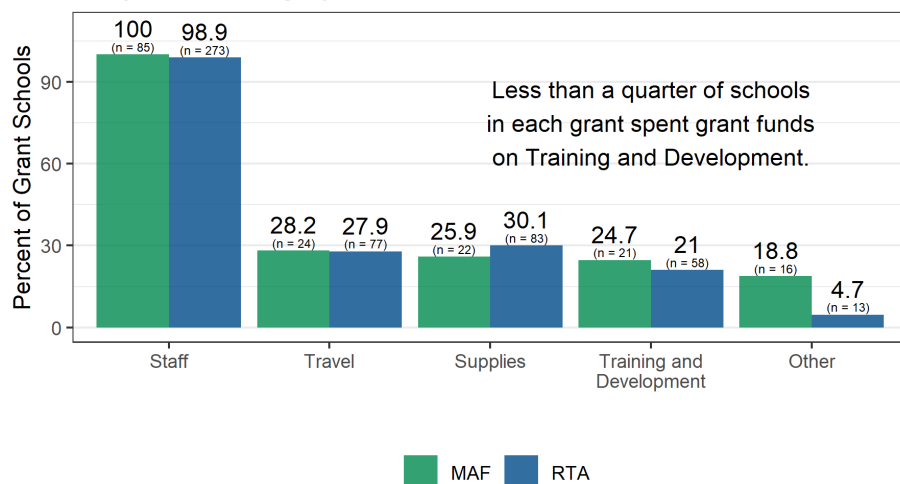
the miscellaneous 'other' category. This may be due in part to schools utilizing training opportunities provided by KDE in lieu of external professional development.

When looking at RTA expenditures by grant age groups (schools that have received the grant for less than 5 years, for 5-10 years, or more than 10 years), the rate of schools deciding to spend any grant money in the respective program category was similar across age groups. This may indicate that there is little maturity in program development as measured by program spending as a school ages in its grant participation.

There was some difference when looking by the previous years' third grade reading performance levels. More schools with average 2017-18 third grade reading scores that were in the third and fourth quartiles of grant schools decided to spend money on training and development compared to schools at the lower end of the previous year's performance distribution. Similarly, a larger percentage of schools in the highest quartile of average assessment scores decided to spend money on travel or supplies compared to schools in lower performance groups. This may be concerning as lower performing schools may need more resources dedicated to training or travel to ensure RTA teachers have the skills needed to implement interventions.

An analysis of MAF using grant age and previous year's performance was not able to be conducted due to small sample size.

Figure 2.
Percent of 2018-19 Grant Schools with Expenditures in the Respective Category



HOW MUCH MONEY DID INDIVIDUAL SCHOOLS SPEND ON PROGRAM COMPONENTS?

IN ADDITION TO TRAINING AND DEVELOPMENT OF STAFF HAVING THE LOWEST PERCENTAGE OF SCHOOLS DECIDING TO SPEND GRANT MONEY ON THAT CATEGORY, OF THOSE THAT DID SPEND ON TRAINING AND DEVELOPMENT, THIS CATEGORY ALSO SAW THE LOWEST MEDIAN EXPENDITURE AMOUNTS COMPARED TO THE OTHER SPENDING CATEGORIES.

Coupled with the decision on whether to spend money in a particular category, schools are also faced with deciding how much to allocate to a program component. While schools may not

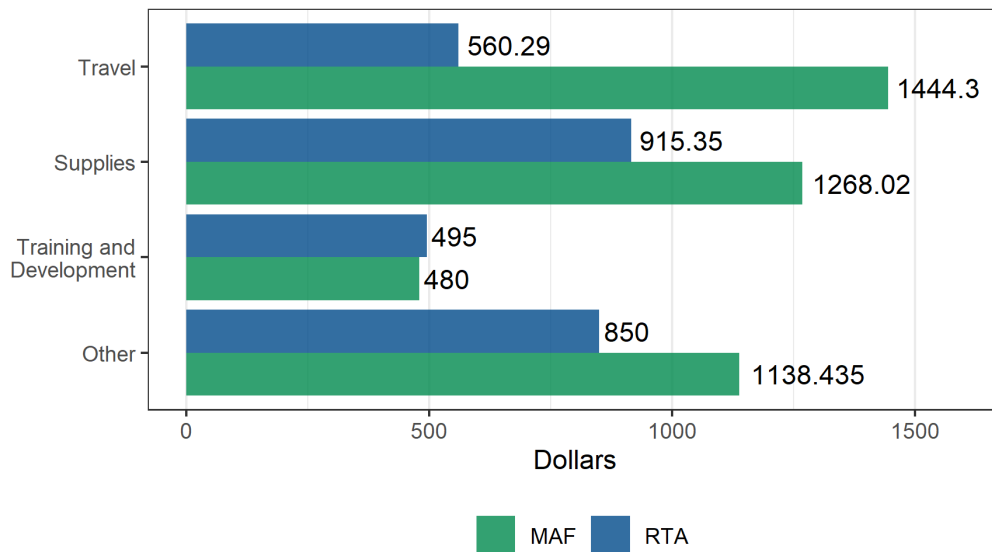
decide to spend money on a particular area, those that do may decide to spend larger or smaller amounts depending on their priorities. Of the schools that spent money on the staff category, the median staff expenditure was \$47,200 and \$48,400 for the RTA and MAF grants respectively. These are equal to the 2018-19 grant allocations for both grants.

Looking only at the other categories, of the schools spending money in any of the other project areas, training and development saw the lowest median amount spent for both grants (see figure 3). So, not only are schools deciding to spend on this category less often, those that do spend are also spending less money.

For the RTA grant, there was a slight increase in the median amount spent on training as the number of years schools held the grant increased. Schools with grants older than 10 years had a median spending amount in this area that was about 80% more than those with grants that were less than 5 years old, perhaps pointing to some maturation through a school's grant lifecycle. There was a general decrease in the amount spent on travel as the age of grants increase. The median spending in this category for schools that held grants for less than 5 years was almost twice that of schools holding grants that were more than 10 years old.

Lower performing RTA schools spent more in general on supplies, but there were no other systematic differences by performance quartile. Again, a similar MAF analysis was not conducted due to small sample size.

Figure 3.
2018-19 Median Grant Expenditures of Schools Spending Money in the Respective Category (excluding staff)



CONCLUSION

The information above provides greater detail on grant schools' spending decisions and potentially the competing priorities that must be weighed when allocating grant money for the intervention programs.

- **Schools generally used the full grant allocation in 2018-19.** In this most recent year, the grant funds seemed to be fully utilized and spent on the categories stipulated by the intervention program.
- **For both grants, the vast amount of grant spending in 2018-19 went to expenses associated with acquiring staff such as salary and benefits.** Because the majority of schools spent the full grant amount in this area, this may indicate schools' main grant priority has been obtaining the necessary staff to provide intervention services. Such heavy weighting of this component of the intervention program could point to trade-offs faced by schools: if the grant amount generally only covers enough to hire an interventionist, there may be little room to invest grant funds in other areas such as training.
- **Grant money was least often spent on training and staff development in both grants compared to other program components; when money was spent in this area, it also saw the lowest median spending amounts for both grants as well.** While schools may be spending other money to train the grant interventionist, the recorded RTA and MAF expenditures seem to prioritize staff training to a lesser degree than other categories as measured by spending decisions. Because most money is spent on obtaining staff as opposed to training, this could point to an important issue affecting the quality of intervention delivery – who schools hire is of great importance. The level of interventionist expertise may rely heavily on the training and credentials these teachers bring into the position.

PART 3: INTERVENTION TEACHERS

INTRODUCTION

Crucial to effective grant implementation are the intervention teachers who are charged with delivering high quality intervention services to students. Understanding characteristics of this teaching force can provide greater insight into the success of the grant program as well as additional needs to be considered. This area may be especially important in light of *Part 2: Grant Spending*'s results that indicated staff training and development may be a low priority for schools' grant spending. If interventionists do not receive training on intervention delivery or content instruction, they are reliant upon their previous experience and training to provide the skill base necessary for intervention delivery.

The following analysis seeks to understand the level of quality within the grant-funded intervention teaching force as defined by teacher experience, credentials, and retention. EPSB data for the 2014-15 to 2017-18 school years (2018-19 was not available at the time of the study) was joined with MUNIS data for the same years, both provided by KYStats. The grant teachers were identified by filtering on the RTA and MAF MUNIS project codes, resulting in 300 teachers connected to the RTA grant and 103 teachers in the MAF grant in 2017-18.

The following questions were used to structure this section:

1. Were the 2017-18 grant interventionist teachers high quality educators?
2. To what extent have grant interventionists stayed in the same grant school over the years?

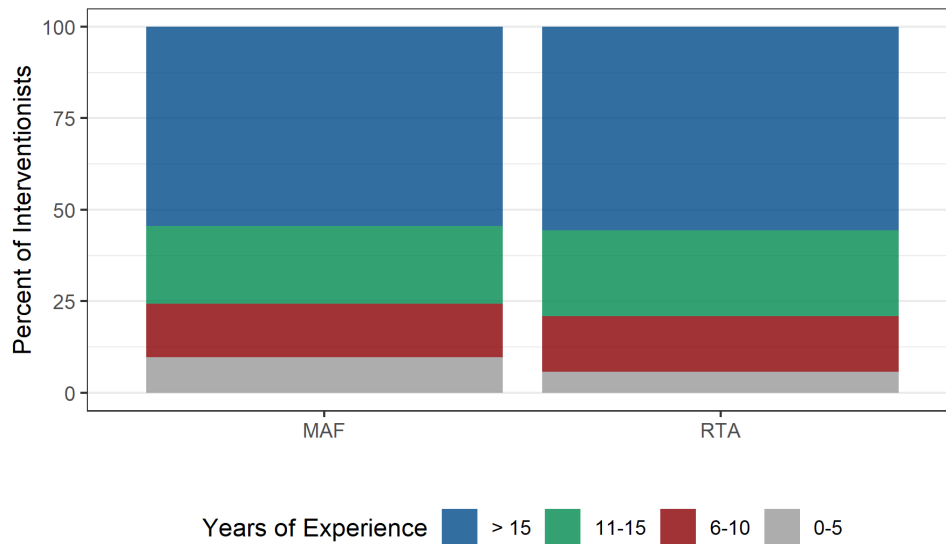
WERE THE 2017-18 GRANT INTERVENTIONIST TEACHERS HIGH QUALITY EDUCATORS?

WHILE INTERVENTION TEACHERS IN BOTH GRANTS SAW HIGH LEVELS OF EXPERIENCE AND GRADE-LEVEL TEACHING CERTIFICATION, THE VAST MAJORITY OF INTERVENTIONISTS DID NOT HOLD A CONTENT-SPECIFIC CREDENTIAL. THIS WAS ESPECIALLY TRUE OF MAF.

This question seeks to understand to what degree the teaching force that is supported by grant funds was of a high quality in 2017-18. The quality of intervention teachers was investigated along three dimensions: years of experience, quality grade-level certification, and content expertise certification.

For both grants, intervention teachers were largely well-experienced. More than three-quarters of interventionists in both RTA and MAF had more than 10 years of experience in 2017-18 (see figure 1). Only 5 teachers in the RTA grant and 3 in the MAF grant had experience that was less than 3 years, which was the floor-level of experience required by grant criteria. The average number of years of experience was 16 for both grants, which was higher than the overall state average of 12 years. It should be noted that this experience may largely be in intervention delivery rather than in general classroom instruction.

Figure 1.
Distribution of Interventionist Experience in 2017-18



In addition to being well-experienced, interventionists in both grants were appropriately credentialed for the grade level they were serving: all interventionists in 2017-18 held a valid Kentucky credential that included grades K-3 and that was not an emergency or temporary certification.

However, when looking at content-specific credentials, interventionists had very limited qualifications. Only 71, or 24% of RTA interventionists had a reading/literacy-specific credential such as a literacy specialist. This rate was even lower for MAF: only two interventionists, or 2%, held a math-specific credential.

While these results may indicate a need for additional interventionist expertise, encouragingly the reading/literacy-specific credentials were generally more concentrated in lower performing schools. For example, schools performing in the lowest quartile of 2017-18 average KPREP reading scores accounted for 25% of the reading/literacy-specific credentials, which was more than twice the amount contained in the 4th quartile schools.

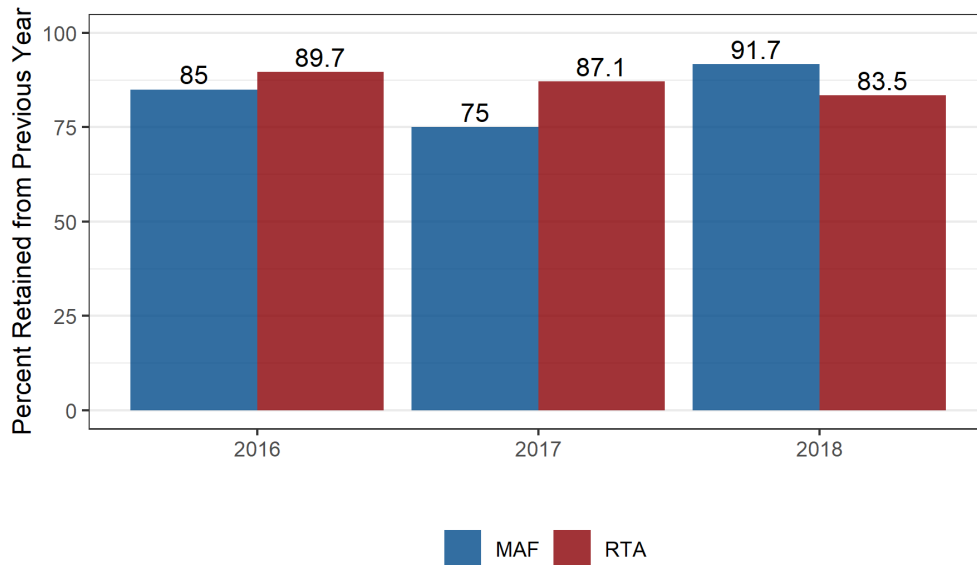
TO WHAT EXTENT HAVE GRANT INTERVENTION TEACHERS REMAINED AT THEIR GRANT SCHOOL OVER THE YEARS?

TEACHERS LARGELY TENDED TO STAY IN THEIR GRANT SCHOOLS FROM YEAR TO YEAR, WITH A TURNOVER RATE THAT WAS LOWER THAN THE STATE RATE FOR RTA AND EQUIVALENT TO THE STATE RATE FOR MAF. HOWEVER, OVER THE COURSE OF FOUR YEARS, A MAJORITY OF MAF TEACHERS AND JUST OVER A THIRD OF RTA TEACHERS LEFT THEIR ORIGINAL SCHOOL.

In addition to the quality of an intervention teacher, the rate at which teachers leave their positions can have an impact on the quality of intervention delivery. Relationships with students can be interrupted and organizational capacity may be lost when staff leave who have gained intervention experience and knowledge. New teachers may also need additional training to get them up to speed on intervention implementation.

To understand this issue, we first looked at rates of teacher retention from year to year in their grant schools. That is, we calculated the percentage of teachers that were still in their respective RTA or MAF position from the previous year for each year 2015-2018. Results indicated a rather high retention rate of RTA teachers, losing only about 10% of the interventionists each year (see figure 2). The MAF grant saw a higher turnover rate, averaging about 19% of intervention teachers leaving their school each year. These can be set in comparison to the teacher statewide teacher turnover rate of 17% in 2017-18 (as indicated by the Kentucky School Report Card).

Figure 2.
Intervention Teacher Retention Rate from the Previous Year

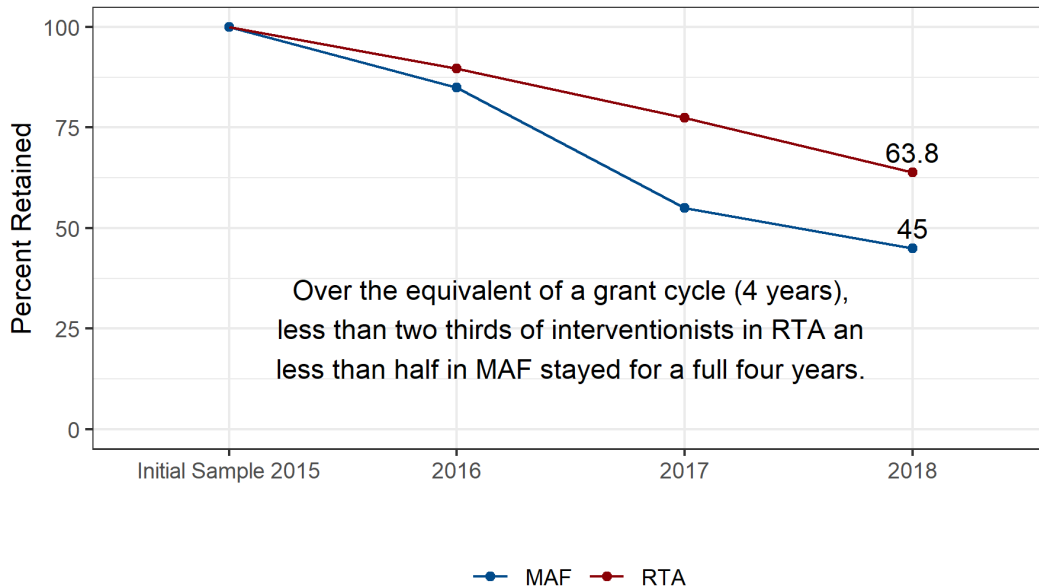


Looking longitudinally, however, we get a better picture of erosion over time. For this portion, schools were only included if they received a grant during all five target years. By 2018, less than two-thirds of RTA interventionists were in the same school they started in in 2015. This number is less than half for MAF. This may in part be due to an uptick in teacher retirements during these years.

It should be noted for the RTA grant, however, that this issue affected schools differently: schools performing the lowest in 2015 saw the highest rates of teacher retention. For example, schools in the first quartile of average 2015 KPREP reading scores saw a retention rate that was 7 percentage points and 12 percentage points higher than schools in the 3rd and 4th quartiles respectively.

Due to small sample sizes, this analysis could not meaningfully be conducted for the MAF grant.

Figure 3.
Longitudinal Interventionist Retention 2015 - 2018



CONCLUSION

This section explored characteristics of the RTA and MAF grant teaching force as defined by years of teacher experience, type of teacher credentials, and rate of teacher turnover. Findings provide guidance around how this resource might be better leveraged to achieve grant goals.

- **Intervention teachers in both grants were well-experienced and held the necessary grade-level credentials that for the population they serve. However, these teachers largely did not hold credentials indicate specialized training in content-specific instruction (reading/literacy in the case of RTA and mathematics for MAF).** This may point to an area of need when paired with the results from *Part 2: Grant Spending*. Teachers may be entering the interventionist position with little content-specific expertise and may also not be receiving robust training within the provision of the grant.
- **While teacher turnover from year to year was at or below the state average, over the course of four years, both grants lost a large portion of their teaching force – over one-third for RTA and more than half for MAF.** Coupled with the training issue above, this loss of capacity may make maintaining an experienced and expert intervention staff even more difficult. Additionally, the relationships with students and ability to provide a continuity of services from year to year may be more challenging when new staff come in and must get up to speed on students' needs and progress.

PART 4: INTERVENTION STUDENTS

INTRODUCTION

The previous sections have focused on components of grant implementation in order to gain an understanding of how effectively grant funding is being used. Crucial to this investigation is an analysis of student outcomes and how these outcomes may be connected to the implementation issues that have been identified. This sheds some light on the overall goal of the grant, which is to help students who are behind in their skills catch up to their peers by grade 3.

This section examines growth gains of intervention students and the relationship between growth and the amount of intervention students received. We analyzed 2018-19 student-level MAF data from Infinite Campus for this study. This was possible for the MAF grant because this grant required schools to use the same assessment, EasyCBM, in 2018-19. A similar analysis could not be completed for RTA at this time because different assessments are used across the population of schools. Growth measures in this analysis use the EasyCBM scale and are calculated by the change in points between assessments.

The research questions guiding this section are the following:

3. How much growth did intervention students make?
4. Did the amount of intervention matter for student growth?

HOW MUCH GROWTH DID INTERVENTION STUDENTS MAKE?

STUDENT GAINS DID NOT DEMONSTRATE THE ACCELERATED GROWTH NEEDED FOR INTERVENTION STUDENTS TO CATCH UP TO THEIR PEERS. RATHER, GAINS EQUATED TO ONE YEAR OF GROWTH FOR MOST GRADES. THESE RESULTS VARIED BY GRADE LEVEL AND WHEN THE INTERVENTION TOOK PLACE WITH MOST GAINS OCCURRING IN EARLY GRADES AND IN THE FALL SEMESTER.

Our first question investigated the amount of growth 2018-19 MAF students made in grades K-3 as defined by their EasyCBM scores.

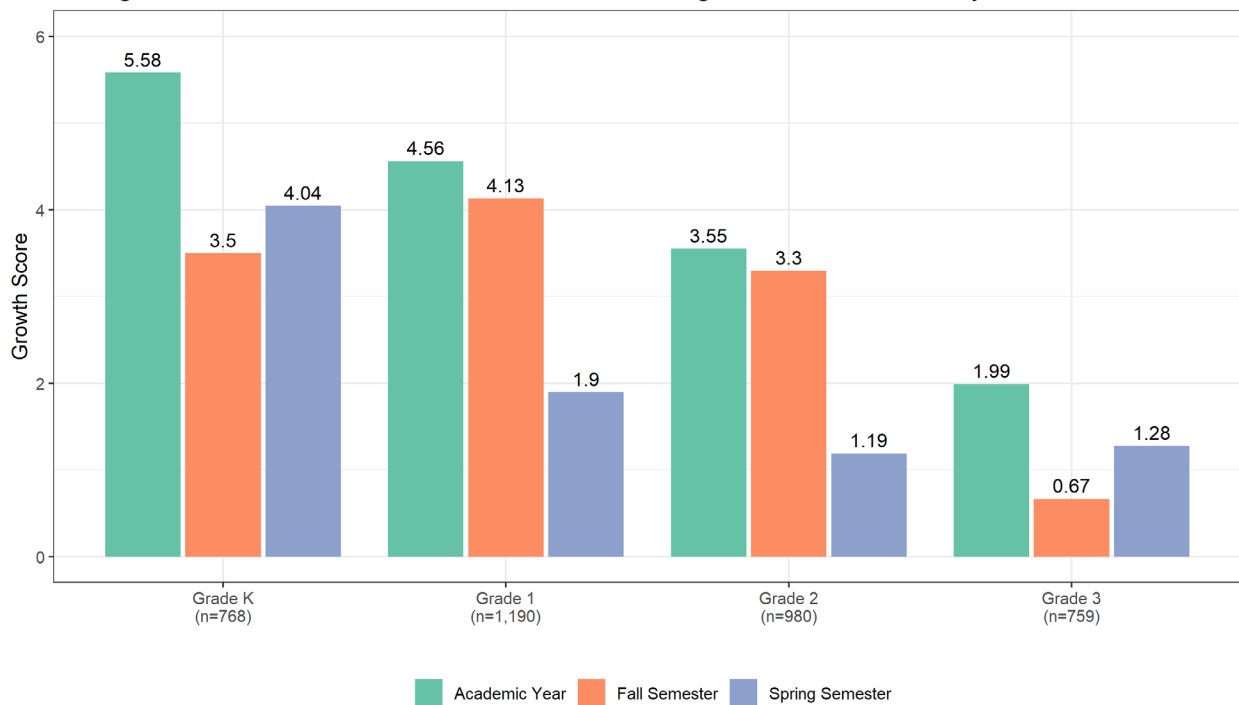
Results from our analysis show that growth gains were made by students at all grade levels (see figure 1). Growth gains for students who received an intervention for the entire academic year on average equate to about one year's growth for grades K-2 and less than a year's growth in grade 3.¹ While these results are promising, it is important to note that students receiving intervention services test below grade level at the start of the school year. These students, in turn, would need growth gains that exceed one year's growth in order to "catch up" to their peers. For grade 3 intervention students, this means they continued to lose ground to their peers.

For students who received intervention services for less than a full school year, growth gains varied according to when the intervention took place. Students who received an intervention in

¹ A year's growth is based on the EasyCBM growth norms for students scoring in the 50th percentile. Students scoring in the 50th percentile of each grade saw the following growth scores over the course of one year: Grades K and 1: 5 points; Grade 2 and 3: 3 points.

the fall semester had growth scores twice as large as students who received an intervention in the spring in grades 1 and 2. The reverse was found for grades K and 3 with spring semester intervention students outperforming the peers who received their interventions in the fall. Considering intervention students exit the program once they attain a benchmark, differences in growth between semesters may be explained by when a student exited the program or by the progression of difficulty in the skills being taught.

Figure 1.
Average Growth in Mathematics for K-3 Students Receiving Intervention Services by Semester, 2018/19



Source: MAF Intervention Tab

DID THE AMOUNT OF INTERVENTION MATTER FOR STUDENTS' GROWTH?

WHILE THERE IS SOME EVIDENCE THAT INCREASED INTERVENTION TIME AND FREQUENCY WERE ASSOCIATED WITH INCREASED GROWTH, THE MAGNITUDE OF THIS RELATIONSHIP WAS INCONSISTENT ACROSS GRADE LEVELS.

This question aims to identify how the amount of intervention provided to students was related to student growth in 2018-19, providing insight on how grant effectiveness may vary by context.

Students receiving interventions are assigned different amounts of academic support. These differences vary in both the amount of instructional time dedicated to each intervention session (duration) and the number of times per week students receive intervention (frequency). In turn, the amount of intervention can differ considerably between students. For example, one student may be assigned to receive less than 30 minutes of intervention once per week, whereas another student could be assigned more than 60 minutes of intervention every day of the week. In order to investigate the relationship between the amount of intervention services received and student growth, we used the 2018-19 student data to estimate the amount of growth a student was expected to achieve on average with each additional minute of intervention and

given student- and school-level characteristics. These estimates were then used to predict growth scores of students for each combination of intervention frequency and duration.

Table 1 reports the predicted growth scores on the EasyCBM by frequency and duration combinations. Results show that increased intervention time and frequency were associated with increased growth with predicted growth scores ranging from 0.05 to 2.91 additional points in student growth depending on the amount and number of times per week intervention services were given. This is encouraging when also considering that tier 3 students tend to be in higher frequency and duration groups compared to tier 2 students and thus are also seeing gains from the interventions they receive. However, findings were inconsistent across grade levels. The marginal benefit of additional intervention services in grade 2 were found to be significantly smaller than those in the other grades. These findings may be explained by differences in the intervention programs implemented by schools or possibly increasing difficulty of skills as grades increase.

Table 1.
Predicted Growth Scores in Mathematics by Frequency and Duration

Level	Frequency	Duration			
		15 mins.	30 mins.	45 mins.	60 mins.
Grade K	2 time per week	0.34	0.67	*	*
	3-4 times per week	0.59	1.17	*	*
	5 times per week	0.84	1.67	*	*
Grade 1	2 time per week	0.29	0.58	0.87	1.16
	3-4 times per week	0.51	1.02	1.53	2.04
	5 times per week	0.73	1.45	2.18	2.91
Grade 2	2 time per week	0.05	0.11	0.16	0.21
	3-4 times per week	0.09	0.18	0.27	0.37
	5 times per week	0.13	0.26	0.39	0.52
Grade 3	2 time per week	0.31	0.62	0.93	*
	3-4 times per week	0.54	1.09	1.63	*
	5 times per week	0.78	1.55	2.33	*

Notes: Sample consisted of full-year intervention students (n=1957). Growth scores were estimated using four multi-level models that included student- and school-level covariates. Growth scores were not estimated for group sizes below n=20 (as indicated with an asterisk). A complete summary of the results are available upon request.

CONCLUSION

This section utilized student-level data to explore the growth of intervention students and the relationship between growth and the amount of intervention students received from the MAF grant.

These results provide insight on the grant's connection to student outcomes and illuminates areas for further study.

- **Students receiving intervention services, on average, made one year's worth of progress. While these gains are significant and in the right direction, they do not show the amount of accelerated growth needed for the students targeted by the MAF grant.** This further underscores findings in previous sections of the need for high-quality interventionists. Limited professional development opportunities or lack of specialization in the content area may make it difficult for interventionists to provide high quality instruction needed to achieve accelerated growth. Additionally, these findings highlight the importance of teachers' ability to provide strong tier 1 instruction that ensures students are engaged in grade-level tasks. The RTA and MAF grants may present an opportunity to address this issue by being more closely aligned with the recently adopted Kentucky Academic Standards.
- **Students saw gains made in their progression towards grade level math standards over the course of the intervention and as a function of how much intervention they received. However, the amount of growth varied depending on the grade, time of year the intervention was delivered, and the amount of intervention received.** These findings reiterate the importance of intervention instruction that is coherent across the academic standards continuum: instruction should be aligned within the standards domains of the current grade level and connected to the standards in adjacent grades. This alignment consequently will move students forward in their mathematical progression. As stated above, the grants may present an opportunity to better support teachers in delivering coherent and aligned interventions.