

THE
UNIVERSITY
OF RHODE ISLAND

Year Round Education

Prepared for:

Providence Public Schools

Office of the Superintendent
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To: Chris Maher, Superintendent of Providence Public Schools

From: Kateri Gomes and Ana Nimaja, *University of Rhode Island*

Date: November 30th, 2018

RE: Would a Year Round Calendar be a good option for the Providence Public Schools?

Purpose

This Policy Memorandum (PM) is to help advise the Providence School District on the benefits and drawbacks of year-round schooling (YRS) for the City of Providence. It will define the types and methods of year-round education (YRE), as well as address the former research and studies conducted on YRE. Using a comprehensive literature review, we discuss the benefits and limitations of YRE. The memo concludes with a recommendation to the City based on the research.

Background

Our initial investigation regarding YRE started in the spring of 2018 as part of an Honors Public Policy class at the University of Rhode Island. We were proposed the question “How can the City of Providence reduce summer learning loss?” Providence students struggle with summer learning loss. As a recent report by the Providence Public Schools found, over 60 percent of Providence Public School students experience significant summer learning loss in reading and 51 percent experience significant summer learning loss in Math. The City’s male students of color, low income students, ELL students and the chronically absent are the most likely to experience high levels of summer learning loss.¹

Our initial research indicated that converting the school calendar from a traditional academic calendar to a year-round calendar was one approach school systems have used to increase academic outcomes among students. YRE has also become increasingly popular in the past three decades across the country as a means to reduce summer learning loss.² Between 1985 and 2011, there was a nine-fold increase in the number of schools operating on year-round calendars. By 2011, 4.1% of all schools had a year round calendar.³ These non-traditional schools are mostly concentrated in the Southern and Western regions of the United States, but can be found throughout the country. YRE is used for multiple purposes, however, not just to eliminate summer learning loss. Importantly, it is also used to address overcrowding, a problem the City of Providence does not currently face. However, the City does struggle with relatively low graduation rates and low test scores on reading, math and science. Nationally, 43% and 40% of low-income 8th graders score below in mathematics and reading comprehension respectively: statistics that reflect Providence;⁴ meanwhile, only 17% and 15% of high income students score

¹Providence Public Schools Office of Research, Planning & Accountability. 2015. Data Brief: Summer Learning Loss.

² Skinner, Rebecca. Congressional Research Service report available at: <https://fas.org/sgp/crs/misc/R43588.pdf>

³ Skinner, Rebecca. Congressional Research Service report available at: <https://fas.org/sgp/crs/misc/R43588.pdf>

⁴ RIDE, 2017

below on mathematics and reading comprehension respectively.⁵ When examined, students who perform at the bottom 25% on standardized tests scores are twice as likely to drop out of school when compared to their student counterparts who perform at the top 25%.⁶

As a result of initial research into YRSs presented by students in HPR 412, the superintendent of the Providence Public Schools requested a full investigation into the benefits of a year round calendar system.

What is Year Round Schooling?

YRSs and traditional academic calendar schools have the same number of school days across the course of a year. Students in schools that operate with a traditional academic calendar in the United States, go to school from late August/early September to early/mid June and then have summer break for 8 to 10 weeks. Students in YRSs operate on a calendar that is unconstrained by the summer and instead gives breaks throughout the year on a regular basis. There are two main types of year-round schooling: single-track and multi-track.

Single Track Year Round Education

Single track year round education is an alternative academic calendar that was designed specifically to reduce summer learning loss and increase student achievement. It was originally thought that YRE would be a good solution to summer learning loss because it would make the summer vacation shorter, while making school breaks more evenly distributed throughout the year. The theory is that students should not experience as much learning loss if breaks are shorter and more evenly dispersed. Students still have the same number of days of vacation as a traditional school calendar, but, the argument goes, would not forget what they learned during the school year because the break would not be as long.

Traditional calendar schools host all students at once, on the same days, during the same hours and with predetermined breaks, just like traditional schools. There are three primary ways in which breaks are distributed. Each has a set number of days in which students are in school followed by a few weeks of break. The most popular is the 45/15 method in which students go to school for 45 days (or 9 weeks) and then have a 15 day (or 3 week) break. This ratio is followed throughout the entire year so there are many 3 week breaks but no extended (e.g. 6-10 week) breaks.

However, there are two other year round calendar models that are commonly used. Those include the 45/10 and the 60/20. In the 45/10, the students are in school for 9 weeks and then have a 2 week vacation. However, this distribution does tend to have a slightly longer summer break than the 45/15 model. The 60/20 model has students in school for 12 weeks followed by a 4 week break.

⁵ McCombs, Jennifer Sloan, Catherine H. Augustine, and Heather L. Schwartz. *Making summer count: How summer programs can boost children's learning*. Rand Corporation, 2011.

⁶ McCombs, Jennifer Sloan, Catherine H. Augustine, and Heather L. Schwartz. *Making summer count: How summer programs can boost children's learning*. Rand Corporation, 2011.

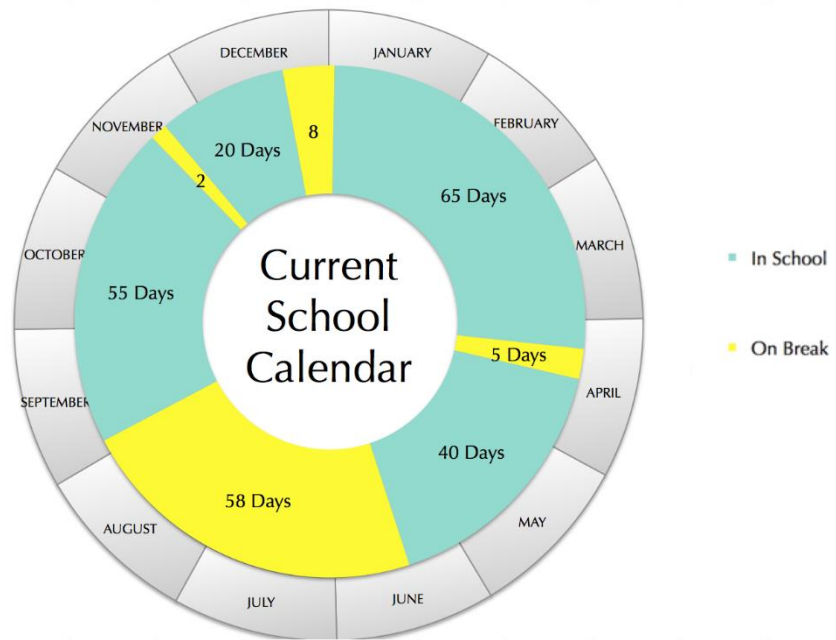
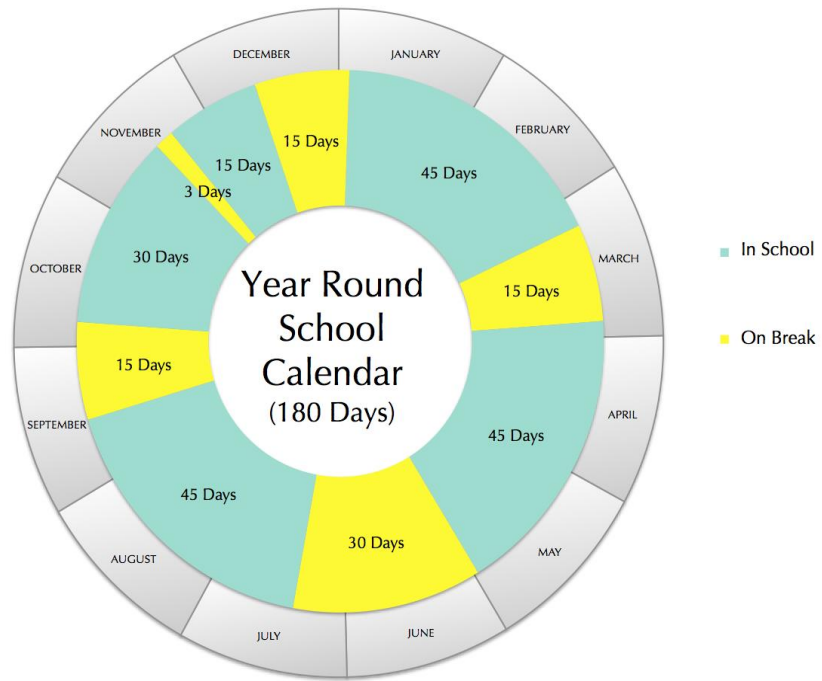


Figure 1. Days On/Off in Traditional vs. Year Round School Calendars

Multi-Track Year Round Education

Multi-track year round education is structured to allow the school building to be utilized by students throughout the year but not all students follow the same calendar. Students go to school at different times of the day or alternating breaks and weeks of instruction throughout the year. For example, one set of students might go to school from 6am to Noon and the next goes to school from 1pm to 7pm. Multi-track is often used to assist schools with capacity issues. Having different tracks allows classrooms and schools to deal with overcapacity issues without building new buildings as schools can house up to twice as many students as a single track system. Similar to single track, multi-track allows students to have equally spaced breaks throughout the whole year. Schools on multi-track systems save on capital expenditures but lose on operation expenditures (savings do however usually outweigh expenses).⁷

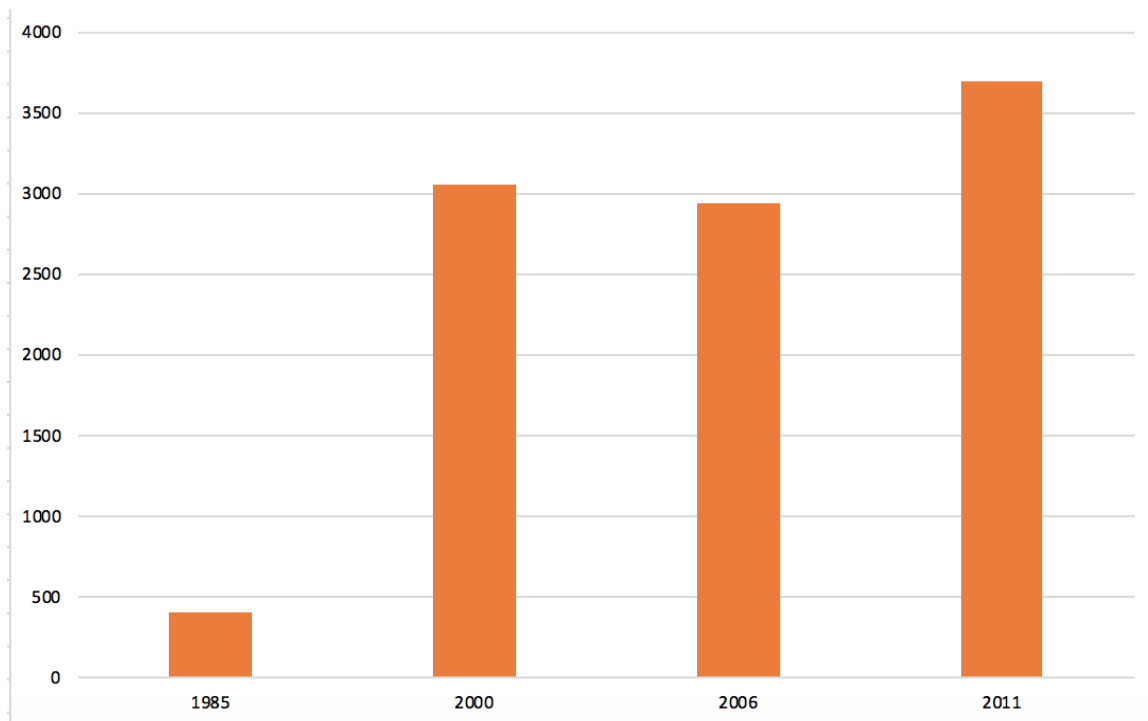


Figure 2. Growth of Year Round Schools, 1985-2011⁸

⁷ Skinner, Rebecca. Congressional Research Service report available at: <https://fas.org/sgp/crs/misc/R43588.pdf>

⁸ Skinner, Rebecca. Congressional Research Service report available at: <https://fas.org/sgp/crs/misc/R43588.pdf>

Potential Benefits and Drawbacks of YRE

Potential Positive Effects

Advocates for YRE posit that students learning in this calendar system will score higher on standardized test scores and experience increased overall learning due to a decrease in summer learning loss. Particularly for struggling students, YRE can offer more opportunities for remediation during the short breaks that can help students catch up who are falling behind without having to wait for the long summer break for these remediation services. Staff burnout is also argued to be lower because of the frequent breaks. In addition, teachers can make additional money by substitute teaching in other districts which are not on a year round calendar. Due to the decreased loss of learning over the summer, advocates argue that educators will have more time to cover new material and so not only will students in YRE not fall as far behind, they will also progress further forward than traditional schools. Finally, since summer learning loss particularly affects minority and low income children, the effects of YRE, are posited to be most beneficial for these groups.

Potential Negative Effects

One of the largest negative effects of implementing YRE is the cost. Prepping facilities to serve students for more months during the calendar year has proved very expensive for districts and continues to be more costly even after fully implemented. It may be difficult to conduct large maintenance projects that are now normally conducted over the summer. Conducting even routine maintenance that is normally done over the summer at night or on the weekends could incur significant overtime costs. Even beyond facilities, YRS often require paying staff on 12 instead of 9-month contracts which also increases operating costs. Teachers may also require higher salaries to attract them to work in a district with an alternative calendar. In addition, principals and other leadership staff may experience burnout as a result of managing buildings that are occupied throughout the year and may require extra compensation to make up for this burden. Particularly for older students, YRE can create problems with participating in sports and extracurricular activities and for holding summer jobs.⁹

What the Studies Say About YRE

Student Performance

Most school systems that consider changing to a YRS single-track system do so with the hope of increasing student achievement by lessening summer learning loss. But what do studies say about how well a change in the calendar affects test scores? Unfortunately, the studies to date are unclear as to the effectiveness of YRS.

⁹ Skinner, Rebecca. Congressional Research Service report available at: <https://fas.org/sgp/crs/misc/R43588.pdf>

Although many older studies of YRS have suggested that they have strong effects on test scores, more recent analyses call these original findings into question. Johnson and Wagner (2017) used data from the Early Childhood Longitudinal Study (ECLS-K) for students at the end of kindergarten to the end of first grade found that YRE students had accumulated 3.58 points less than traditional academic calendar students in reading.¹⁰ In math, YRE students had accumulated 4.01 less points than traditional calendar students.¹¹ However, the YRE model included in the test had 13 less days of learning than traditional schools and the data included summer school students.

Another study by Bruce (2014) looked at the impact of YRE on students' performance for 2nd graders until middle school when they were reintroduced into traditional academic school calendar.¹² The YRE students did perform academically better than traditional students, but this gain slowly decreased when the students were integrated back into traditional middle school. Overtime, Bruce found a widening gap in reading performance between former year-round students and traditional students during the three years of middle school. The former year-round schooled students being at the disadvantage. For example, in math, the former year-round students did a little better than the traditional students in 6th grade (the first year of the transition to traditional middle school). During the next two years of middle school, the former year-school scored lower than the traditional school students in math. The study concluded that any progress made through YRE was lost when the students went back to traditional school.¹³ This is very critical information, because it shows the possible negative consequences on students if YRE is implemented and then the school district switches back or the change is not made throughout the full system (e.g. elementary, middle and high).

Similarly, a study conducted in 2012 of 22 traditional schools Wake County, North Carolina schools found that breaking up the summer vacation into smaller breaks did not have a positive impact on students test scores.¹⁴ The study concluded that the timing in which learning happens is not important, what actually influences performance is the *amount* of material that the students learn. Also, regarding racial minorities in YRSs, this study concluded that no racial

¹⁰ Johnson Jr, Odis, and Michael Wagner. "Equalizers or Enablers of Inequality? A Counterfactual Analysis of Racial and Residential Test Score Gaps in Year-Round and Nine-Month Schools." *The ANNALS of the American Academy of Political and Social Science* 674.1 (2017): 240-261. Available at: <http://journals.sagepub.com/doi/abs/10.1177/0002716217734810>

¹¹ Johnson Jr, Odis, and Michael Wagner. "Equalizers or Enablers of Inequality? A Counterfactual Analysis of Racial and Residential Test Score Gaps in Year-Round and Nine-Month Schools." *The ANNALS of the American Academy of Political and Social Science* 674.1 (2017): 240-261. Available at: <http://journals.sagepub.com/doi/abs/10.1177/0002716217734810>

¹² Bruce, April M. "Long-Term Student Achievement of Students Attending a Year-Round School and a Traditional Calendar School in One Urban School Division in Virginia." (2014). Available at: <https://digitalshowcase.lynchburg.edu/etd/12/>

¹³ Bruce, April M. "Long-Term Student Achievement of Students Attending a Year-Round School and a Traditional Calendar School in One Urban School Division in Virginia." (2014). Available at: <https://digitalshowcase.lynchburg.edu/etd/12/>

¹⁴ McMullen, S. C., & Rouse, K. E. (2012). The impact of year-round schooling on academic achievement: Evidence from mandatory school calendar conversions. *American Economic Journal: Economic Policy*, 4(4), 230-52.

group in particular benefited from YRE; any benefit that was found was extremely small. It is important to note, however, that this study was conducted only two years after implementation.¹⁵

Finally, Callahan (2017) conducted a series of 44 tests that compared math test scores in year-round schools to math test scores in traditional schools. The results of these tests found that only 9 year-round schools performed better than traditional schools, 25 year-round schools performed the same as traditional schools, and 10 year-round schools actually performed worse. However, Callahan (2017) found that for the Bardstown City School system, Kentucky, that after 5 years of implementing YRE, the dropout rate did decrease from 4.5 to 2.7.¹⁶ For the same school district, it was found that switching to YRS improved the percentage of high school students attending secondary-education from 62 to 74%.¹⁷

Finally, of twelve empirical studies that focus on student attendance in YRS, only one of the studies found a significantly higher increase in attendance, while the other eleven found non-significant changes.¹⁸ Overall, studies find that students in schools that operate on a year-round calendar perform equal to or slightly better than their traditional calendar school counterparts. Students in year-round calendar schools tended to learn faster in the summer, meanwhile their traditional school counterparts learned faster in the fall through the spring.¹⁹ These results suggest that while YRSs are theorized to make major improvements in student achievement, the jury is out on if they actually do.

The Micro and Macro Economics of YRS

There are also potential shortfalls of implementing a year-round calendar in a state where other schools have traditional calendars. For one, YRS have not proven to be very popular and many school systems have reverted to traditional calendars after implementing one or several schools on a year-round model. For example, in Jefferson County, Colorado, the YRSs, called “Concept 6” reverted to the traditional calendar after a decade long-run of a year-round calendar school in the district. This was a result of parental dissatisfaction and declining enrollment.²⁰ On the other hand, Columbus City Schools made the switch back due to the expenses being too costly to run a YRS calendar.²¹

Perhaps more importantly, studies have found that not only do some families not want YRS, but the presence of YRS can result in families avoiding purchasing houses in the district.

¹⁵ McMullen, S. C., & Rouse, K. E. (2012). The impact of year-round schooling on academic achievement: Evidence from mandatory school calendar conversions. *American Economic Journal: Economic Policy*, 4(4), 230-52.

¹⁶ Dixon, A. (2011). Focus on the alternative school calendar: Year-round school programs and update on the four-day school week. Southern Regional Education Board.

¹⁷ Dixon, A. (2011). Focus on the alternative school calendar: Year-round school programs and update on the four-day school week. Southern Regional Education Board.

¹⁸ Palmer, E.A., & Bemis, A.E. (1999). Year-Round Education. *Just in Time Research. Children, Youth, & Families*.

¹⁹ von Hippel, Paul. "Year-round school calendars: Effects on summer learning, achievement, parents, teachers, and property values." (2015).

²⁰ White, W. (1973). Year-Round Education for K-12 Districts. *The Phi Delta Kappan*, 54(5), 312-313.

²¹ <https://www.10tv.com/article/columbus-city-schools-make-cuts-next-years-budget>

According to one study, YRS can be so unpopular that families are willing to pay more to live in an area with a traditional calendar and this decision has a negative result on property values. One study found that properties in year-round school areas go down by 1-2 percent in value, due to people “voting with their feet” to avoid the alternative calendar.²²

Studies have also found that redistributing days off from school into shorter breaks throughout the year can negatively affect mothers’ employment.²³ The modified school calendar appears to lower the employment of mothers by around 4 percentage points.²⁴ Mothers may not work if they are their child’s main form of childcare and there are not adequate childcare options available during irregular school breaks.²⁵ Mothers who also have a preschool aged child struggle even more with adjusting to these changes in the school calendar.²⁶ While it is difficult to parse out if families with mothers who choose to stay at home are more likely to choose modified calendars or if the modified calendar causes women to stay at home, this finding indicates that modified calendars are not preferred by working moms. Given Providence’s population, any additional burden on families to find childcare is unlikely to be welcomed by parents.

Teacher Satisfaction

Year round calendar schools cannot be successful without the support of the teachers. While we cannot hypothesize what the response would be from Providence Teachers and the Teacher’s union, based on previous experiences, the change would not likely be welcomed. Importantly, teachers are hesitant to work in schools systems with a year round calendar if their own children are in a different school system.²⁷ While teacher unions have agreed to this system in other jurisdictions, those plans have largely been made for single schools and teachers have the ability to “opt in”. Given many teachers for the PPSD live outside the city, a change in calendar could further dissuade out-of-district teachers from seeking employment in Providence.

Problems with the Data

While thousands of schools now operate on a year round calendar model based on a theory about how a change in the calendar will affect learning outcomes, there is a limited amount of quality data on the effects of year-round schooling, especially large scale studies.

²² von Hippel, Paul. "Year-round school calendars: Effects on summer learning, achievement, parents, teachers, and property values." (2015). Available at: https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2766106

²³ Graves, J. “School calendars, child care availability and maternal employment. *Journal of Urban Economics*.” *Department of Economics, University of Oklahoma*. (2013).

²⁴ von Hippel, Paul. "Year-round school calendars: Effects on summer learning, achievement, parents, teachers, and property values." (2015). Available at: https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2766106

²⁵ von Hippel, Paul. "Year-round school calendars: Effects on summer learning, achievement, parents, teachers, and property values." (2015). Available at: https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2766106

²⁶ Graves, J. “School calendars, child care availability and maternal employment. *Journal of Urban Economics*.” *Department of Economics, University of Oklahoma*. (2013).

²⁷ Shields, C., & Oberg, S. “Choice and Voice in School Calendar Reform” *Canadian Journal of Education* Vol. 25, No. 1 (2000)

Since there are limited numbers of large scale studies, it is hard to be confident in exactly what results year-round schooling actually produces. Most of the studies are poorly designed and are not clear on which calendar offers more advantages than the other.²⁸ It is also important to note that most studies suffer from severe “methodological limitations.” In instances of large scale models, the studies do not account for the un-observable characteristics of the schools. When the unobservable factors are accounted for, and appropriate empirical methods used, the small positive impacts that YRS has are often no longer statistically significant.²⁹

There is also limited testing on outcomes other than achievement such as instructional time.³⁰ Finally, one of the largest flaws in the studies concerning YRS is that the studies do not adequately address the long-term effects on the students in year round schools. Most of the existing studies were completed shortly after the implementation of YRE on a school or district, therefore, minimal time was allowed for adequate observations of long-term effects. The three studies that did investigate the effects of YRS over multiple years were flawed because the subjects studied were different students each year rather than the same group of students, which led to inaccurate trends.^{31 32}

A notable large flaw is that individual schools that are studied tend to be opt-in/opt-out schools. For instance, Cabarrus County schools in North Carolina are opt-in/opt-out schools, which means that families may apply for transfer requests for traditional schools.³³ For schools that fall into this category, the results are incomplete as the system is optional and there may be quantitative and qualitative differences between the types of students that “opt-in” and “opt-out”. Therefore, to actually assess the effect of YRS on any of these outcomes, one would need, ideally, a lottery system in which only those who applied to the lottery were studied and comparing those that applied and got in to those that applied but did not.

Another methodological issue that arises in the studies is the fact that supporters of year-round schools argue that learning can be more effective when it is done in short, broken up, periods.³⁴ A large flaw in this argument is that it relies on Dempster’s “Spaced Effect” study which is based on the theory that for a given amount of time having spaced out presentations

²⁸ Crow, Karen & Johnson, Dale (2010) A Comparison of Achievement and Attendance in Schools Using Traditional Academic Year Calendars and Year Round Calendars

²⁹ McMullen, S. C., & Rouse, K. E. (2012). The impact of year-round schooling on academic achievement: Evidence from mandatory school calendar conversions. *American Economic Journal. Economic Policy*, 4(4), 230-252. doi:<http://dx.doi.org/uri.idm.oclc.org/10.1257/pol.4.4.230>

³⁰ Patall, E., Cooper, H., & Allen, A. (2010). Extending the School Day or School Year: A Systematic Review of Research (1985-2009). *Review of Educational Research*, 80(3), 401-436. Retrieved from <http://www.jstor.org/uri.idm.oclc.org/stable/40927287>

³¹ McDonald et al., 2008; Meier, 2009; van der Graaf, 2008

³² Patall, E., Cooper, H., & Allen, A. (2010). Extending the School Day or School Year: A Systematic Review of Research (1985-2009). *Review of Educational Research*, 80(3), 401-436. Retrieved from <http://www.jstor.org/uri.idm.oclc.org/stable/40927287>

³³ <https://www.cabarrus.k12.nc.us/domain/7543>

³⁴ von Hippel, Paul. "Year-round school calendars: Effects on summer learning, achievement, parents, teachers, and property values." (2015).

lead to better learning growth than massed amounts of presentations at once.³⁵ With massed stimuli, the students' minds would eventually stop processing as their attention span is diminished because of the redundancy of the material.³⁶ One review of the literature, found that psychological evidence may be inconsistent with actual educational settings because the breaks studied in the psychological studies on education and recalling material were lag times of minutes to days--not weeks.³⁷ For example, studies have investigated that students are able to recall more after 48 hours than after 5 minutes of being presented a reading passage.³⁸ While other spaced vs. mass studies looked at longer intervals, the research suggests that lag periods of weeks and months may not be consistent with the difference between hours and days.³⁹

Executive Summary

There are very few studies conducted on year-round calendar schools and districts and many of those that exist are extremely flawed. As a result, many studies provide inaccurate or incomplete analyses. The evidence from the literature suggests that there is minimal significant difference in student achievement and test scores between year-round schooling and traditional options.^{40 41} There is also little evidence of improvement in student achievement and test scores, specifically amongst racial minorities, English Language Learners, and low socio-economic status students in year-round schools.⁴² While finding very few benefits, studies have also found that the many problems with implementing year-round calendars: including the cost of parental disapproval, students switching schools, and teacher dissatisfaction, outweigh the potential gains of year-round schools.

In conclusion, it is our recommendation that the costs associated with transitioning to year-round calendar schools are too large. There is also a lack of consistent evidence that students will academically benefit from the switch from traditional to a year round calendar, therefore the Providence Public School District should not transition to year round education.

³⁵ Dempster, F. N. "The spacing effect: A case study in the failure to apply the results of psychological research." *American Psychologist*, 43(8), 627. (1988).

³⁶ Crow, Karen, and Johnson, Dale. "A Comparison of Achievement and Attendance in Schools Using Traditional Academic Year Calendar and Year Round Calendars" *Journal of Border Educational Research* (2010). Available at: <https://journals.tdl.org/jber/index.php/jber/article/viewFile/7182/6427>

³⁷ Donovan, J. J., & Radosevich, D. J. (1999). A meta-analytic review of the distribution of practice effect: Now you see it, now you don't. *Journal of Applied Psychology*, 84(5), 795.

³⁸ Dempster, F. N. "The spacing effect: A case study in the failure to apply the results of psychological research." *American Psychologist*, 43(8), 627. (1988).

³⁹ Dempster, F. N. "The spacing effect: A case study in the failure to apply the results of psychological research." *American Psychologist*, 43(8), 627. (1988).

⁴⁰ von Hippel, Paul. "Year-round school calendars: Effects on summer learning, achievement, parents, teachers, and property values." (2015).

⁴¹ Winter, E. C. (2005). A modified school year: Perspectives from the early years. *Child Care in Practice*, 11(4), 399-413.

⁴² McMillen, Bradley J. "A statewide evaluation of academic achievement in year-round schools." *The Journal of Educational Research* 95.2 (2001): 67-74.