

Should North Carolina Implement 12-Month Teacher Contracts?

Advantages, Disadvantages, and Ways Forward

Presented to the
North Carolina Department of Public Instruction

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Executive Summary

I. Policy Question

What are the advantages and disadvantages of moving contracts for teachers in North Carolina from the current 10-month contract to a 12-month contract?

II. Background

A review of teacher pay and retention trends in North Carolina.

III. Methods

In order to address the policy question, our team:

- Conducted a literature review of best practices in teacher engagement outside of the classroom to identify how the additional two months of work could be used.
- Conducted interviews with key stakeholders in the educational community.
- Surveyed North Carolina teacher and administrator preferences.
- Computed regressions on survey results to identify correlations among responses.
- Conducted data analysis of correlations to identify possible implementation strategies.
- Quantified costs of implementation.

IV. Findings

Our best practice research indicates that completing professional development, curriculum development, student data analysis, cultural competency training, and peer evaluations improve teacher effectiveness. Increased teacher participation in these activities is associated with positive outcomes for students. Teachers often do not have enough time during the school year to complete these activities, which can lead to feelings of “excessive workload” and negatively affect teacher retention rates.

Key educational stakeholders have expressed concern regarding teacher recruitment and retention in light of the 2013 changes to the North Carolina education budget. Interviewees agreed that moving teachers to 12-month contracts would positively impact recruitment and retention, while making teachers' employment and salary schedule more comparable to that of other state employees. Stakeholders also indicated that the proposal may face substantial political obstacles due to budget constraints and concerns from the tourism lobby.

Analysis of survey data indicates that teachers and administrators are amenable to a switch to 12-month contracts and that 12-month contracts would improve teacher retention. Data from both surveys indicate that teachers need more time to engage in professional development activities. Many teachers responded that they complete a significant amount of work during the summer for which they are not compensated, such as curriculum development and lesson planning for the upcoming school year. Extending contracts to 12 months would compensate teachers for work that they are already completing and provide more time for these activities.

Transitioning to 12-month contracts for all teachers in North Carolina requires two additional months of pay for approximately 96,000 teachers. Our analysis indicates that implementing the proposal would cost roughly \$644 million per year in increased compensation alone. Other costs of the proposal would include increased facilities administration demands and opportunity costs incurred by teachers working an additional two months.

V. Recommendations

Our analysis indicates that pilot programs could be most effective if targeted at:

- Teachers with 1-6 years of experience
- Teachers at specific grade levels
- Schools with the highest teacher turnover rates

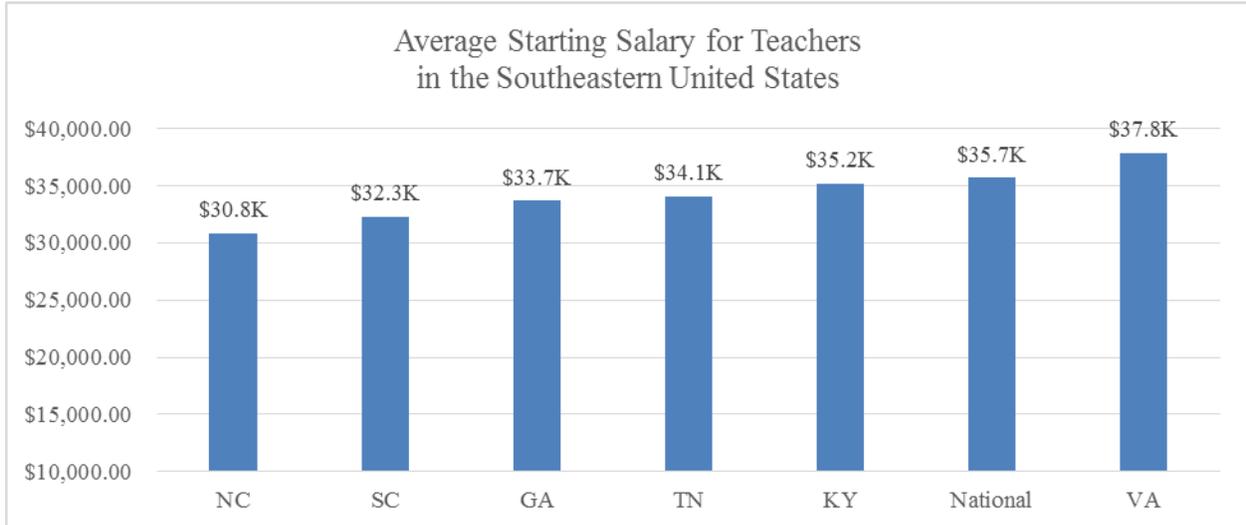
Policy Question

What are the advantages and disadvantages of moving contracts for teachers in North Carolina from the current 10-month contract to a 12-month contract?

Background

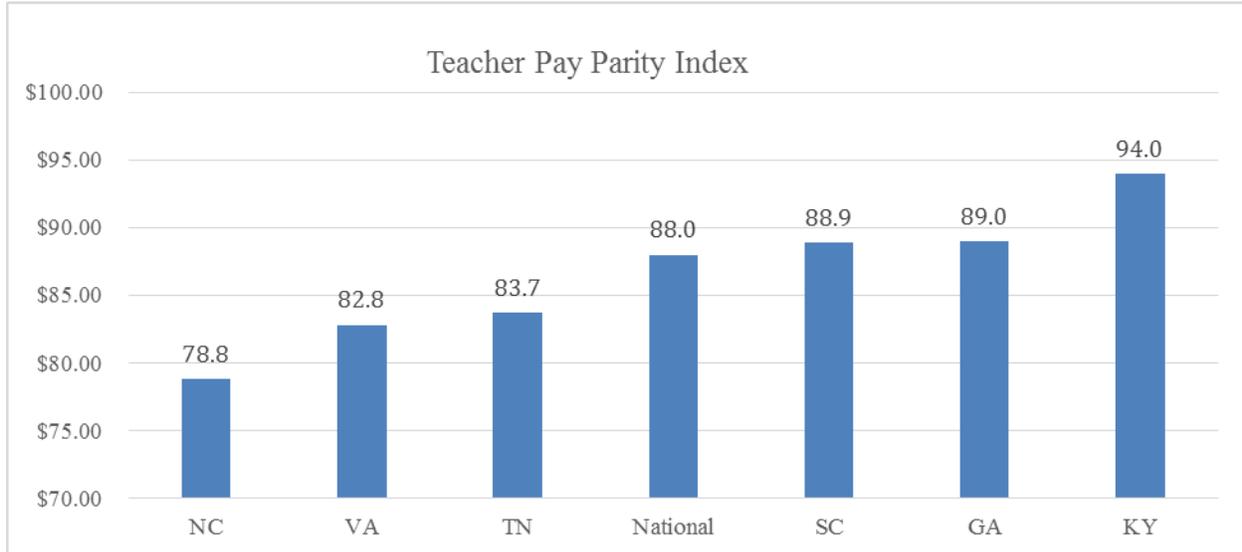
Recruiting and retaining high quality teachers is a difficult task. That task is made even more difficult when states do not adequately compensate teachers for the work they are doing. Research indicates that teacher retention and recruitment problems occur for many reasons, such as retirement, school staffing actions, and job dissatisfaction. Approximately 25% of teachers who leave the profession do so due to job dissatisfaction, and the number one reason listed for dissatisfaction is poor salary (Ingersoll, 2001). There is a positive correlation between teacher salaries and teacher retention, with retention being stronger in areas where teachers are paid more (Guarina, Santibanez, and Daley, 2006). Research also suggests that teacher salaries, at the very least, must be competitive with those of neighboring states (Allen, 2005). Currently, North Carolina has the lowest starting teacher salary in the region when compared to South Carolina, Georgia, Tennessee, Kentucky and Virginia (Figure 1). In addition, there have been anecdotal reports of teachers commuting to Virginia because of its higher rate of compensation (News and Record Editorial Staff, 2014).

Figure 1



The North Carolina salary schedule for teachers is also low when compared to similar professions within the state. The teacher pay parity index measures teacher pay against pay for other comparable professions. The scale of the index ranges from 1 to 100, with 100 signifying that teacher pay is equal to that of comparable professions, which include clergy, physical therapists, nurses, and accountants. Comparisons are made based on education level, average hours worked, and a variety of other factors. North Carolina has the lowest teacher pay parity index in the country (78.8), and its score is significantly lower than that of other states in the region (Education Week Table, 2008). This means that when professionals in comparable fields are making \$1.00, teachers in North Carolina are only making \$0.78 (Figure 2).

Figure 2



Teacher turnover typically follows a U-shaped curve, with high rates of attrition for new teachers, a general flattening of the turnover rate for mid-career teachers, and an increase in the rate again as teachers near retirement age (Guarino, Santibanez, and Daley, 2006). The current salary schedule, however, does not compensate teachers effectively to reduce the pattern of early attrition. Teachers in the state receive the most significant pay increases toward the middle of their careers. Research also indicates that more qualified teachers have higher rates of turnover (Lanford, Loeb, and Wyckoff, 2002), which is a cause for concern in North Carolina due to recent legislative changes that ended pay increases for teachers with master's degrees. Teachers who were previously compensated for their education may have better-paying opportunities in other careers where level of education is factored into their compensation.

On February 10, 2014, Governor McCrory proposed raising teacher salaries by 13% for those who have been teaching for fewer than 10 years. In North Carolina, there are about 42,000 teachers who would be eligible for pay increases under the governor's plan. The plan would raise base pay for beginning teachers from \$30,800 to \$35,000 by the 2015-2016 school year.

The impetus behind the plan is to make North Carolina more competitive with surrounding states with respect to starting teacher salaries. The plan would cost North Carolina roughly \$200 million dollars over two years (Bonner and Stancill, 2014). While the governor's plan addresses one aspect of recruiting and retaining early career teachers, it may not offer a solution for recruiting and retaining teachers of all experience levels. It also may not be directly associated with positive outcomes for students or long-term positive outcomes for teaching professionals.

To address the recruitment and retention concerns, the North Carolina Department of Public Instruction has proposed extending teacher contracts from 10 months to 12 months. The 12-month teacher contract would employ teachers for an additional two months, compensating them at their current salary schedule over that time span. The rest of this report will provide a comprehensive analysis of the advantages and disadvantages of this policy proposal. In addition, our team will also identify ways that the policy might be successfully implemented and propose best practices regarding the work that teachers would conduct during the additional two months.

Methods

Our team employed a multi-faceted approach to exploring the advantages and disadvantages of moving teachers from 10-month contracts to 12-month contracts. We began by investigating whether or not 12-month contracts had been implemented in other states or districts. We found that this policy for teachers has not been implemented at the state or district level anywhere within the U.S. While districts are able to compensate teachers for additional work completed in the summer months, this additional compensation does not constitute a contract extension. We then conducted an extensive literature review focused upon best practices for teacher recruitment, retention, and student achievement. The goal of this review

was to identify what activities would be most beneficial for teachers to engage in should the state employ them for an additional two months during the summer.

Next, we conducted interviews with stakeholders in the education community to gather their opinion regarding a move to a 12-month contract. We questioned stakeholders as to whether or not a policy of 12-month contracts would benefit the state's education system, its teachers and its students. They were asked to offer their opinion on what teachers should do with the additional two months of employment in the event of implementation. Stakeholders were asked to identify any potential problems they foresaw with a 12-month contract, particularly with respect to the logistical and political feasibility of the policy. Additionally, interviewees offered an assessment of the potential for the policy proposal to improve public opinion regarding the teaching profession.

Following our interviews, our team conducted two separate surveys to gauge teacher and administrator preferences in North Carolina. These surveys were administered to 95,000 teachers and 5,240 administrators in the state, respectively, to gather their perspective on the proposal to extend teacher contracts to 12 months. Our survey was distributed through Duke Qualtrics Survey Software, via email, to all teachers and administrators on DPI's listserv. We received survey responses from approximately 10,600 teachers and 480 administrators. Based on this response rate for teachers, our teacher survey has a margin of error of +/- 2% at a 99% confidence level. Our administrator survey has a margin of error of +/- 5% at a 99% confidence level. Our survey sample size at these confidence levels allows us to draw conclusions regarding the broader populations of teachers and administrators.

Using the data from both of our surveys, we conducted regression analyses of our results in order to identify correlations among responses. This analysis allows us to identify patterns in

the data while controlling for different demographic characteristics. Our survey allowed us to gather data on teacher and administrator experience, level of education, and grade level taught or supervised. We then analyzed teacher and administrator preferences regarding 12-month contracts, job satisfaction, time needs, and best practices while controlling for the demographic differences amongst survey respondents. To conclude our analysis of survey results, we considered the correlations revealed by our analysis to identify recommendations for implementation strategies. Our recommendations consist of pilot programs within teacher or school groups where 12-month contracts could be particularly useful or well-received.

Finally, we examined the potential financial costs that the state would incur if teacher contracts were extended for an additional two months at current salary levels. Twelve-month contracts would require all teachers within the state, approximately 96,000 individuals, to be compensated for an additional two months of work. To determine how much of an additional burden this policy would be on the state's finances, our team examined the 2013-2014 North Carolina Public School Budget Highlights. We calculated how many teachers are currently paid at each level on the salary schedule and divided their current annual salary by .8333 to reflect an additional two months of pay.

Findings

When we applied our methods to the policy question, we were able to determine specific advantages of the proposal to move teachers from 10-month contracts to 12-month contracts. Best practice research indicates that there are several opportunities for teacher labor outside of the classroom. Our review of best practices also indicates that these opportunities are correlated with positive outcomes for students. Analysis of our survey data reveals that teachers responded

that they complete a significant amount of work for which they are not compensated. They also indicated that they need more time to engage in professional and curriculum development. Two additional months of employment would give teachers the time that they need to engage in this valuable work. Finally, stakeholder interviews support our survey results and best practices research.

Best Practices

Best practice research indicates that professional development is one of the most valuable opportunities for teacher labor outside of the classroom. This research, however, indicates that professional development is only effective if it has three key characteristics: lasts several days or longer, focuses on subject-matter specific instruction, and is aligned to the instructional goals and curricula in teachers' schools (Hill, 2007; Garet et al., 2001). Professional development during the two additional contracted months could easily fulfill all three requirements to make it effective. Several studies conducted to measure the impact of effective professional development programs on teacher performance have found that teachers who engaged in professional development with the three identified characteristics above were able to raise student test scores by a full standard deviation or more (Hill, 2007).

Another form of professional development that many teachers select to complete during the school year is the National Board of Professional Teaching Standards (NBPTS) certification, often referred to as "board certification." There is limited research on the relationship between board certification and student achievement, but one study does find a small positive correlation (Hill, 2007). Teachers could spend some of the additional two months of work on obtaining board certification. There is also a strong research base that demonstrates that improved

professional development leads to better teacher retention and recruitment (Brill and McCartney, 2008).

The best practice literature also indicates that, if teachers are able to enhance expertise in their field, they may be more able to craft interesting and relevant lessons for students. Another area where teachers are often unable to devote time during the school year is content-specific development. Content-specific training refers to providing professional development or coursework to teachers in particular content areas. For example, an English teacher could take a graduate-level English course, or a high-school Biology teacher could take additional courses in Biology to gain more knowledge about his or her subject matter. Content-specific graduate programs are shown to improve student outcomes (Hill, 2007). Two additional months of employment would give teachers the time that they need to complete content-specific training.

In addition to professional and curriculum development, two additional months of employment would give teachers the opportunity to engage in cultural competency training. Cultural competence refers to a teacher's awareness of his or her own culture and the ways that he or she values or responds to cultural differences (Dee, 2012). A "culturally competent" teacher values and celebrates diversity in the classroom. One result of a predominantly white teacher workforce is that cultural competency is not always prioritized. Cultural competency training will become ever more important in North Carolina, as its Hispanic population is currently the nation's sixth fastest growing (Mann and Zapala, 2011). Expanded cultural competency training could easily be facilitated during the two additional contracted months of employment, and this training could help prepare teachers for a rapidly changing student population.

The literature also suggests that one of the major causes cited for high teacher turnover is “excessive workload” (Brill and McCartney, 2008). Teachers often do not receive time during the school year to make curriculum adjustments and reflect on the effectiveness of their teaching methods. Instead, teachers are expected to make those adjustments during the summer and return at the beginning of the next school year ready to teach. Since they are not paid during the summer, some teachers may choose not to plan curriculum or work on professional development over the summer. This could result in teachers being unprepared for the following school year when their new 10-month contract begins. Unofficially requiring teachers to work without pay over the summer could be a contributing factor to those feelings of excessive workload.

Throughout the school year, teachers have few opportunities to receive meaningful feedback from their peers and little time to adjust their teaching practices based on that feedback. A study evaluating the impact of a teacher evaluation system in Cincinnati supports the conclusion that teachers are much more effective after evaluations, especially in the year immediately following an evaluation (Taylor and Tyler, 2012). In addition, the positive effects of evaluation are largest for teachers who receive more critical feedback and demonstrate the most room for improvement (Taylor and Tyler, 2012). The study cites the additional personnel costs of the program as making it difficult to conduct during the school year, but these costs could be mitigated by the extension of teacher contracts. Additional research indicates that well-organized teacher mentoring programs are the most effective way to improve teacher recruitment and retention (Brill and McCartney, 2008).

Stakeholder Interviews

We attempted to conduct interviews with a wide variety of organizations with differing opinions about North Carolina education policies and succeeded in speaking with both liberal

and conservative organizations. Interviews with members of the North Carolina Superintendents Association, North Carolina Principals and Assistant Principals Association, Professional Educators of North Carolina, and the John Locke Foundation, a conservative think tank, all revealed that key stakeholders believe that the North Carolina Public School system is no longer a leader in public education. Interviewees expressed dismay regarding how the state government has allowed North Carolina's education system to fall behind national averages in teacher salary. Though each individual interviewee did not necessarily express support for the same policies to remedy the current situation, they all indicated that reform of the system is necessary.

Stakeholder interviews support many of the best practices identified in the research. Some individuals suggested identifying master teachers, who would teach only part-time and spend the other half of their contract time creating lesson plans, curriculum, and mentoring opportunities for other teachers. Interviewees also expressed concern about the state's perception of the teaching profession. According to stakeholders, professionalizing teaching involves the creation of a public perception that the labor teachers complete is similar to that of comparable professions, such as other state-salaried positions. Most individuals interviewed also agreed that extension of teacher contracts from 10 months to 12 months would help to further professionalize teaching.

Interviewed stakeholders did express concern about the political feasibility of the contract. During interviews with representatives from the North Carolina General Assembly, the National School Boards Association, and a former Chair of the North Carolina State Board of Education, it was mentioned that political feasibility would be a challenge for implementation. The overwhelming response was that the costs may be too significant to overcome. Other than the issue of cost, concerns were stated about the feasibility of implementing the contract on a

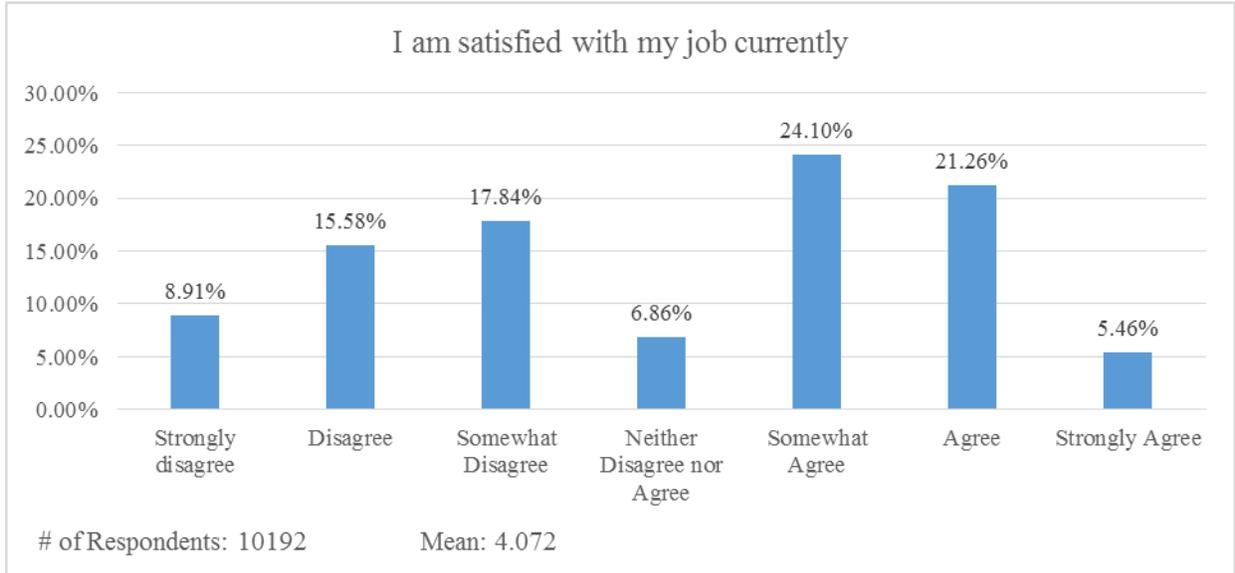
statewide level. Representative Marcus Brandon (D-Guilford) indicated that powerful lobbies like the tourism industry would oppose a 12-month contract because it would be viewed as a move toward year-round schools. Overall consensus on the political feasibility of moving teacher contracts from 10-months to 12-months was that it would be politically difficult, but possible, if implemented strategically.

Survey Results

Twelve-month contracts would give teachers an additional two months to engage in best practice activities outside of the classroom. Our survey data indicate that significant proportions of both teachers and administrators do not believe that teachers currently have enough time to engage in these practices, and that this lack of time is at least somewhat responsible for teacher dissatisfaction and turnover. Teachers also responded that they are completing a significant amount of work for which they are not compensated. Twelve-month contracts for teachers could alleviate this perception by further compensating teachers for work they already complete over the summer.

A majority of teachers indicate that they do not receive enough time for data analysis, curriculum development, or developing teaching methods. Forty-two percent of teachers are also currently at least somewhat dissatisfied with their job.

Figure 3

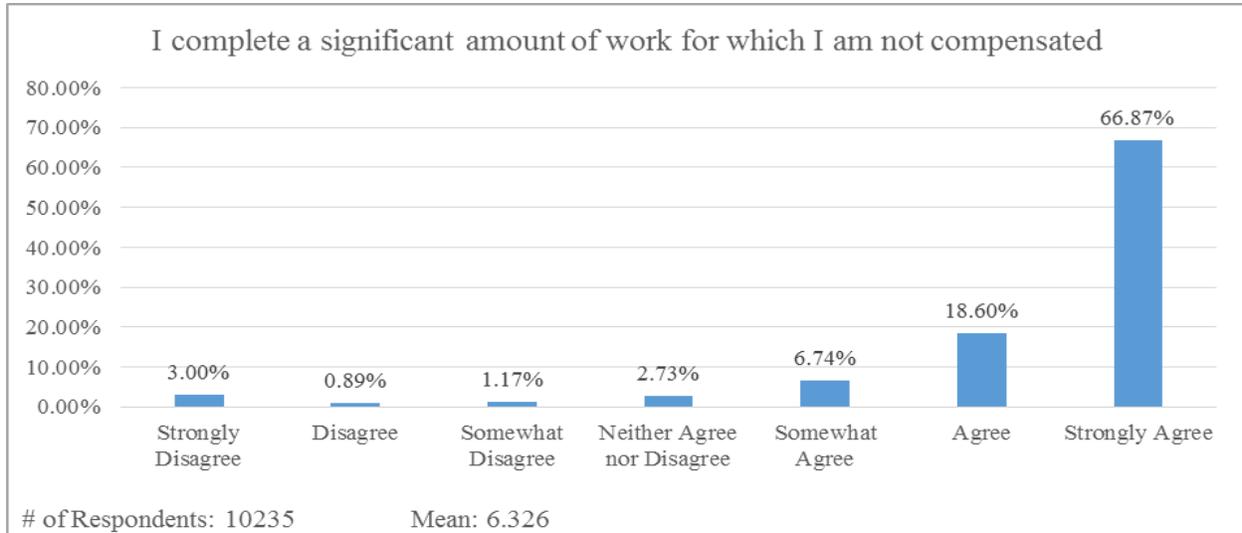


Analysis of teacher job satisfaction revealed that perceptions of job satisfaction and professional development time are positively linked. The more likely a teacher is to respond that they do not receive enough time for professional development, data analysis, or teaching method development, the more likely they are to respond that they are dissatisfied with their jobs. Thus, at least some of teachers' reported job dissatisfaction can be explained by their perceived lack of time for these activities, which a 12-month contract could alleviate (See Table 1 in Appendix C).

Based on the results of our administrator survey, most administrators believe that teachers at their schools do receive enough time for curriculum development, professional development, data analysis, and lesson planning. Significant proportions, however, agreed with teachers in our survey that they do not. Approximately 40% of administrators responded that teachers do not receive enough time for curriculum development. With regards to professional development, roughly 36% of administrators indicated that teachers are not given enough time for professional development.

When it comes to teacher retention, 38% of teachers said that they are less than likely to be teaching in North Carolina in five years, and a large majority (85%) of teachers said that they complete a significant amount of work for which they are not compensated.

Figure 4



Feelings about compensation are predictive of whether one intends to continue teaching in the state. The more likely a teacher is to respond that they complete a significant amount of work for which they are not compensated, the more likely they are to respond that they do not intend to continue teaching in North Carolina in five years. This finding suggests that compensating teachers additionally for work that they are not paid currently to complete could have positive effects on teacher retention in the state (See Table 2 in Appendix C).

Of the 85% of teachers who responded that they complete a significant amount of work for which they are not compensated, 60% of respondents felt that they do not receive enough time for data analysis, and 64% responded that they do not receive enough time for curriculum development.

Figure 5

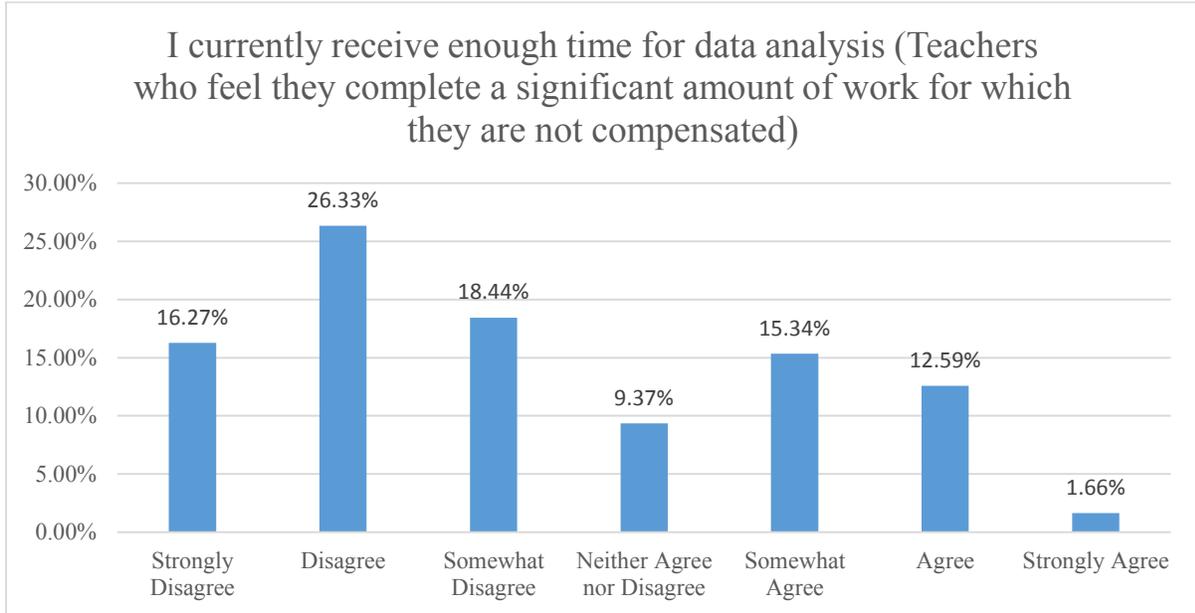
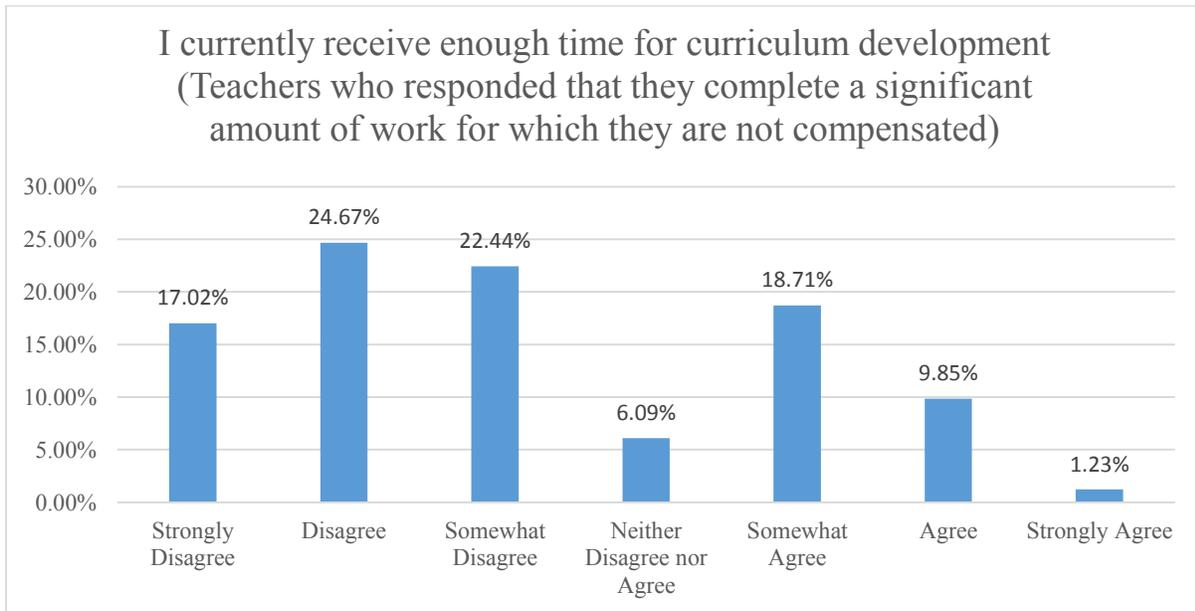


Figure 6

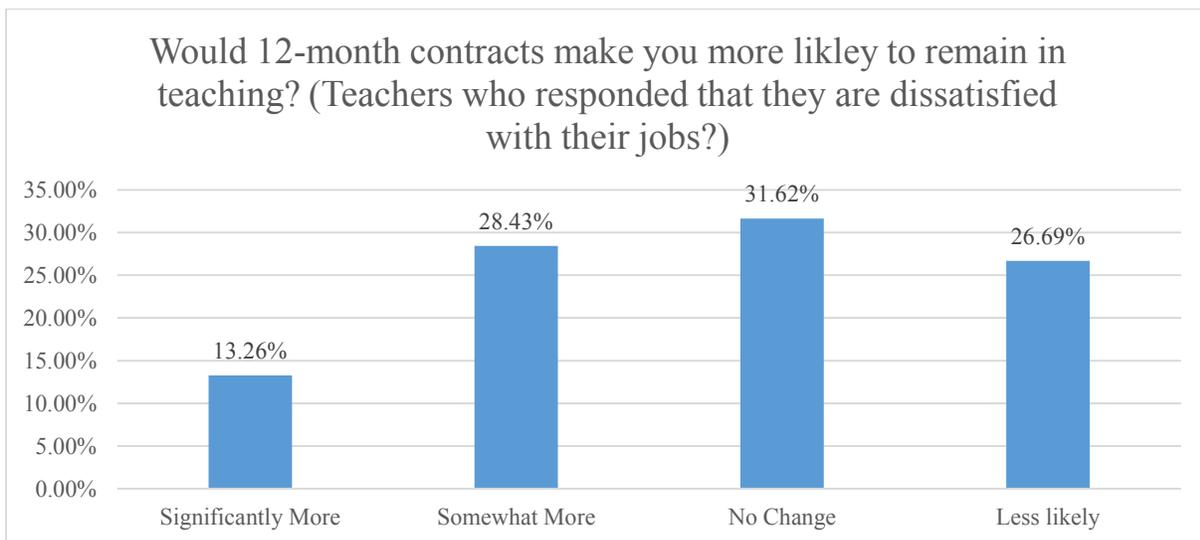


Both of the above figures suggest that teachers complete a significant amount of work for which they are not compensated, and that this work consists of some of the best practice activities that were already identified in this report. Additional data analysis also show that

perceptions regarding the availability of time for data analysis, curriculum development, and methods improvement all positively influence the probability of a teacher responding that they will likely be teaching in North Carolina in five years (See Table 2 in Appendix C). Twelve-month contracts would give teachers more time to engage in these activities, which have been shown to improve student outcomes, and compensate them for the work that they are performing. Based upon these conclusions, the data suggest that 12-month contracts would likely improve teacher retention in North Carolina.

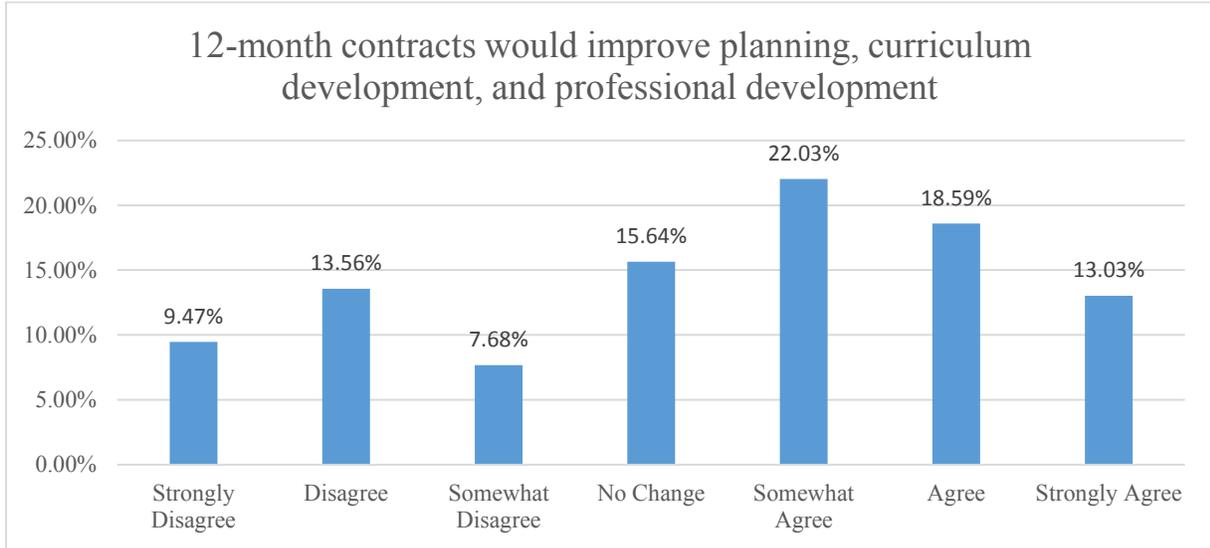
Additional analysis of survey data further supports the claim that the implementation of 12-month contracts would have a clear positive impact on teacher retention. Forty-two percent of respondents answered that 12-month contracts would make them at least somewhat more likely to remain in teaching, with 16% reporting that they would be significantly more likely to remain in teaching.

Figure 7



A significant portion of teachers also responded that they believe a 12-month contract would at least somewhat improve lesson planning, curriculum development, and professional development.

Figure 8



Twelve-month contracts appear to have a measurable, positive effect on those teachers who are most vulnerable to leaving the profession. Forty-two percent of teachers who responded that they are at least somewhat unlikely to still be teaching in North Carolina in five years responded that 12-month contracts would make them more likely to remain in teaching. Likewise, another 42% of teachers who responded that they are at least somewhat dissatisfied with their job also responded that 12-month contracts would make them more likely to remain in teaching.

Figure 9

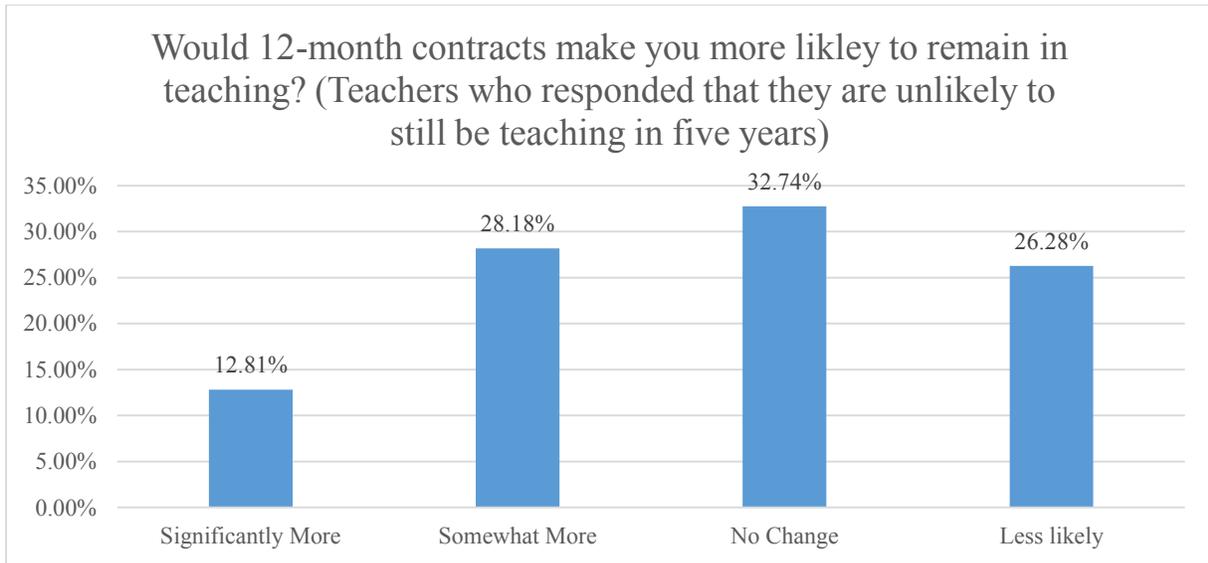


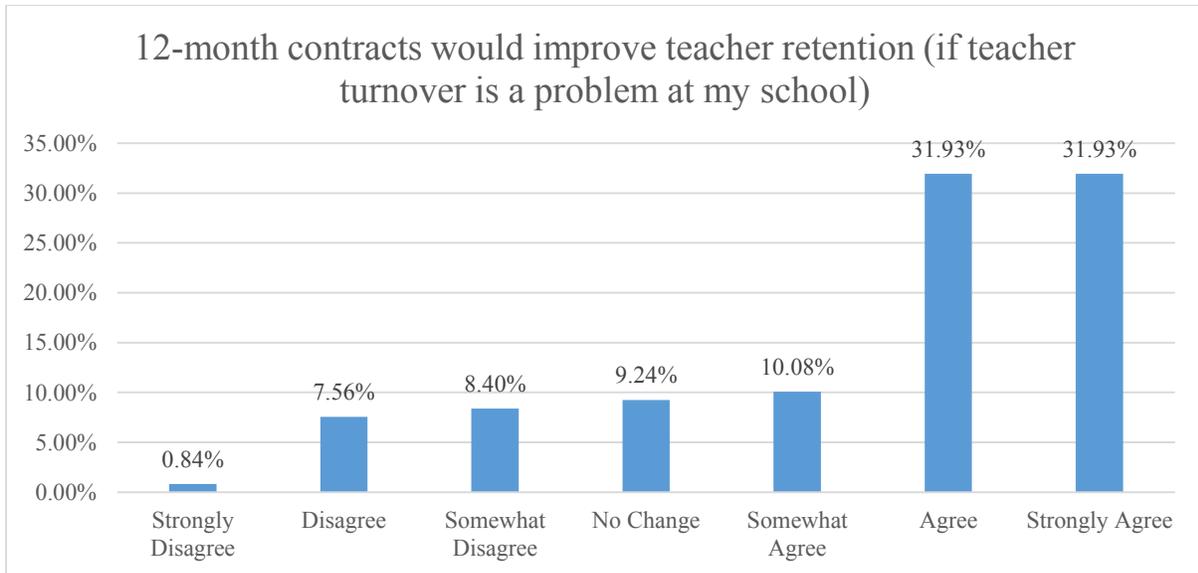
Figure 10



The above graphs all suggest that teachers who are at the highest risk of leaving the profession would respond positively to the implementation of a 12-month contract. Such a policy may have a demonstrable effect on keeping teachers in the profession. Responses to the administrative survey support this conclusion. On matters of teacher retention, 48% of

administrators responded that they believed 12-month contracts would improve teacher retention at their schools. Even more significantly, a large majority of administrators who responded that teacher turnover is a problem at their school agree that 12-month contracts would improve retention.

Figure 11



This would indicate that administrators, particularly those experiencing problems with turnover, believe that 12-month contracts are a way to retain teachers at their school. Further data analysis confirms that administrator responses regarding the prevalence of teacher turnover at their school are correlated with their responses regarding the retention effects of a 12-month contract. The more likely that an administrator responds that teacher turnover is a problem at his or her school, the more likely that they are to respond that 12-month contracts will improve teacher retention (See Table 4 in Appendix C).

Overall, approximately 35% of administrators indicated that teacher turnover is at least “somewhat of a problem” at their school. Data analysis suggests that administrators believe that some of the teacher turnover is explained by a lack of time for professional development.

Twelve-month contracts would provide more time for teachers to engage in this activity.

Administrators at high levels of education are also more likely to believe that teacher turnover is a problem at their school, which could have implications for implementation strategies.

The above analysis indicates that 12-month contracts may have a positive effect on teachers who are at risk of leaving the profession. This potential effect does not appear to come at the expense of alienating those teachers who are satisfied with their jobs and intend to remain teaching in the state. The likelihood that a teacher responded that they would still be teaching in North Carolina in five years is correlated with the likelihood that they responded positively to the idea of a 12-month contract. The same effect is observed with regard to teachers' responses on the question of job satisfaction. The more satisfied a teacher is with their job, the more likely that teacher is support a 12-month contract (See Table 3 in Appendix C).

Of interest are a few other responses regarding teacher support of a 12-month contract that were found to be correlated with how teachers spend the majority of their time during the summer months. Teachers who responded that they spend the majority of their time working another job during the summer, or the majority of their time working on teaching responsibilities, are more likely to support a 12-month contract. This effect is not necessarily what one would expect, but could have significant implications for easing the transition of implementation. Furthermore, the data show that teachers who responded that they spend the majority of their summer time on child care, household activities, or leisure do not show a correlated aversion to 12-month contracts (See Table 4 in Appendix C).

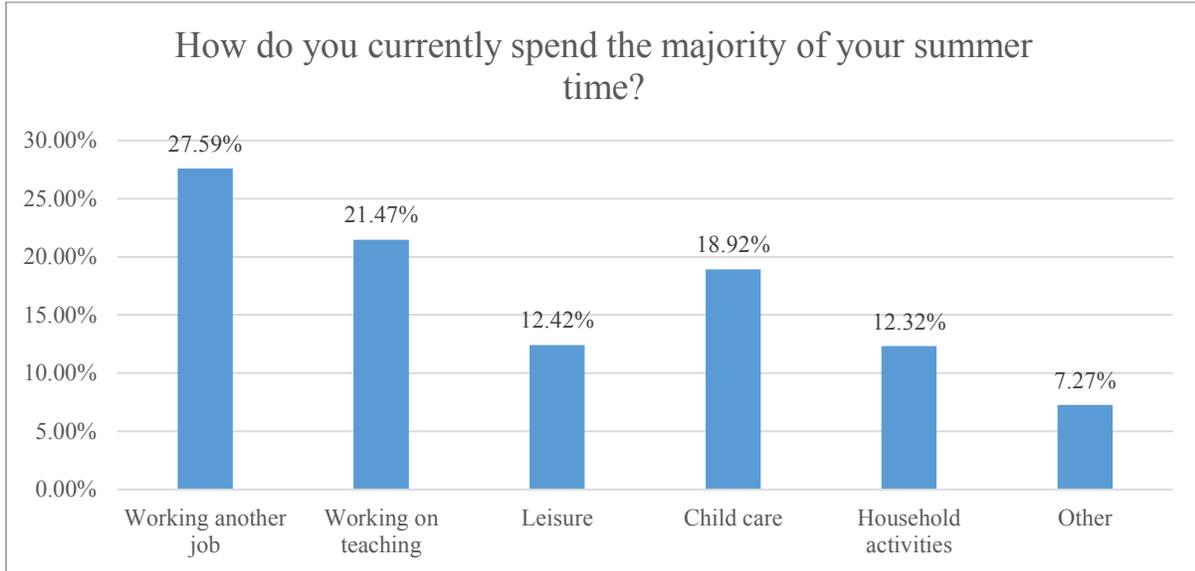
Results from the administrator survey regarding costs indicate that there would be additional financial costs from implementing 12-month contracts. Though principals and janitorial staff are paid on 12-month contracts, assistant principals are paid on 11-month

contracts, so those may need to be extended for one month. Schools are open for most of the summer, with a majority of administrators responding that their school is currently open full-time during the summer months. Additional facility costs would be incurred, however, from having more individuals in the schools, which leads to more electricity and air conditioning use.

According to our survey of administrators, 52% of schools would incur at least a somewhat significant cost increase in order to keep schools open for an additional two months. Thirty-six percent also responded that it would be at least somewhat logistically difficult to implement 12-month teacher contracts at their schools. These costs in total are likely to be minor in proportion to the costs of teacher contracts, but they must be acknowledged nonetheless.

In addition to these quantifiable costs, there are also opportunity costs that teachers would incur if contracts are extended to 12-months. We have identified opportunity costs associated with lost summer wages, increased child care costs, time spent away from family, and emotional well-being. Seventy-three percent of teachers in our survey indicated that they currently receive some other form of income during the summer. Twenty-seven percent responded they spend the majority of their time during the summer employed elsewhere. Another 18% of teachers who work during the summer indicated that they would lose income by extending contracts to 12-months because they are paid at a higher rate at their summer job.

Figure 12



Data analysis indicates that the more teachers are paid from other jobs during the summer, the less likely they are to respond that 12-month contracts would work effectively as a retention tool. This attitude extends to their feelings of how 12-month contracts would improve curriculum development, professional development, and planning, as teachers who are better compensated in the summer indicated that extended contracts would not improve these areas. It should be noted, however, that teachers who spend the majority of their time working during the summer were found to be more responsive to 12-month contracts.

Another 19% of surveyed teachers responded that they spend the majority of their time rearing a child during the summer, while 12% answered that their time is spent on household activities. Teachers who spend a majority of their time engaged in these activities may require their partners to work less during the summer to help with these activities if contracts are extended to 12 months in length. They may have to pay for private child care services as well. Individuals who responded to these two selections anecdotally seem to have very strong feelings about their position, as our team received dozens of emails from teachers expressing their need to

be with their families and children during the summer. It should be noted that spending a majority of one's summer time engaged in these activities has no predictive effect on one's support of a 12-month contract.

Costs Estimates

Significant, additional financial costs would be incurred by North Carolina if 12-month contracts were implemented statewide. Twelve-month contracts require all teachers within the state, approximately 96,000 individuals, to be paid for an additional two months. We found that 12-month contracts would cost the state roughly \$644 million dollars per year in increased compensation alone (See Appendix D). That would require an approximately 8% increase in state appropriations for the total public education budget (NC Public School Budget Highlights, 2014). Additional costs, as mentioned above, would be incurred from facilities management. Our team was not able to accurately quantify these costs at the state-level. It is estimated from administrators' survey responses that these costs could vary widely from school district to school district.

Recommendations

Recognizing that the political and fiscal environment in North Carolina is not currently amenable to a full implementation of 12-month contracts, our team has investigated and developed potential avenues of alternative implementation. These strategies focus on a pilot program approach that would mitigate implementation costs and allow policymakers to gather feedback about the relative effectiveness of a switch to 12-month contracts. With relevant data from our teacher and administrator surveys, we suggest pilot programs for teachers who responded that they do not receive enough time to engage in best practices, teachers who feel

they are not properly compensated for the work they do, or teachers who are more receptive to 12-month contracts.

Applying 12-month contracts to less experienced teachers would be advantageous in several ways. Teachers with less experience are in the greatest need of extra time for curriculum development, professional development, and lesson planning. As was mentioned in the background section, less-experienced teachers have the highest rates of attrition. Twelve-month contracts could have strong effects for developing the “social capital” that is needed to retain the least experienced teachers. Experience level is also a predictor of teachers’ perceptions regarding whether or not they complete a significant amount of work for which they are not compensated. The more inexperienced a teacher is, the more likely he or she is to respond that they complete a significant amount of work for which they are not compensated. A 12-month contract could be used to assuage these perceptions and retain this cohort of teachers (See Table 5 in Appendix C).

Additionally, the data also reveal that teachers with less experience are more receptive to moving to 12-month teacher contracts. The fewer the number of years a teacher has been in the profession, the more likely a 12-month contract is to make that teacher decide to stay in teaching (See Table 3 in Appendix C). This would also be a more cost effective implementation plan. Using the same salary data from the Public School 2013-2014 budget used to calculate the cost of state-wide implementation, implementing 12-month teacher contracts for teachers with fewer than six years of experience would only cost the state approximately \$108 million dollars a year (See Appendix D).

Additional data analysis suggests that targeting different grade levels for pilot program implementation could prove effective. Though survey results seem contradictory at times, in

some instances suggesting that elementary school teachers should be targeted and in other instances suggesting high school teachers should be targeted, we believe the results still make a strong case for a pilot program focusing on specific grade levels. The best practice research suggests that content-specific professional development would be beneficial in a pilot program targeting specific grade levels. Elementary school teachers and administrators both responded so as to suggest that elementary school teachers are most in need of extra time for curriculum development, professional development, and planning. Elementary school teachers were more likely to respond that they do not currently have enough time for these activities (See Table 6 and 7 in Appendix C). Administrators at elementary schools were also more likely to respond that 12-month contracts would improve teacher retention. These administrators were more likely to respond that increased time for these activities would improve retention. (See Table 8 in Appendix C).

The data also suggest that targeting high school teachers may prove effective. High school teachers are more likely to respond that they complete a significant amount of work for which they are not compensated. High school teachers were also more likely to respond that 12-month contracts would make them more likely to remain in teaching. These results suggest that implementing 12-month contracts in a manner that would target teachers in particular grade levels may prove an effective strategy for implementation (See Table 3 and 5 in Appendix C).

A final method for implementation could target schools that experience the highest teacher turnover rates. These schools, having essentially bottomed out in their ability to retain teachers, would have little to lose from attempting 12-month contracts. The benefit would be that it may be easier to observe demonstrable effects on teacher retention that could underwrite broader implementation of the 12-month contract. Schools that have high rates of teacher

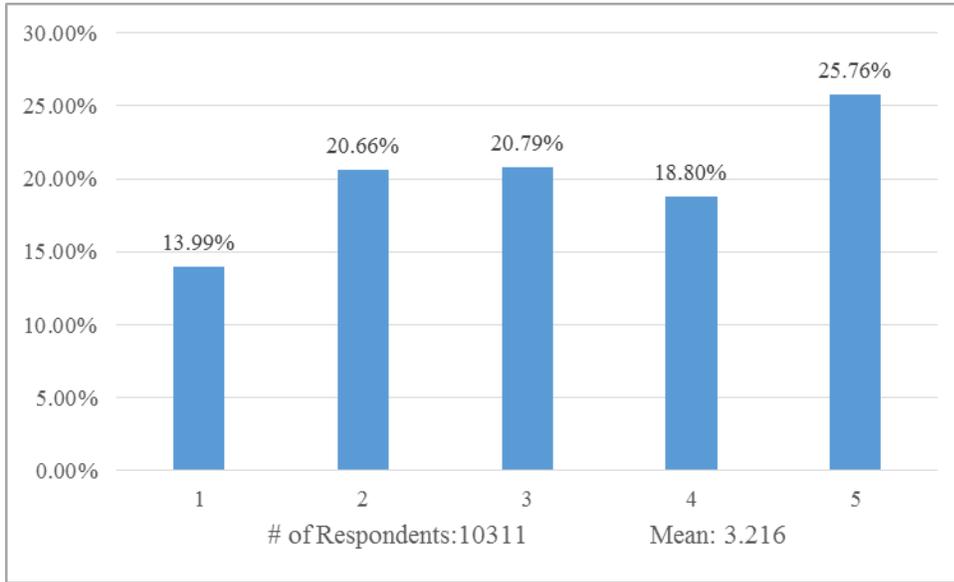
turnover also likely suffer from a lack of professional and curriculum development time. This means that most of these schools need to create an environment that would facilitate increased time for such activities. Two specific best practices that improve teacher retention and recruitment are effective professional development and well-structured teacher mentoring programs. Both of these can be implemented in this pilot program during the additional two contract months.

Data analysis of administrators' receptiveness to 12-month contracts supports targeting schools with high turnover rates. The more an administrator believes that her or his school has a significant problem with teacher turnover, the more likely she or he is to agree that 12-month contracts would improve teacher retention (See Table 8 in Appendix C). The downside to this implementation alternative is that teacher turnover is affected by many issues other than contract length. Schools within the state that have the highest turnover rates are often in very rural or poor areas, and that environment may be a much more significant factor in influencing retention rates. Due to these other factors, implementation of 12-month contracts may not significantly change retention rates at these schools; however, the data suggest that teachers at these schools may have the greatest need for the additional, professional development time that a 12-month contract would provide.

Appendix A: Teacher Survey and Results

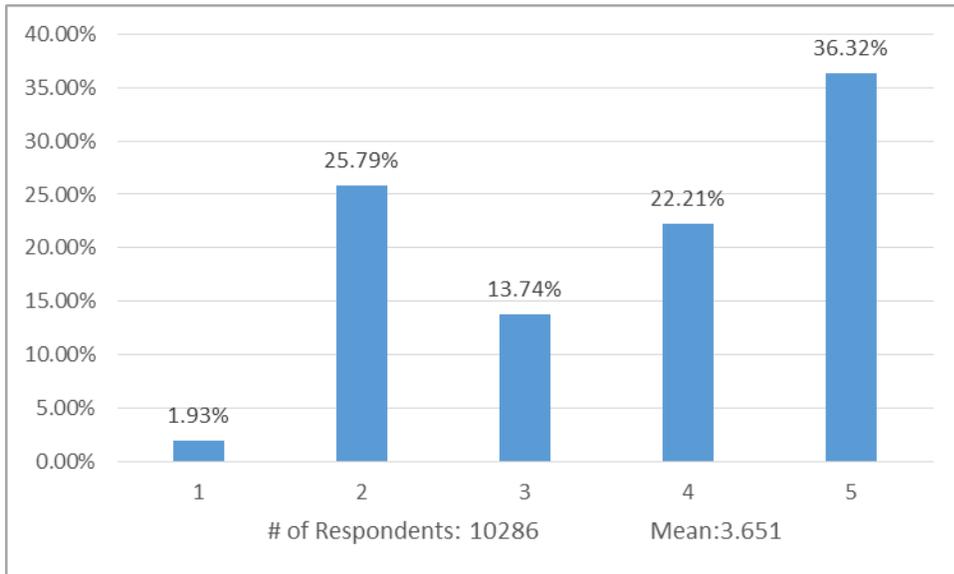
1. How many years have you been teaching?

1: 1-5, 2: 6-10, 3: 11-15, 4: 16-20, 5: 21+



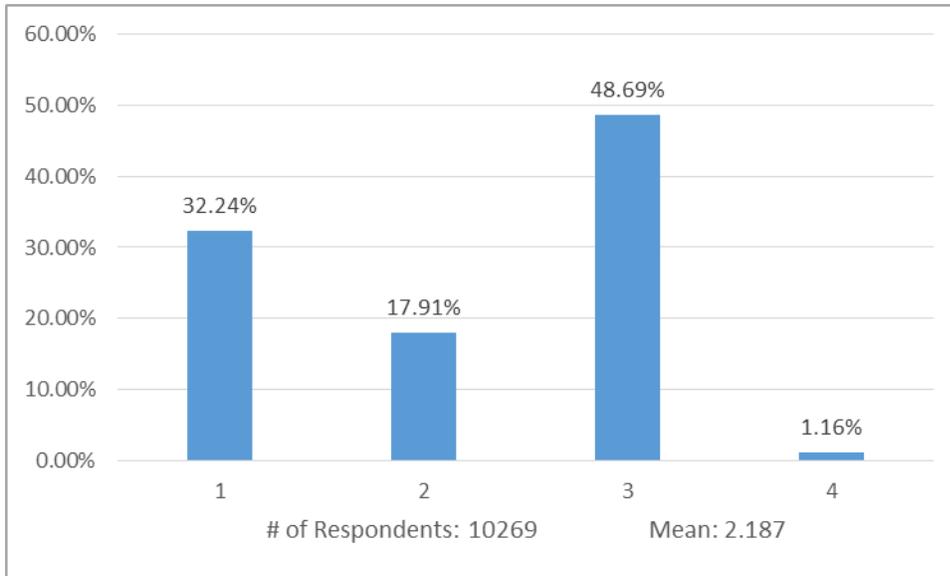
2. What grade level do you currently teach?

1: Pre-K, 2: K-3, 3: 4-5, 4: 6-8, 5: 9-12



3. What is the highest level of education you have obtained?

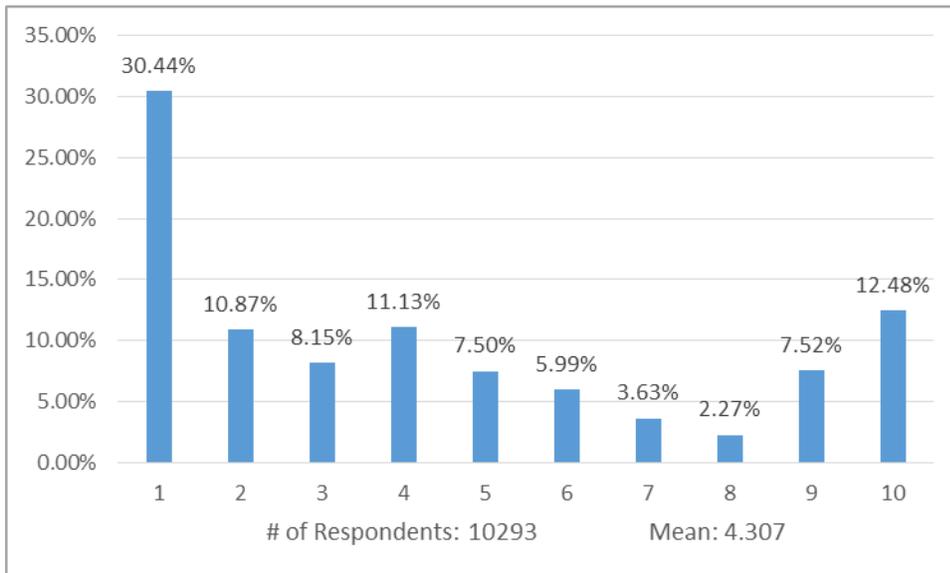
1: Bachelor's Degree, 2: Some Graduate Coursework, 3: Master's Degree, 4: Ph.D.



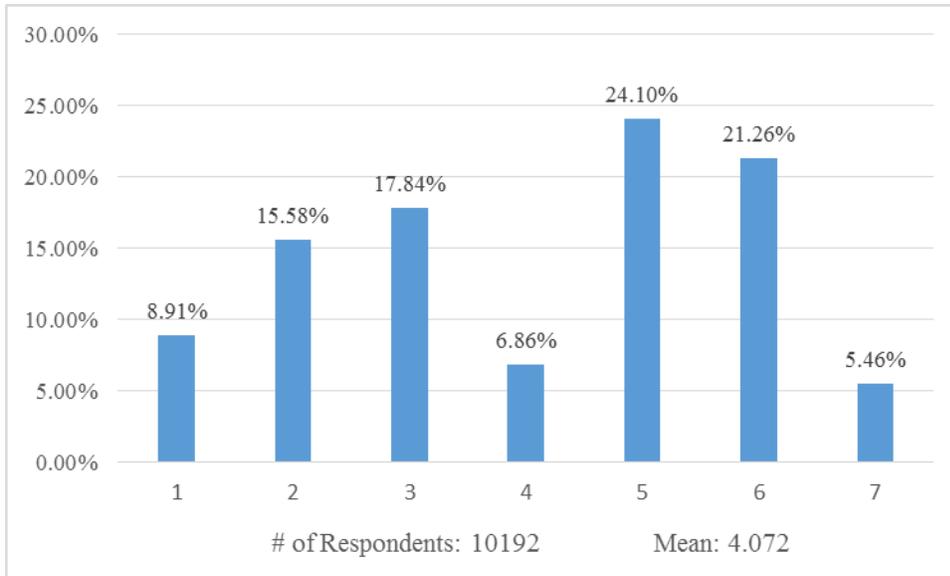
4. What subject do you teach?

1: All subjects, 2: Math, 3: Science, 4: English, 5: Social Studies, 6: Art, 7: P.E., 8:

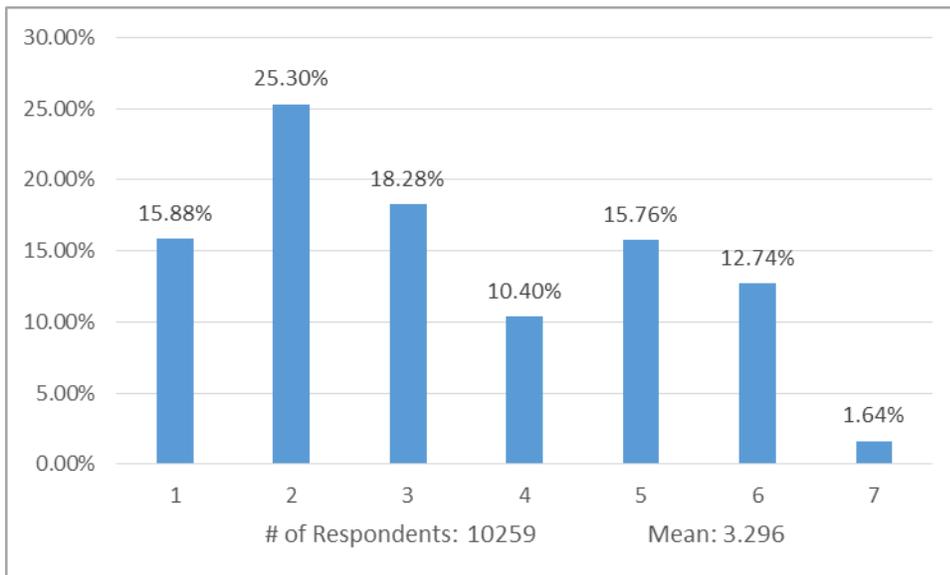
Foreign Language, 9: Career Technical Education, 10: Other



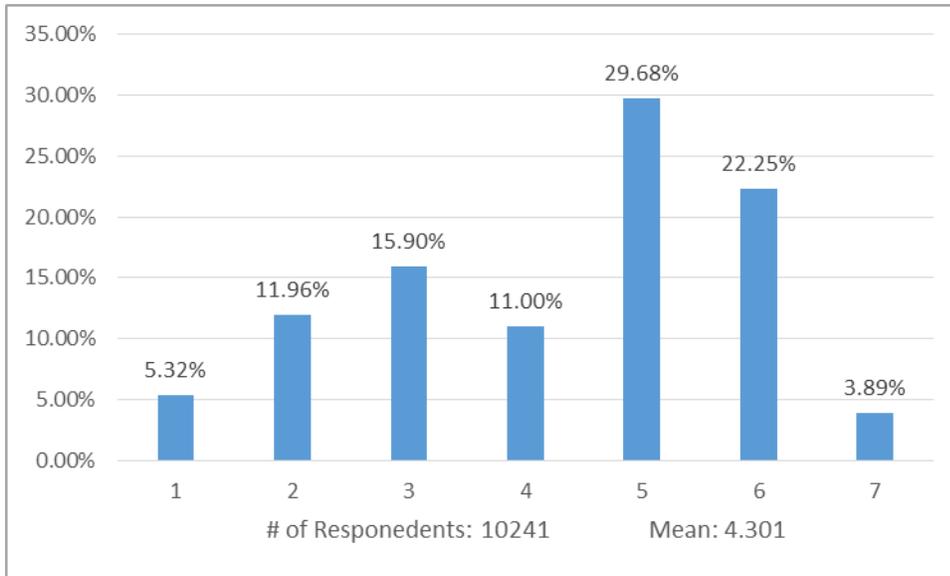
5. On a scale of 1-7, with one being very unsatisfied, and seven being very satisfied, how satisfied are you with your job?



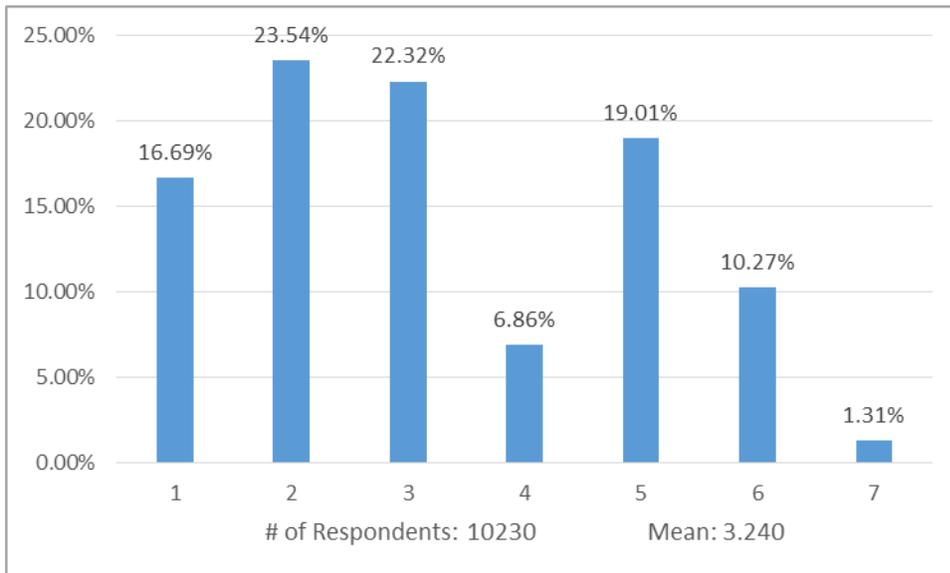
6. On a scale of 1-7, with one being strongly disagree, and seven being strongly agree, do you agree with the statement that you currently receive enough time to analyze student test score data?



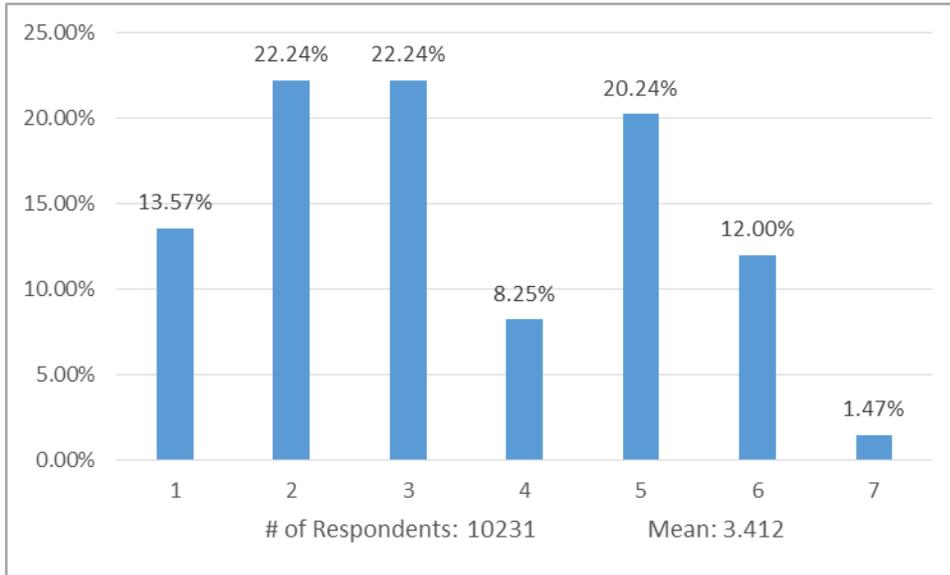
7. On a scale of 1-7, with one being strongly disagree, and seven being strongly agree, do you agree with the statement that you are currently able to implement data-driven instruction?



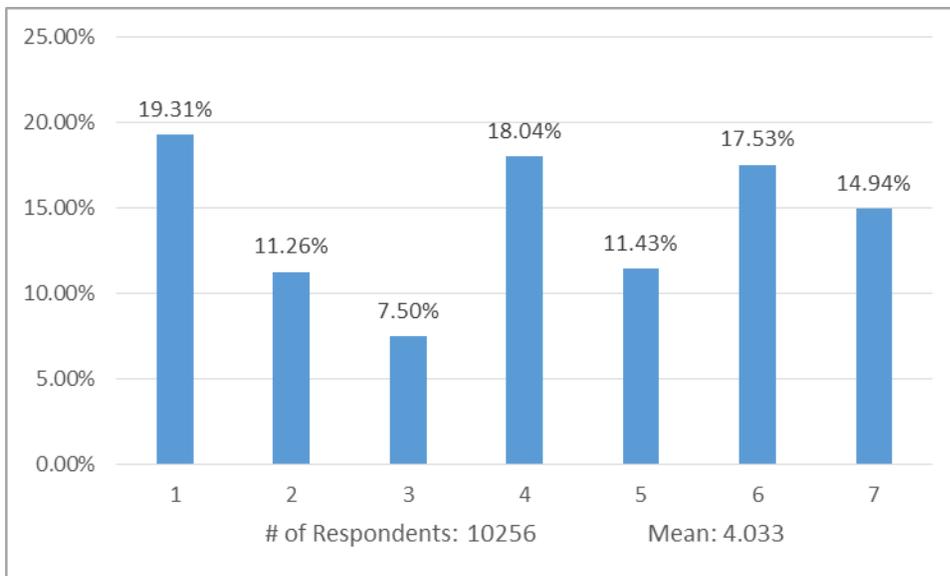
8. On a scale of 1-7, with one being strongly disagree, and seven being strongly agree, do you agree with the statement that you currently receive enough time to develop or improve your curriculum?



9. On a scale of 1-7, with one being strongly disagree, and seven being strongly agree, do you agree with the statement that you currently receive enough time to develop or improve your personal teaching methods?

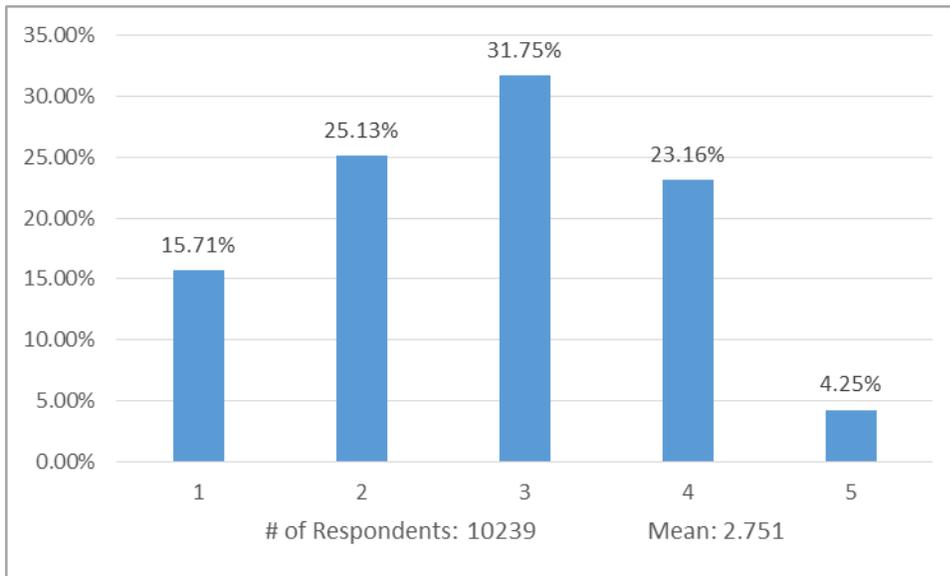


10. On a scale of 1-7, with one being highly unlikely, and seven being highly likely, how likely is it that you will be teaching at your school or at a similar school in North Carolina five years from now?

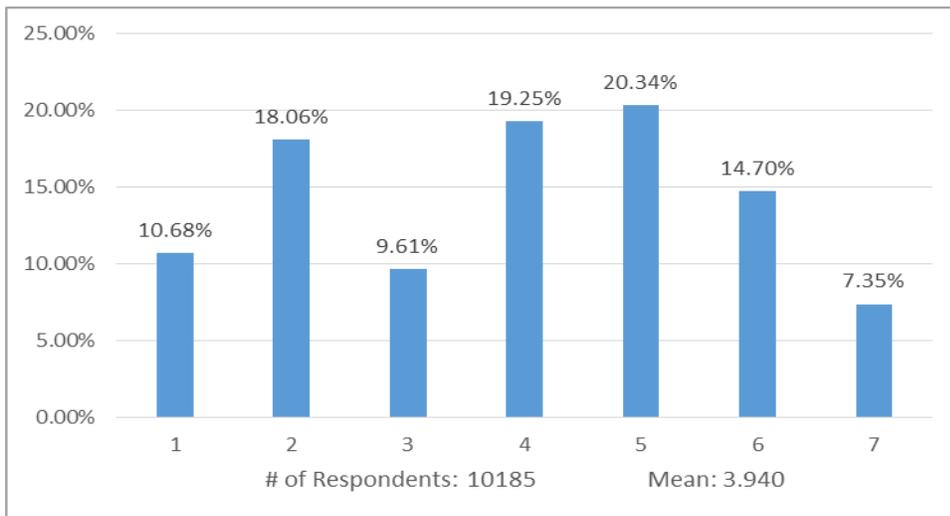


11. Would a move to a 12-month contract, with the additional pay from two extra months of work make it more likely that you would stay in teaching?

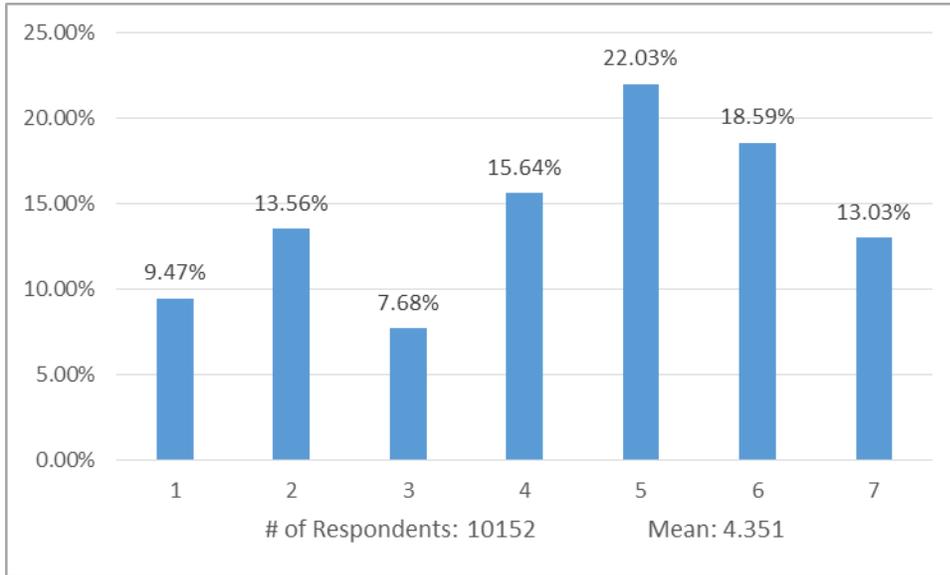
1: Yes, significantly so, 2: Yes, somewhat so, 3: No change, 4: No, less likely, 5: No response



12. On a scale of 1-7, with one being strongly disagree, and seven being strongly agree, do you agree with the statement that a 12-month contract would create a more favorable public opinion of the teaching profession?

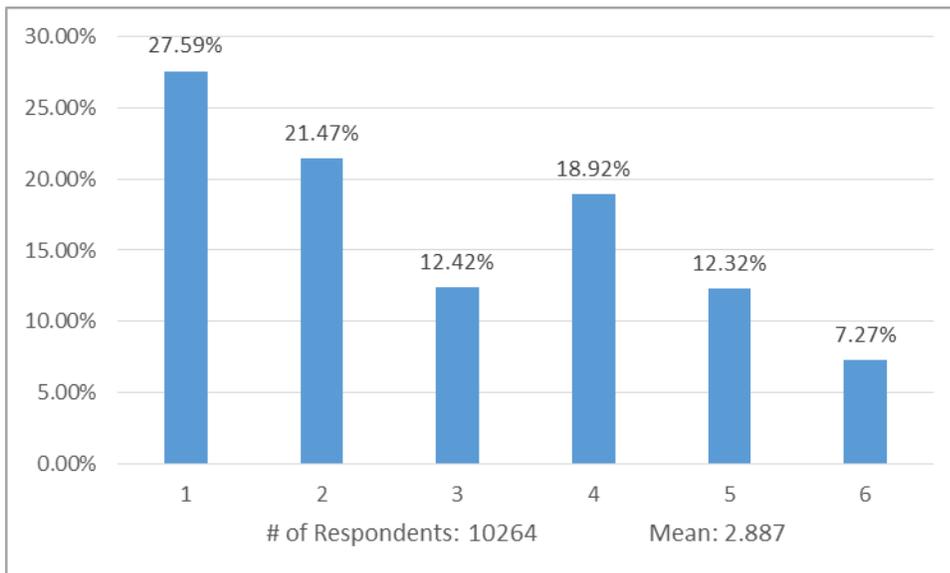


13. On a scale of 1-7, with one being strongly disagree, and seven being strongly agree, do you agree with the statement that 12-month contracts would improve planning, curriculum development, and professional development?



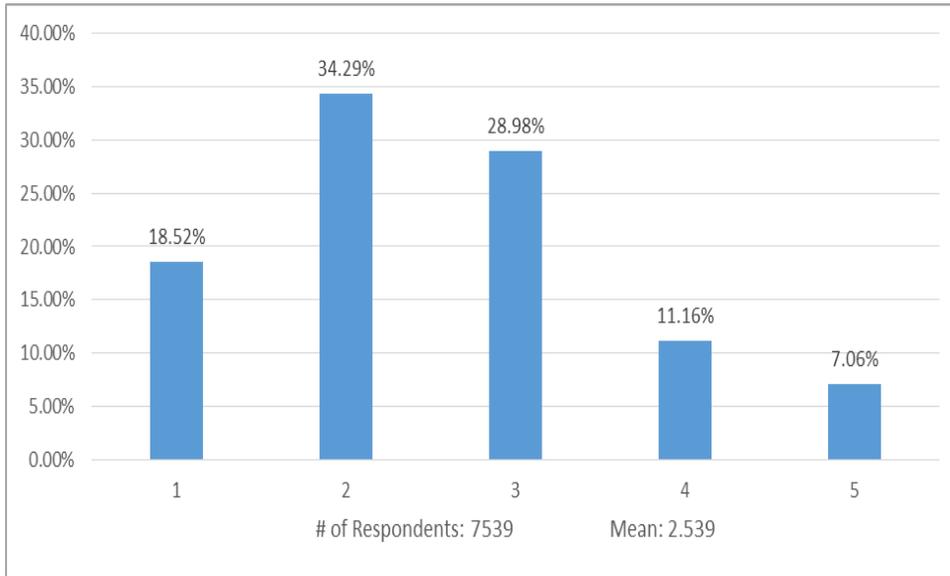
14. How do you currently spend the majority of your time on summer vacation?

1: Working another job, 2: Working on teaching (i.e. curriculum development, professional development, etc.), 3: Leisure, 4: Child Care, 5: Household Activities, 6: Other



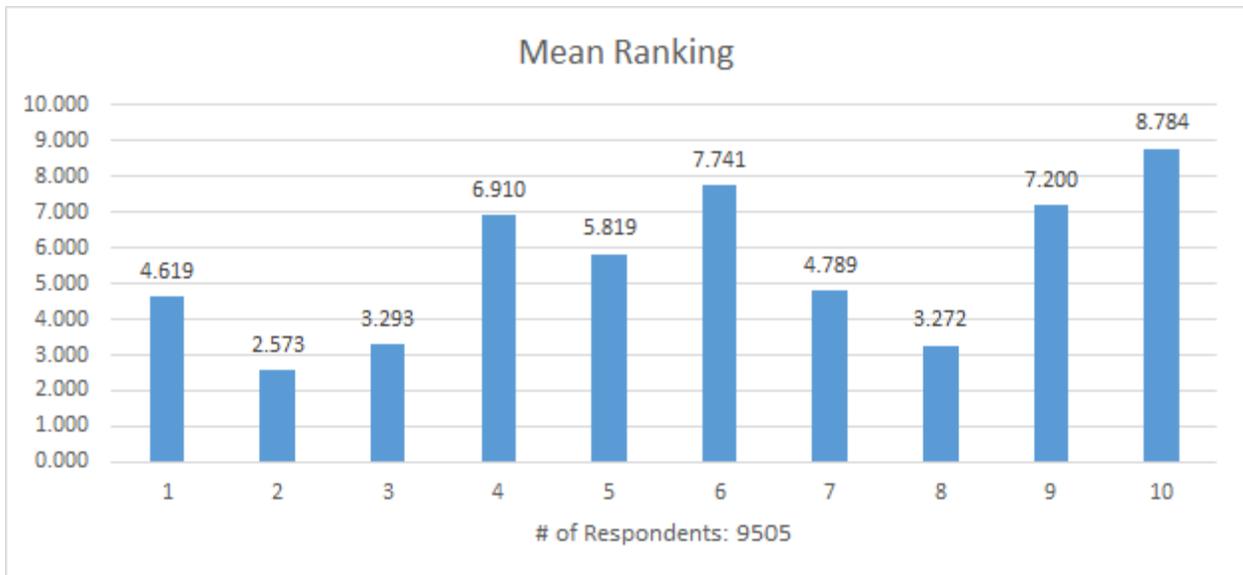
15. If you work another job during summer vacation, would you stand to make more money if teacher contracts were extended to 12-months?

1: Significantly more, 2: Somewhat more, 3: The same, 4: Somewhat less, 5: Significantly less

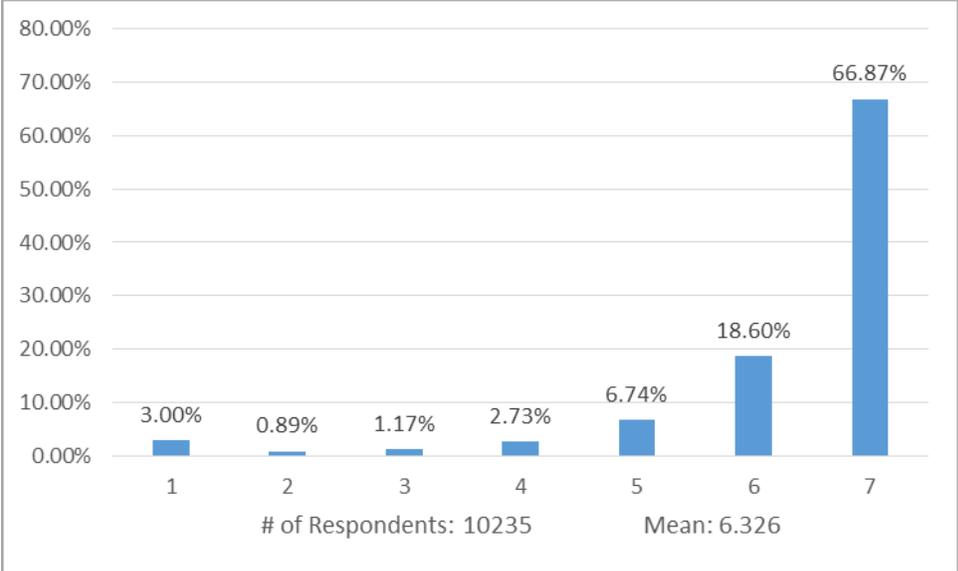


16. Rank the following choices from 1-10 with 1 being most preferred and 10 being least preferred. If teacher contracts were extended to 12-months I would like to spend the additional time doing the following.

- 1: Analyzing test score data, 2: Developing curriculum, 3: Developing new teaching methods, 4: Cultural sensitivity training, 5: Mentoring younger teachers, 6: Being mentored, 7: General professional development, 8: Planning time, 9: Summer school/student teaching, 10: Other



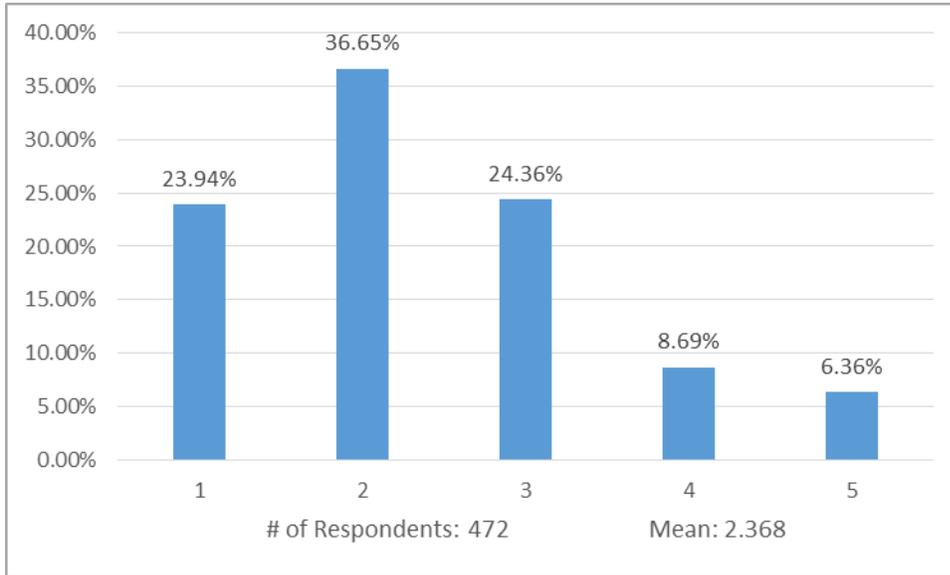
17. On a scale of 1-7, with one being strongly disagree and seven being strongly agree do you agree with the statement that teachers complete a significant amount of work for which they are not compensated?



Appendix B: Administrative Survey and Results

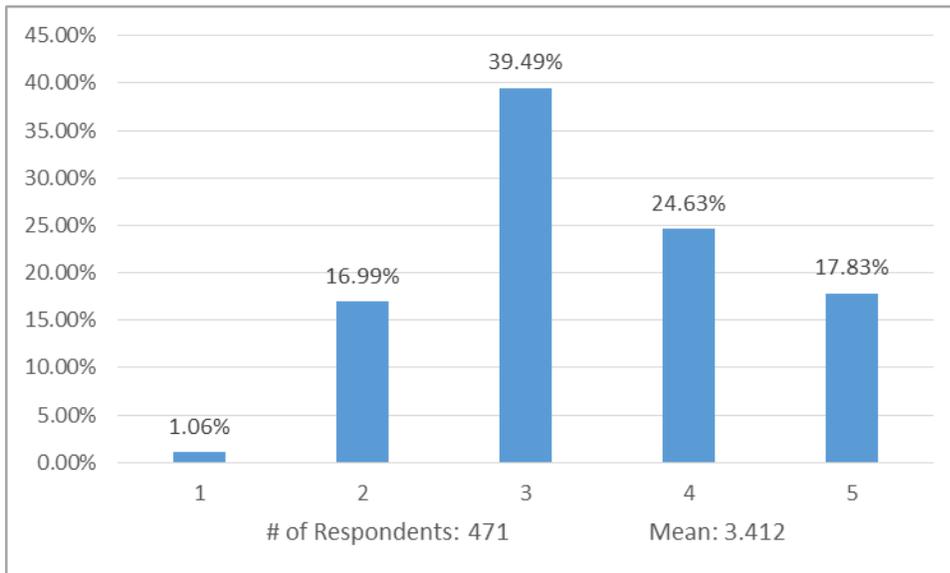
1. For how many years have you been an administrator?

1: 1-5, 2: 6-10, 3: 11-15, 4: 16-20, 5: 21+



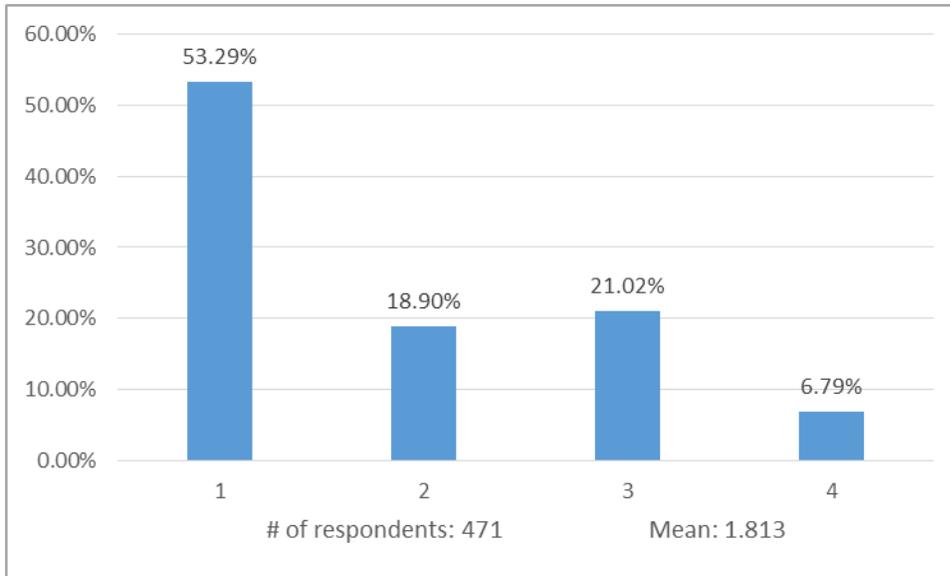
2. For how many years were you previously a teacher?

1: 0, 2: 1-5, 3: 6-10, 4: 11-15, 5: 16+



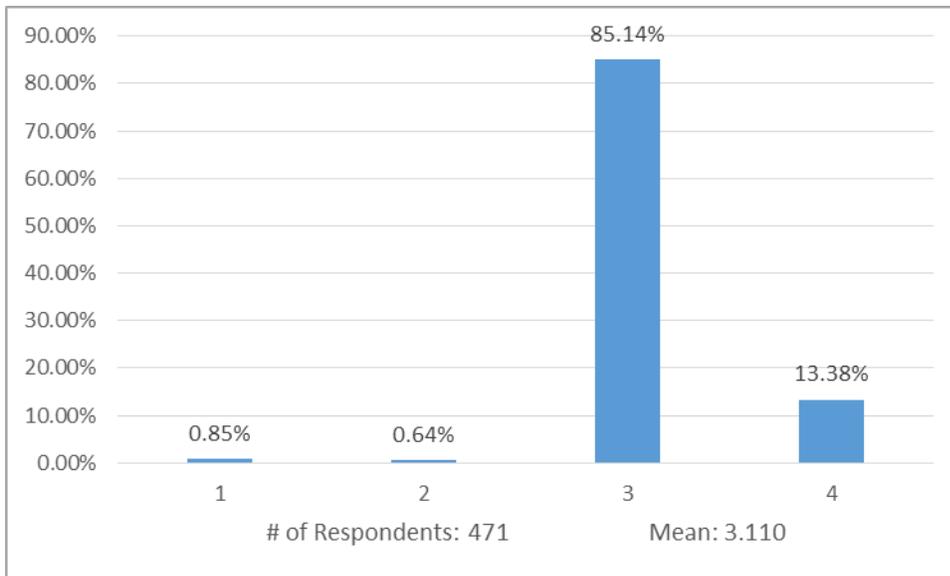
3. At what level of school are you currently an administrator?

1: Elementary, 2: Middle/Junior, 3: High School, 4: Other

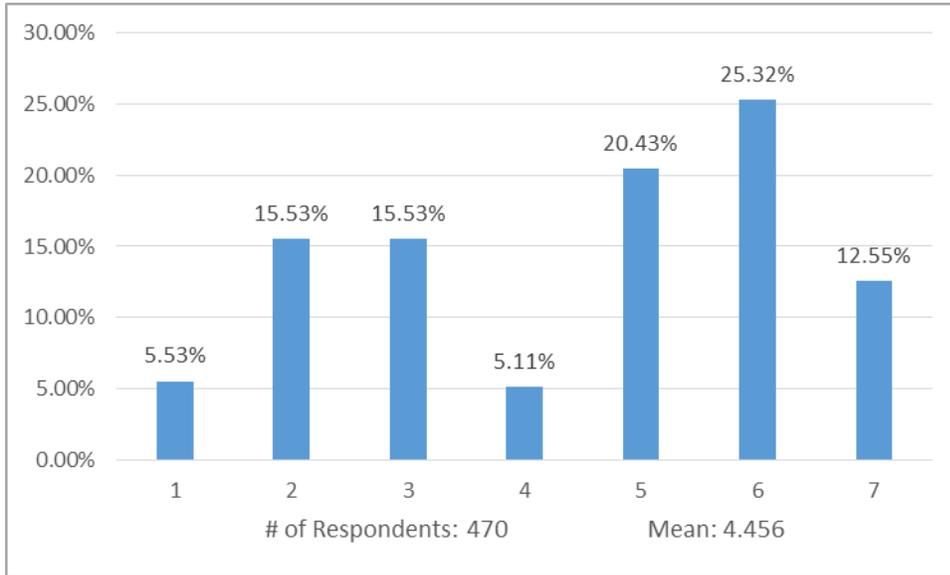


4. What is the highest level of education you have attained?

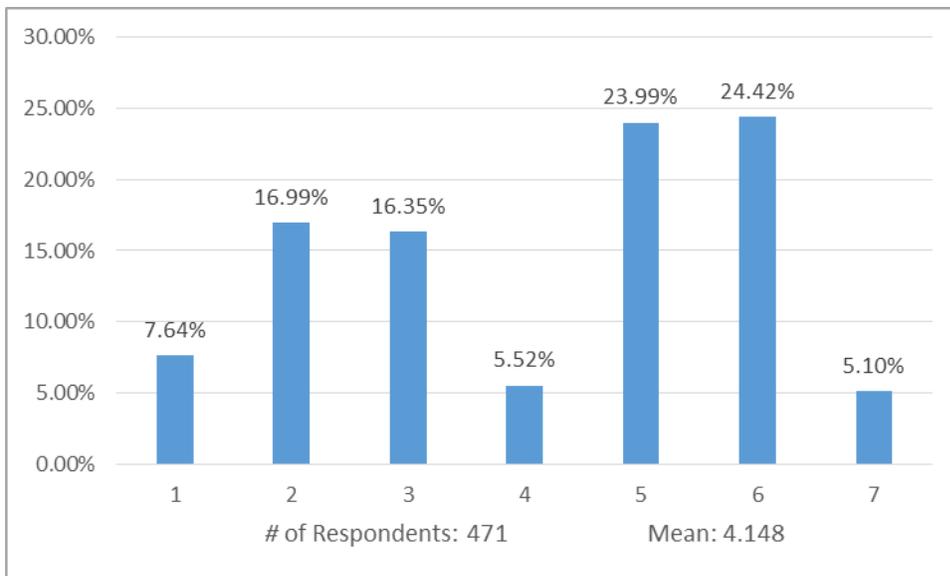
1: Bachelor's Degree, 2: Some Grad School, 3: Master's Degree, 4: Ph.D.



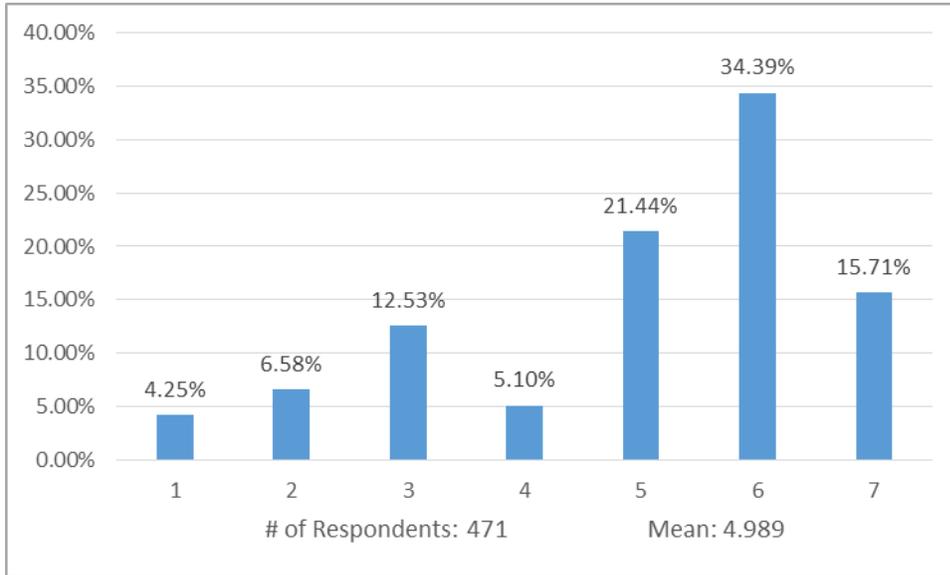
5. On a scale of 1-7, with one being strongly disagree, and seven being strongly agree, do you agree with the statement that teachers at your school currently receive an acceptable amount of professional development time?



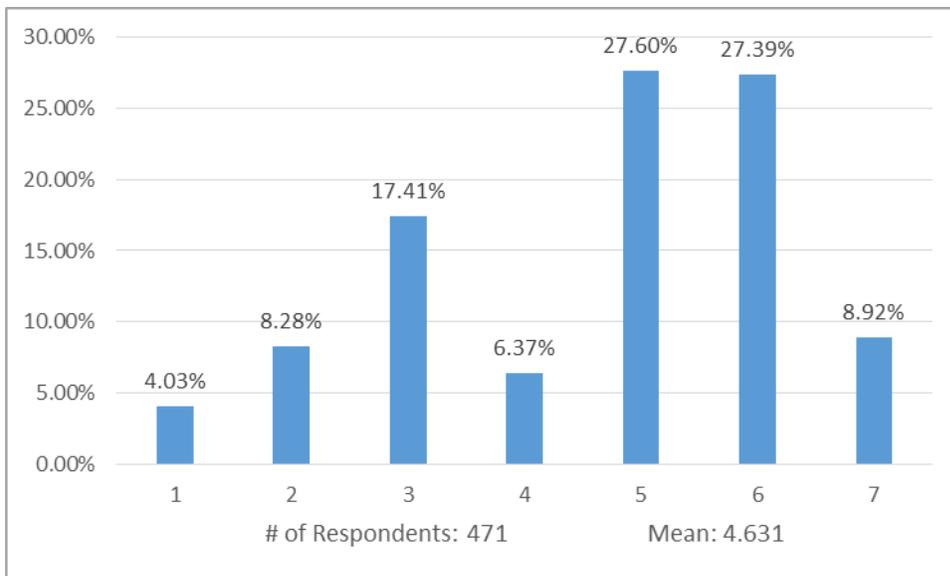
6. On a scale of 1-7, with one being strongly disagree, and seven being strongly agree, do you agree with the statement that teachers at your school currently receive an acceptable amount of curriculum development time?



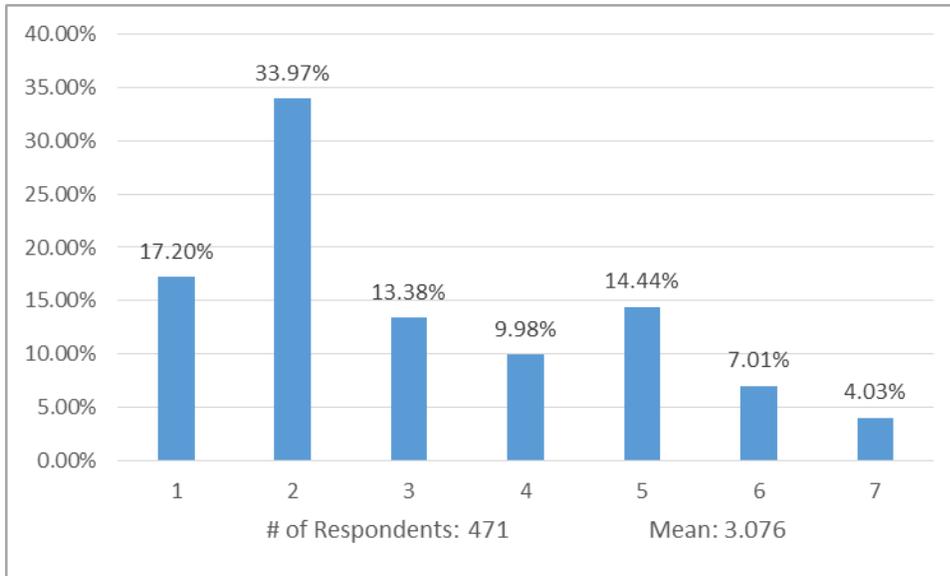
7. On a scale of 1-7, with one being strongly disagree, and seven being strongly agree, do you agree with the statement that teachers at your school currently receive an acceptable amount of lesson planning time?



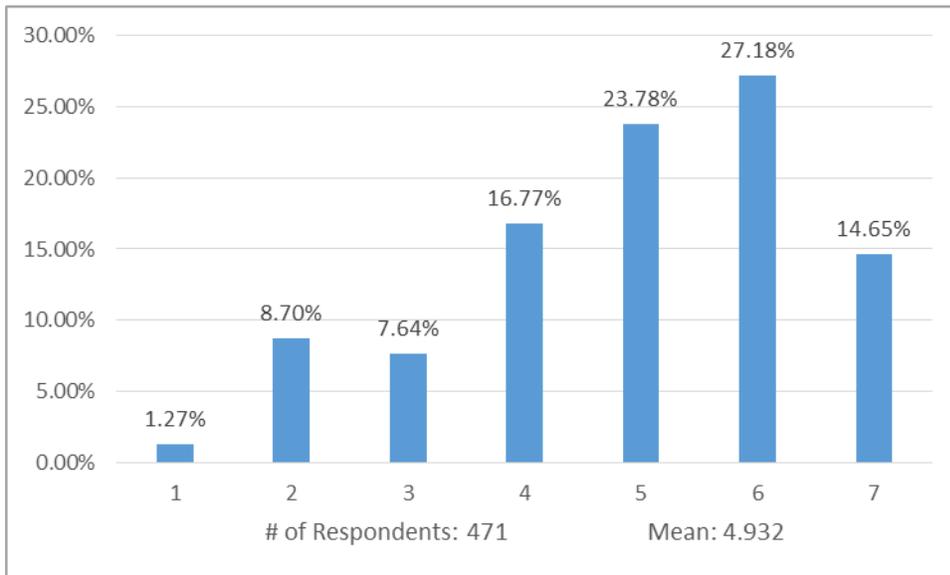
8. On a scale of 1-7, with one being strongly disagree, and seven being strongly agree, do you agree with the statement that teachers at your school currently receive an acceptable amount of time to analyze student test score data?



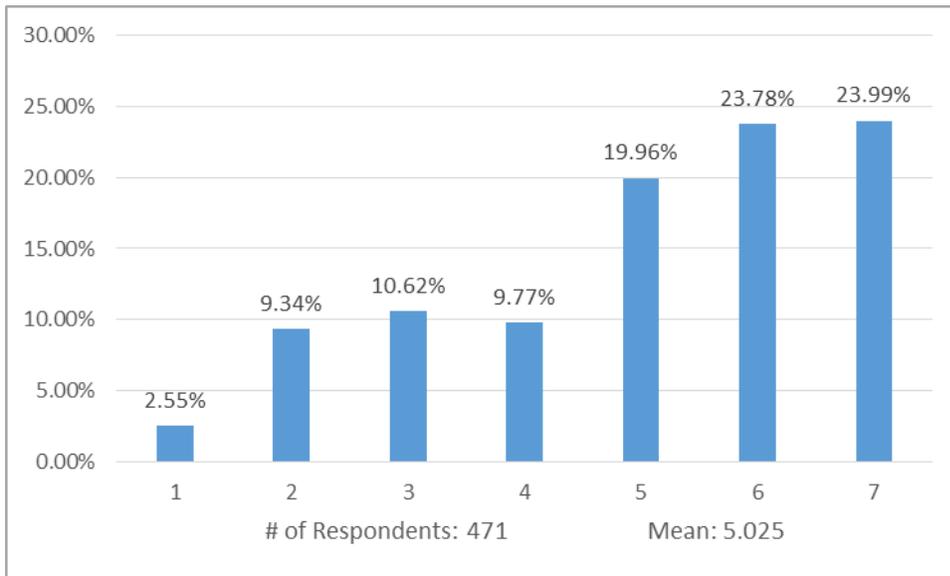
9. On a scale of 1-7, with one being strongly disagree, and seven being strongly agree, do you agree with the statement that turnover is an issue at your school?



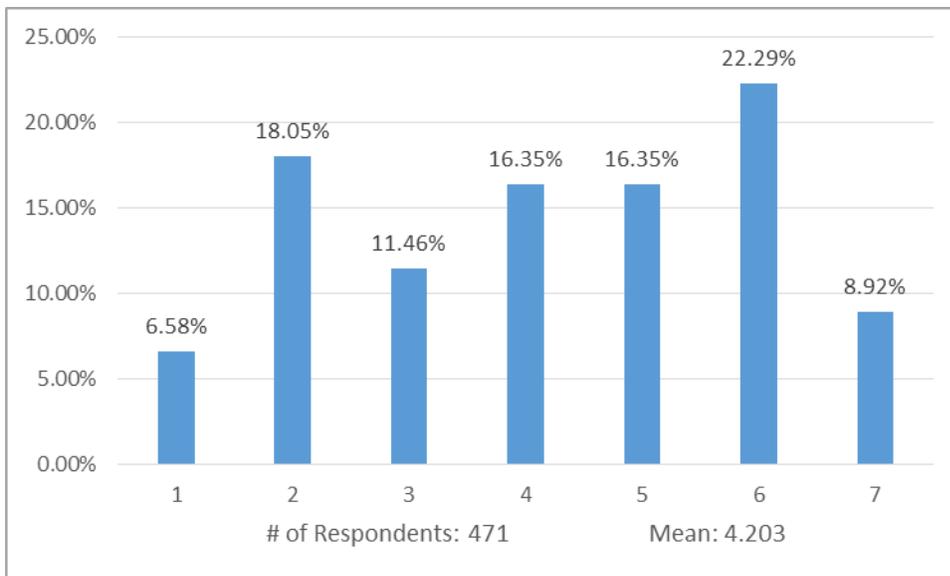
10. On a scale of 1-7, with one being strongly disagree, and seven being strongly agree, do you agree with the statement that more time for teacher professional development, curriculum development, test score analysis, or planning would improve teacher retention?



11. On a scale of 1-7, with one being strongly disagree, and seven being strongly agree, do you agree with the statement that a move to 12-month teacher contracts, with the additional time being used towards professional development, curriculum development, test score/data analysis, or planning, would improve teacher retention?

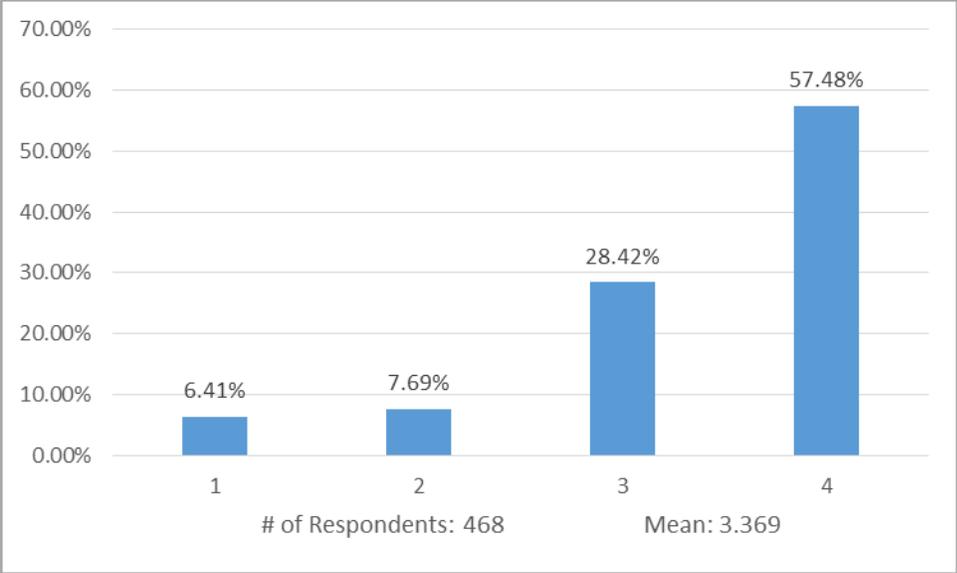


12. On a scale of 1-7, with one being strongly disagree, and seven being strongly agree, do you agree with the statement that implementing 12-month contracts would be logistically difficult?

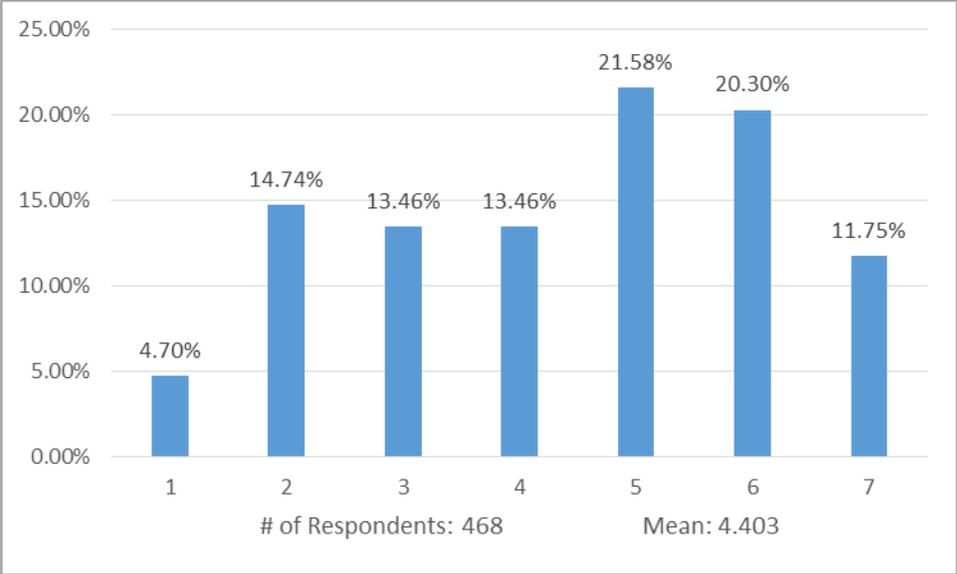


13. How long is your school currently open during the 2 summer months (for potential access)?

1: 0 weeks, 2: 1-4 weeks, 3: 5-8 weeks, 4: 8+ weeks



14. On a scale of 1-7, with one being strongly disagree, and seven being strongly agree, do you agree with the statement that a move to 12-month teacher contracts would significantly increase facilities costs at your school, from keeping the building open for the additional time?



Appendix C: Regression Results

Table 1

Job Satisfaction	Coefficient	Standard Error	P-Value
Years in Teaching (Q1)	.1050809	.0112245	.179
Grade Level (Q2)	-.0231079	.0123581	.062*
Education Level (Q3)	.0025254	.0174017	.885
Data Analysis Time (Q6)	.1025702	.0129815	.000**
Curriculum Development Time (Q8)	.2165624	.0213251	.000**
Teaching Methods Time (Q9)	.2196706	.0204773	.000**
Work w/o Compensation (Q17)	-.0489505	.01237	.000**

Note: *=Significant at the 90% level; **=Significant at the 95% level.

Table 2

Future in NC (Q10)	Coefficient	Standard Error	P-Value
Years in Teaching (Q1)	-.0209552	.0148565	.158
Grade Level (Q2)	-.0781793	.0159299	.000**
Education Level (Q3)	-.1240758	.0223473	.000**
Data Analysis Time (Q6)	.0813923	.0163513	.000**
Curriculum Development Time (Q8)	.1374621	.0265831	.000**
Teaching Methods Time (Q9)	.11131	.0253624	.000**
Work w/o Compensation (Q17)	-.0435593	.0158338	.006**

Note: *=Significant at the 90% level; **=Significant at the 95% level.

Table 3

Contract Retention Effects-Teachers (Q11)	Coefficient	Standard Error	P-Value
Years in Teaching (Q1)	.0602271	.0072498	.000**
Grade Level (Q2)	-.052384	.0079313	.000**
Education Level (Q3)	-.0110547	.010989	.314
Data Analysis Time (Q6)	.0085248	.0079636	.284
Future in NC (Q10)	-.0302186	.0055215	.000**
Job Satisfaction (Q5)	-.0264324	.0071225	.000**
Curriculum Development Time (Q8)	-.0383276	.0129169	.003**
Methods Development Time (Q9)	.0263228	.0122944	.032**
Work w/o Compensation (Q17)	.0003916	.0078578	.960
Majority of Summer-Working Another Job (Q14 Dummy Variable)	-.5396235	.0413464	.000**
Majority of Summer-Working on Teaching (Q14 Dummy Variable)	-.4788302	.0422326	.000**
Majority of Summer-Leisure (Q14 Dummy Variable)	.051156	.0452238	.258
Majority of Summer-Child Care (Q14 Dummy Variable)	-.0023894	.0432158	.956
Majority of Summer-Household Activities (Q14 Dummy Variable)	-.0301311	.0449283	.502

Note: *=Significant at the 90% level; **=Significant at the 95% level.

Table 4

Teacher Turnover (Q9)	Coefficient	Standard Error	P-Value
Years as Administrator (Q1)	.0149278	.071307	.834
Years in Teaching (Q2)	-.0559558	.080453	.413
School Type (Q3)	.1745111	.084355	.039**
Education Level (Q4)	-.0444783	.2020351	.825
Professional Development Time (Q5)	.1290748	.0570781	.055*
Curriculum Development Time (Q6)	-.1505172	.0777534	.039**
Planning Time (Q7)	-.0990822	.0729343	.175
Data Analysis Time (Q8)	.0998218	.0778749	.201

Note: *=Significant at the 90% level; **=Significant at the 95% level.

Table 5

Work without Compensation (Q17)	Coefficient	Standard Error	P-Value
Years in Teaching (Q1)	-.021252	.0092259	.021**
Grade Level (Q2)	-.0253685	.0102727	.014**
Education Level (Q3)	-.0247362	.014527	.089*

Note: *=Significant at the 90% level; **=Significant at the 95% level.

Table 6

Curriculum Development Time (Q8)	Coefficient	Standard Error	P-Value
Years in Teaching (Q1)	.0143693	.0118795	.226
Grade Level (Q2)	.0981122	.0129861	.000**
Education Level (Q3)	-.0141211	.0182684	.440

Note: *=Significant at the 90% level; **=Significant at the 95% level.

Table 7

Teaching Methods Development Time (Q9)	Coefficient	Standard Error	P-Value
Years in Teaching (Q1)	-.0016952	.0118536	.886
Grade Level (Q2)	.1068821	.0130271	.000**
Education Level (Q3)	-.0058424	.018372	.750

Note: *=Significant at the 90% level; **=Significant at the 95% level.

Appendix D: Salary Schedule and Costs

Year of Experience Teaching	# of teachers	Avg. Current Salary	Current Expenses	12-Month Contract avg. salary	12-Month Contract Expenses
0	2908	\$ 31,380.00	\$ 91,253,040.00	\$ 37,656.00	\$ 109,503,648.00
1	3673	\$ 31,460.00	\$ 115,552,580.00	\$ 37,752.00	\$ 138,663,096.00
2	2899	\$ 31,560.00	\$ 91,492,440.00	\$ 37,872.00	\$ 109,790,928.00
3	2603	\$ 31,560.00	\$ 82,150,680.00	\$ 37,872.00	\$ 98,580,816.00
4	2262	\$ 31,710.00	\$ 71,728,020.00	\$ 38,052.00	\$ 86,073,624.00
5	2801	\$ 31,880.00	\$ 89,295,880.00	\$ 38,256.00	\$ 107,155,056.00
6	3228	\$ 32,470.00	\$ 104,813,160.00	\$ 38,964.00	\$ 125,775,792.00
7	3541	\$ 33,240.00	\$ 117,702,840.00	\$ 39,888.00	\$ 141,243,408.00
8	3677	\$ 34,800.00	\$ 127,959,600.00	\$ 41,760.00	\$ 153,551,520.00
9	3548	\$ 36,520.00	\$ 129,572,960.00	\$ 43,824.00	\$ 155,487,552.00
10	3420	\$ 37,960.00	\$ 129,823,200.00	\$ 45,552.00	\$ 155,787,840.00
11	3245	\$ 39,480.00	\$ 128,112,600.00	\$ 47,376.00	\$ 153,735,120.00
12	3220	\$ 40,610.00	\$ 130,764,200.00	\$ 48,732.00	\$ 156,917,040.00
13	3165	\$ 41,130.00	\$ 130,176,450.00	\$ 49,356.00	\$ 156,211,740.00
14	3082	\$ 41,810.00	\$ 128,858,420.00	\$ 50,172.00	\$ 154,630,104.00
15	2930	\$ 42,290.00	\$ 123,909,700.00	\$ 50,748.00	\$ 148,691,640.00
16	2829	\$ 42,920.00	\$ 121,420,680.00	\$ 51,504.00	\$ 145,704,816.00
17	2717	\$ 43,410.00	\$ 117,944,970.00	\$ 52,092.00	\$ 141,533,964.00
18	2441	\$ 44,160.00	\$ 107,794,560.00	\$ 52,992.00	\$ 129,353,472.00
19	2310	\$ 44,630.00	\$ 103,095,300.00	\$ 53,556.00	\$ 123,714,360.00
20	2199	\$ 45,120.00	\$ 99,218,880.00	\$ 54,144.00	\$ 119,062,656.00
21	1893	\$ 45,960.00	\$ 87,002,280.00	\$ 55,152.00	\$ 104,402,736.00
22	1725	\$ 46,290.00	\$ 79,850,250.00	\$ 55,548.00	\$ 95,820,300.00
23	1603	\$ 47,080.00	\$ 75,469,240.00	\$ 56,496.00	\$ 90,563,088.00
24	1549	\$ 47,570.00	\$ 73,685,930.00	\$ 57,084.00	\$ 88,423,116.00
25	1511	\$ 48,230.00	\$ 72,875,530.00	\$ 57,876.00	\$ 87,450,636.00
26	1461	\$ 49,090.00	\$ 71,720,490.00	\$ 58,908.00	\$ 86,064,588.00
27	1180	\$ 49,800.00	\$ 58,764,000.00	\$ 59,760.00	\$ 70,516,800.00
28	1210	\$ 50,360.00	\$ 60,935,600.00	\$ 60,432.00	\$ 73,122,720.00
29	1068	\$ 51,250.00	\$ 54,735,000.00	\$ 61,500.00	\$ 65,682,000.00
30	847	\$ 51,630.00	\$ 43,730,610.00	\$ 61,956.00	\$ 52,476,732.00
31	651	\$ 52,520.00	\$ 34,190,520.00	\$ 63,024.00	\$ 41,028,624.00
32	559	\$ 53,620.00	\$ 29,973,580.00	\$ 64,344.00	\$ 35,968,296.00
33	496	\$ 54,020.00	\$ 26,793,920.00	\$ 64,824.00	\$ 32,152,704.00
34	452	\$ 54,870.00	\$ 24,801,240.00	\$ 65,844.00	\$ 29,761,488.00
35	379	\$ 55,970.00	\$ 21,212,630.00	\$ 67,164.00	\$ 25,455,156.00
36+	1140	\$ 56,980.00	\$ 64,957,200.00	\$ 68,376.00	\$ 77,948,640.00
Totals	80422	\$ 40,080.30	\$ 3,223,338,180.00	\$ 48,096.36	\$ 3,868,005,816.00
Total for Teachers with 0-5 yrs	17146	\$ 31,580.11	\$ 541,472,640.00	\$ 37,896.14	\$ 649,767,168.00
Cost of expansion to 12-Month for All Teachers					\$ 644,667,636.00
Cost of expansion to teachers with 0-5 years experience					\$ 108,294,528.00

Source: North Carolina Public Schools Budget Highlights, FY 2013-2014;
<http://www.ncpublicschools.org/fbs/resources/data/#highlights>

Appendix E: STATA Do-Files from Survey Data Analysis

Teacher Survey:

tab data_analysis
tab curric_dev
tab methods
tab compensation
tab job_satisfaction
tab nc_future
tab summer_activity
tab summer_pay
tab data_analysis if compensation>=6
tab curric_dev if compensation>=6
tab methods if compensation>=6
tab job_satisfaction if compensation>=6
tab nc_future if compensation>=6
reg data_analysis years gradelvl educ_lvl, robust
reg curric_dev years gradelvl educ_lvl, robust
reg methods years gradelvl educ_lvl, robust
reg compensation years gradelvl educ_lvl, robust
reg job_satisfaction years gradelvl educ_lvl, robust
reg nc_future years gradelvl educ_lvl data_analysis curric_dev methods compensation, robust
tab summer_activity
tab summer_pay
reg retention summer_pay, robust
reg contract_improve summer_pay, robust
tab retention if summer_activity==4 summer_activity==5
ttesti 3159 2.893321 .964383 10038 2.652222 1.018652, unequal
tab retention
tab contract_improve
tab retention if job_satisfaction<4
tab retention if nc_future<4
reg retention data_analysis data_instruct curric_dev methods compensation, robust
reg data_analysis years gradelvl educ_lvl, robust
reg curric_dev years gradelvl educ_lvl, robust
reg methods years gradelvl educ_lvl, robust
reg retention years gradelvl educ_lvl data_analysis curric_dev methods compensation, robust
reg nc_future years gradelvl educ_lvl data_analysis curric_dev methods compensation, robust

reg contract_improve years gradelvl educ_lvl data_analysis curric_dev methods compensation job_satisfaction, robust
reg job_satisfaction years gradelvl educ_lvl data_analysis curric_dev methods compensation, robust
reg job_satisfaction data_analysis curric_dev methods compensation, robust
char summer_activity[omit] 6
xi: regress retention years gradelvl educ_lvl data_analysis nc_future job_satisfaction curric_dev methods compensation i.summer_activity, robust

Administrator Survey:

tab professional_dev
tab curriculum_dev
tab planning
tab data_analysis
tab turnover
tab curriculum_dev if professional_dev<=3
tab planning if professional_dev<=3
tab data_analysis if professional_dev<=3
tab professional_dev if curriculum_dev<=3
tab planning if curriculum_dev<=3
tab years professional_dev, row
tab years curriculum_dev, row
tab years planning, row
tab years data_analysis, row
tab teacher_years professional_dev, row
tab teacher_years curriculum_dev, row
tab teacher_years planning, row
tab teacher_years data_analysis, row
tab school_type professional_dev, row
tab school_type curriculum_dev, row
tab school_type planning, row
tab school_type data_analysis, row
reg professional_dev years teacher_years school_type educ_level
reg curriculum_dev year teacher_years school_type educ_level
reg planning years teacher_years school_type educ_level
reg data_analysis years teacher_years school_type educ_level
reg turnover years teacher_years school_type educ_level professional_dev curriculum_dev planning data_analysis, robust

reg turnover years teacher_years school_type educ_level professional_dev planning data_analysis, robust
tab retention_time
tab retention_contract
tab retention_contract if turnover>4
tab summer_hours
tab costs
reg summer_hours school_type, robust
reg cost school_type, robust
reg cost lea, robust
reg retention_contract school_type years educ_level teacher_years turnover, robust
reg retention_time school_type years educ_level teacher_years turnover, robust

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Interviews

Bill Harrison. Former Chair, North Carolina State Board of Education. March 13, 2014.

Carol Vandenberg. Executive Director, Professional Educators of North Carolina. March 25, 2014.

Eddie West. Former Superintendent of Chowan County, Gaston County, Guilford County, and New Hanover County. March 14, 2014.

Jack Hoke. Executive Director, North Carolina School Superintendents Association. March 20, 2014.

Jerry Oates. Principal, Williston Middle School. Wilmington, NC. March 3-10, 2014.

Leanne Winner. Director of Public Relations, NCSBA. March 14, 2014.

Linda Rice. 6th grade math and science teacher, Murray Middle School. Wilmington, NC. March 3-10, 2014.

Marcus Brandon. Representative (D-Guilford, NCGA. March 13, 2014.

Nikki Carnes. Kindergarten teacher, Parsley Elementary School. Wilmington, NC. March 3 10, 2014.

Philip Sutton. Principal, Isaac Bear Early College High School. Wilmington, NC. March 3-10, 2014.

Shirley Price. Director, North Carolina Principals Association. March 18, 2014.

Terry Stoops. Director of Education Studies, John Locke Foundation. March 17, 2014.