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New York State Middle Schools and Instructional Scheduling, Teaming and Common Planning: A Descriptive Study

This manuscript has been peer-reviewed, accepted, and endorsed by the National Council of Professors of Educational Administration (NCPEA) as a significant contribution to the scholarship and practice of school administration and K-12 education.



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Data regarding the type of instructional scheduling utilized along with the use of teaming and common planning at the middle school level has not been collected nor reported on the New York State School Report Card, and therefore it is not known whether and how middle schools are implementing these three school supports. Consequently, the purpose of this research was to discover whether these three school supports are present or absent in New York State middle schools in order to provide direction for educators, administrators, community members, and policymakers in making informed decisions regarding middle level education in the State of New York. This descriptive study examined to what extent, if any, three school supports (instructional scheduling, teaming, and common planning) are in existence in New York State middle schools.

The results indicated that the majority of principals utilize a traditional departmentalized schedule with interdisciplinary and/or single-graded teaming with varying duration and frequencies of team, grade level, and departmental common planning. Statistically significant differences existed between specific principals' beliefs and grade configuration, school location, and years of principal experience at current school.

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Middle level education is critical for the learning, development, and success of young adolescents (National Middle School Association, 2010a). The number of middle schools nationally has increased from less than 5,000 in 1971 to more than 13,000 in 2008 (McEwin & Greene, 2011). A plethora of school supports are put into place at this level to assist and maximize student learning. The importance of three school supports (instructional scheduling, teaming, and common planning) at the middle school level has been discussed and examined by scholars and advocacy organizations.

In general, and for the purposes of this study, teaming refers to a way of organizing staff so that a group of teachers share: the same group of students, responsibility for planning, teaching, and evaluating the curriculum and instruction, similar schedules and the same area of the school building (Boyer & Bishop, 2004). Furthermore, common planning is defined as a regularly scheduled time during the school day when staff members who teach the same students meet for planning, parent conferences, material preparation, and student evaluation (Kellough & Kellough, 2008).

In both *Turning Points: Preparing American Youth for the 21st Century* (Carnegie Council on Adolescent Development, 1989) and *Turning Points 2000: Educating Adolescents in the 21st Century* (Jackson, Davis, Abeel, Bordonaro, & Carnegie Foundation on Adolescent Development, 2000) the authors examined a theoretical framework of a middle school model focusing on the following three variables as they related to learning: scheduling instructional periods to maximize learning, creating small communities for learning, and providing time for teachers to plan and prepare together. In addition, research that has focused on the middle school level has found that these three school supports – together or separately – have a positive impact on student learning (Gill, 2012; Boyer & Bishop, 2004; Brown, 2001; Cook & Faulkner, 2010; Flynn, Lawrenz, & Schultz, 2005; Grenda & Hackmann, 2014; Kiefer & Ellerbrock, 2012; Mattox, Hancock, & Queen, 2005; Mertens, 2013; Mertens & Flowers, 2006; Wallace, 2007; Wilson, 2007).

The empirical research conducted in the past 10 years regarding instructional scheduling found, to some extent, that the type of instructional schedule could have a positive influence on student achievement. Mattox et al. (2005) examined the effects of block scheduling on middle school students' math achievement over a 6-year period and concluded that student achievement improved each year in mathematics as schools transitioned from traditional to block scheduling. Gill (2011) examined differences in the performance of students on state examinations of math and reading relative to whether the student was exposed to an A/B (alternating day) block schedule or a traditional schedule. Gill (2011) concluded that there were no significant differences between the percentage of students earning a pass/advance score in reading and math in the traditional or block scheduled schools. Flynn, Lawrenz, & Schultz (2005) examined block scheduling and mathematics and the potential differences in engagement in standards-based curriculum and instruction practices between block scheduling and traditional scheduling schools. They concluded that despite some differences, the data demonstrated that teachers in both types of schedules (block and traditional) tend to follow similar patterns of whole class instruction, small group instruction, and individual student work.

Current research posits that teaming has a positive influence on school reform, students' social bonding, the fostering of an adolescent-centered community, student perceptions, pre-service training, and distributive leadership. Wallace (2007) examined students' perceived levels of social bonding with their peers by comparing two configurations of sixth grade students and core teachers and concluded that although the degree to which interdisciplinary teaching team configurations impact student social bonding is small, it is considered to be significant. Kiefer and Ellerbrock (2012) explored how one interdisciplinary team developed a responsive adolescent-centered

community for eighth-grade students. They discovered that the emergent relationship focused on organizational structures (interdisciplinary teaming, flexible scheduling, homeroom, team teachers and common planning time) that served as a way to promote the adolescent-centered community. Boyer and Bishop (2004) examined students' perceptions of effective interdisciplinary teaming and indicated that students had a sense of acceptance into a community along with a belief that decision-making was shared among students and teachers. In addition, the authors stated that students learned from each other and appreciated each other's differences and that being on a team increased their self-confidence.

Similarly, ten years of research concerning common planning indicates that the benefits include: improved student learning, more effective learning environment, better collaboration and networking, better communication, and more focused professional development. Cook and Faulkner (2010) examined the use of common planning time by two interdisciplinary teams in Kentucky. The researchers concluded that common planning time afforded the schools the opportunity to meet the needs of the children. Mertens (2013) examined common planning from the perspective of: What are the teachers' understandings of common planning time?, How do teachers use their common planning time?, How are teachers prepared professionally to use their common planning time? What are the perceived benefits of common planning time? What are the perceived barriers to common planning time? The results indicated that the most common activities during common planning were discussing student learning problems and facilitating special team activities. In addition, the authors concluded that teachers received small amounts of training on common planning during their pre-service preparation programs and that teams with higher levels of common planning time reported higher levels of interdisciplinary team practices.

Problem

Data regarding the type of instructional scheduling utilized along with the use of teaming and common planning at the middle school level has not been collected nor reported on the New York State (NYS) School Report Card, and therefore it is not known whether and how middle schools are implementing these three school supports, which have been identified in the literature as positively influencing student learning and efficacy (Jackson, Davis, Abeel, Bordonaro, & Carnegie Foundation on Adolescent Development, 2000). Consequently, the purpose of this research was to determine to what extent these three school supports are present or absent in NYS middle schools in order to provide direction for educators, administrators, community members, and policymakers in making informed decisions regarding middle level education in the State of New York. This descriptive study examined to what extent, if any, three school supports (instructional scheduling, teaming, and common planning) are in existence in NYS middle schools.

Purpose & Research Questions

The purpose of this study was to determine to what extent the three school supports previously discussed, instructional scheduling, teaming, and common planning are either absent or present in NYS middle schools. The current literature on middle level education has indicated the need for additional research to be conducted on this topic (Mertens & Flowers, 2006; National Middle School Association, 2010a; National Middle School Association, 2010b). Additionally, this study was designed to support the seven identified research recommendations of the National Middle School Association (NMSA, 2010a) to expand the middle grades education research base.

Three research questions were addressed in this study. The first research question focused on the current instructional scheduling practices of NYS middle schools categorized with an average need/resource capacity. A need/resource capacity (N/RC) category is a measure of the ability of a district to meet the needs of its students with local resources. The second research question examined to what extent, if any, is teaming present or absent in NYS middle schools categorized with an average need/resource capacity. The final research question explored to what extent, if any, is common planning present or absent in NYS middle schools categorized with an average need/resource capacity.

Methodology

Survey Construction and Data Collection

The research design used in this study was a descriptive quantitative survey that identified the presence or absence of three school supports (instructional scheduling, teaming, and common planning) in NYS middle schools. A self-administered online web survey, provided through Survey Monkey (surveymonkey.com), was designed to identify the presence or absence of these three school supports and was completed by a selected sample of NYS middle school principals. The web based survey consisted of closed-ended questions, partially open-ended questions, or Likert rating scale questions and statements.

Prior to conducting the study, the survey was piloted to determine validity and reliability through submission to a panel of experts for critique and after revisions to a group of middle school principals. Survey reliability was found to be .75 using Cronbach's Alpha, which more than met the accepted criterion level.70.

A limitation of this study was that the sample was restricted to NYS middle schools with an average need/resource capacity and therefore cannot be generalized to other middle schools with different need/resource capacities. A second limitation was that the sample was restricted to NYS middle schools with either grades five through eight, sixth through eight, or seven through eight and therefore cannot be generalized to other middle schools with different grade configurations. A delimitation of this study was that district and school websites were used to determine current principal names and email addresses.

It was assumed for this study that principals would answer the questions honestly and without bias in order to support the research being conducted. With a response rate of 28%, the sample was considered large enough to justify the exploration that certain patterns and trends might emerge from the analysis of the data collected to provide plausible conclusions that further, statistically reliable studies might confirm.

Sample

The participants were principals from NYS middle schools whose district was categorized as having an average need/resource capacity during the 2011-2012 school year. Middle schools included in this study had grade configurations comprised of 5 through 8, 6 through 8, and 7 through 8. These three grade configurations were selected because they account for approximately 89% of all separately organized public middle schools in the country (McEwin & Greene, 2011). The list of middle school principals and their email addresses were obtained by downloading the NYS School Report Card database for 2011-2012, along with the use of district/school websites to verify contact information.

Results

Demographic Results

The demographic information compiled indicated that the sample of principals surveyed was 81% male with an average age of 45 and an average of 5 years being principal of their school. The demographic data regarding the respondents' schools indicated that 60% of the middle schools were suburban and 65% consisted of grades 6, 7, and 8 with an average population of 704 students. With regard to race/ethnicity, 98% of the student population was identified as White. In addition, these middle schools had a 95% attendance rate, 5% suspension rate, 27% free/reduced lunch rate along with 76% of the middle schools maintaining yearly Adequate Yearly Progress (AYP) in ELA and 82% maintaining yearly AYP in Mathematics.

Instructional Scheduling

Findings regarding type of instructional schedule indicated that the sample of principals predominantly utilized a traditional departmentalized instructional schedule that offered a contingency of exploratory courses that include physical education, music, technology, art, health, and home and careers. Table 1 shows that approximately 70% of the respondents utilized a traditional departmentalized schedule. Chi-square analysis determined that the observed frequency of the type of instructional schedule selected by the respondents was statistically significant ($\chi^2(6, N=65)=164.277, p<.001$).

Table 1

Chi-square Analysis on Type of Instructional Schedule (N=65)

	Percentage	Frequency	Observed <i>N</i>	Expected <i>N</i>	Residual	Standardized Residual
Traditional Departmentalized Schedule	69.2%	45	45	9.3	35.7	11.70
Alternate Day Block Schedule	4.6%	3	3	9.3	-6.3	-2.07
Flexible Interdisciplinary Block Schedule	1.5%	1	1	9.3	-8.3	-2.72
Modular Schedule	1.5%	1	1	9.3	-8.3	-2.72

Rotating Schedule	3.1%	2	2	9.3	-7.3	-2.39
Dropped Schedule	0.0%	0	0	0	0	0.00
Rotating Dropped Schedule	7.7%	5	5	9.3	-4.3	-1.41
Other (please specify)	12.3%	8	8	9.3	-1.3	-0.43

Conversely, when examining preferred instructional scheduling models, a Friedman test for mean rank was found to be statistically significant ($\chi^2 (6, N=65)=219.105, p<.001$) when respondents were asked to rank order from 1 through 7 the preferred instructional model. Table 2 displays the mean, mean rank and standard deviation for each instructional scheduling model. The most popular scheduling model was the Flexible Interdisciplinary Block Schedule with a mean rank of 2.15, while the least popular was the Rotating Dropped Schedule with a mean rank of 6.45.

Table 2

Friedman Test on Instructional Scheduling Models (N=65)

	N	Mean	Standard Deviation	Mean Rank
Flexible Interdisciplinary Block Schedule	65	2.15	1.314	2.15
Traditional Departmentalized Schedule	65	2.45	1.323	2.45
Alternate Day Block Schedule	65	3.32	1.592	3.32
Modular Schedule	65	3.63	1.206	3.63
Rotating Schedule	65	4.18	1.467	4.18
Dropped Schedule	65	5.82	.950	5.82
Rotating Dropped Schedule	65	6.45	1.392	6.45

In addition to ranking different types of instructional schedules, the respondents were asked to indicate their agreement or disagreement with 10 statements concerning the preferred preferences of an instructional schedule. Utilizing a Chi-square analysis of these responses all but

one of the 10 statements, *Longer class periods can have a positive influence on student behavior*, showed statistical significance. Table 3 displays the Chi-square results for instructional scheduling beliefs.

Table 3

Chi-square Analysis Results on Instructional Scheduling Beliefs (4-Strongly Agree; 3-Somewhat Agree; 2-Somewhat Disagree; 1-Strongly Disagree).*

Instructional schedule should allow teachers an opportunity to see students at different times during the day				
$(\chi^2 (3, N=64)=48.875, p<.001)$				
	Observed <i>N</i>	Expected <i>N</i>	Residual	Standardized Residual
1	1	16.0	-15.0	-3.75
2	5	16.0	-11.0	-2.75
3	36	16.0	20.0	5
4	22	16.0	6.0	1.5
Total	64			

The instructional schedule should support flexibility for periods to be of different lengths.				
$(\chi^2 (3, N=63)=38.270, p<.001)$				
	Observed <i>N</i>	Expected <i>N</i>	Residual	Standardized Residual
1	3	15.8	-12.8	-3.22
2	4	15.8	-11.8	-2.97
3	27	15.8	11.3	2.82
4	29	15.8	13.3	3.32

Total	63			
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An instructional schedule can have a positive influence on student learning.				
$(\chi^2 (1, N=65)=36.938, p<.001)$				
	Observed <i>N</i>	Expected <i>N</i>	Residual	Standardized Residual
3	8	32.5	-24.5	-4.30
4	57	32.5	24.5	4.30
Total	65			

Longer class periods can have a positive influence on student learning.				
$(\chi^2 (2, N=64)=19.344, p<.001)$				
	Observed <i>N</i>	Expected <i>N</i>	Residual	Standardized Residual
2	5	21.3	-16.3	-3.53
3	27	21.3	5.7	1.23
4	32	21.3	10.7	2.32
Total	64			

Longer class periods can have a positive influence on student behavior.				
$(\chi^2 (2, N=64)=4.156, p<.125)$				
	Observed <i>N</i>	Expected <i>N</i>	Residual	Standardized Residual
2	18	21.3	-3.3	-0.71
3	29	21.3	7.7	1.67

4	17	21.3	-4.3	-0.93
Total	64			

<p>Longer class periods can have a positive influence on the relationship between teacher and student</p> <p>$(\chi^2 (2, N=64)=19.906, p<.001)$</p>				
	Observed <i>N</i>	Expected <i>N</i>	Residual	Standardized Residual
2	5	21.3	-16.3	-3.53
3	33	21.3	11.7	2.53
4	26	21.3	4.7	1.02
Total	64			

<p>The current instructional schedule in my school meets the needs of all students</p> <p>$(\chi^2 (3, N=64)=25.875, p<.001)$</p>				
	Observed <i>N</i>	Expected <i>N</i>	Residual	Standardized Residual
1	4	16.0	-12.0	-3.00
2	21	16.0	5.0	1.25
3	30	16.0	14.0	3.50
4	9	16.0	-7.0	-1.75
Total	64			

<p>The current instructional schedule in my school meets the needs of all remedial students.</p> <p>$\chi^2 (3, N=64)=36.250, p<.001)$</p>				
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	Observed <i>N</i>	Expected <i>N</i>	Residual	Standardized Residual
1	3	16.0	-13.0	-3.25
2	27	16.0	11.0	2.75
3	29	16.0	13.0	3.25
4	5	16.0	-11.0	-2.75
Total	64			

The current instructional schedule in my school meets the needs of all special education students $(\chi^2 (3, N=64)=24.375, p<.001)$				
	Observed <i>N</i>	Expected <i>N</i>	Residual	Standardized Residual
1	2	16.0	-14.0	-3.50
2	20	16.0	4.0	1.00
3	29	16.0	13.0	3.25
4	13	16.0	-3.0	-0.75
Total	64			

The current instructional schedule in my school meets the needs of all ELL students. $(\chi^2 (3, N=60)=22.533, p<.001)$				
	Observed <i>N</i>	Expected <i>N</i>	Residual	Standardized Residual
1	2	15.0	-13.0	-3.36
2	19	15.0	4.0	1.03
3	27	15.0	12.0	3.10

4	12	15.0	-3.0	-0.78
Total	60			

(*Chi-square statistic appears under each statement)

In addition to the Chi-square analysis, a Friedman test for mean rank was used to analyze how the respondents' answers were rank ordered with regard to the relative importance of these 10 statements with 5 being very important and 1 the least important. Table 4 shows the mean, mean ranks, and standard deviations for scheduling beliefs with all 10 items sorted in mean rank order. The Friedman test for mean rank order was found to be statistically significant, ($\chi^2(9, N=59)=219.105, p<.001$). The mean ranks of an instructional schedule can have a positive influence on student learning (8.36) and longer class periods can have a positive influence of student learning (6.68) had the strongest agreement while the strongest disagreement was regarding the instructional schedule meeting the needs of all remedial (3.56) and all students (4.13).

Table 4

Friedman Test on Instructional Scheduling Beliefs (N=59)

	<i>N</i>	Mean	Standard Deviation	Mean Rank
An instructional schedule can have a positive influence on student learning	59	3.88	.326	8.36
Longer class periods can have a positive influence on student learning	59	3.44	.650	6.68
Longer class periods can have a positive influence on the relationship between teacher and student	59	3.34	.633	6.28
The instructional schedule should support flexibility for periods to be of different lengths	59	3.27	.806	6.22
The instructional schedule should allow teachers an opportunity to see students at different times during the day	59	3.22	.671	5.92
Longer class periods can have a positive influence on student behavior	59	2.98	.754	4.84
The current instructional schedule	59	2.81	.776	4.52

in my school meets the needs of all special education students				
The current instructional schedule in my school meets the needs of all ELL students	59	2.83	.791	4.51
The current instructional schedule in my school meets the needs of all students	59	2.69	.749	4.13
The current instructional schedule in my school meets the needs of all remedial students	59	2.56	.650	3.56

Teaming

Findings with regard to teaming indicated that the sample of principals predominantly utilized interdisciplinary and/or single-graded teaming across all grades with students randomly assigned and mostly scheduled on team. The predominant composition of teams consisted of academic teachers and that approximately half of the principals reported that team facilitators/team leaders were utilized in their middle school. Table 5 shows that almost half of the teams consisted of four teachers, a statistically significant finding ($\chi^2(4, N=61)=42.167, p<.001$).

Table 5

Chi-square Analysis on Academic Teachers Assigned to Teams (N=61)

	Percentage	Frequency	Observed N	Expected N	Residual	Standardized Residual
2 Teachers	3.3%	2	2	12.0	-10.0	-2.89
3 Teachers	9.8%	6	6	12.0	-6.0	-1.73
4 Teachers	44.3%	27	27	12.0	15.0	4.34
5 Teachers	34.4%	21	21	12.0	9.0	2.60
> 5 Teachers	8.2%	5	4	12.0	-8.0	-2.31

Regarding teaming beliefs, a Chi-square analysis was conducted and determined that all nine Likert-scale items were statistically significant. Table 6 shows the Chi-square frequencies for teaming beliefs.

Table 6

Chi-square Analysis Results on Teaming Beliefs Per Question (4-Strongly Agree; 3-Somewhat Agree; 2-Somewhat Disagree; 1-Strongly Disagree)*

Teaming has a positive influence on the way classroom instruction is carried out and taught				
$\chi^2 (2, N=63)=34.667, p<.001)$				
	Observed <i>N</i>	Expected <i>N</i>	Residual	Standardized Residual
2	1	21.0	-20.0	-4.37
3	23	21.0	2.0	0.44
4	39	21.0	18.0	3.93
Total	63			

Teaming has a positive influence on the culture of learning within the school				
$\chi^2 (2, N=63)=48.667, p<.001)$				
	Observed <i>N</i>	Expected <i>N</i>	Residual	Standardized Residual
2	2	21.0	-19.0	-4.15
3	15	21.0	-6.0	-1.31
4	46	21.0	25.0	5.46
Total	63			

Teaming has a positive influence on student learning.				
$(\chi^2 (1, N=62)=7.806, p<.005)$				
	Observed <i>N</i>	Expected <i>N</i>	Residual	Standardized Residual

3	20	31.0	-11.0	-1.97
4	42	31.0	11.0	1.97
Total	62			

<p>Teaming has a positive influence on student behavior</p> <p>$(\chi^2 (2, N=63)=32.000, p<.001)$</p>				
	Observed <i>N</i>	Expected <i>N</i>	Residual	Standardized Residual
2	1	21.0	-20.0	-4.37
3	25	21.0	4.0	0.87
4	37	21.0	16.0	3.49
Total	63			

<p>Teaming provides students with a greater sense of identity and belonging</p> <p>$(\chi^2 (2, N=63)=22.952, p<.001)$</p>				
	Observed <i>N</i>	Expected <i>N</i>	Residual	Standardized Residual
2	6	21.0	-15.0	-3.28
3	20	21.0	-1.0	-0.22
4	37	21.0	16.0	3.49
Total	63			

<p>Teachers are prepared with the collaboration and communication skills needed to be an effective team</p> <p>$(\chi^2 (2, N=62)=17.452, p<.001)$</p>				
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	Observed <i>N</i>	Expected <i>N</i>	Residual	Standardized Residual
2	11	20.7	-9.7	-2.13
3	36	20.7	15.3	3.36
4	15	20.7	-5.7	-1.25
Total	62			

Teachers would benefit from receiving professional development on teaming.
 $(\chi^2 (2, N=63)=38.381, p<.001)$

	Observed <i>N</i>	Expected <i>N</i>	Residual	Standardized Residual
2	2	21.0	-19.0	-4.15
3	19	21.0	-2.0	-0.44
4	42	21.0	21.0	4.59
Total	63			

Teams have the ability to function in a leadership capacity
 $(\chi^2 (2, N=63)=21.238, p<.001)$

	Observed <i>N</i>	Expected <i>N</i>	Residual	Standardized Residual
2	4	21.0	-17.0	-3.71
3	32	21.0	11.0	2.40
4	27	21.0	6.0	1.31
Total	63			

Team facilitators/leaders have the ability to function in a leadership capacity				
($\chi^2 (2, N=63)=24.000, p<.001$)				
	Observed <i>N</i>	Expected <i>N</i>	Residual	Standardized Residual
2	3	21.0	-18.0	-3.93
3	33	21.0	12.0	2.62
4	27	21.0	6.0	1.31
Total	63			

(*Chi-square statistic appears under each statement)

In addition to the Chi-square analysis, a Friedman test was used to analyze how the respondents' answers ranked with regard to agreement or disagreement with the nine statements. Table 7 shows the means, mean ranks, and standard deviations. The Likert scale items are sorted in mean rank order. The Chi-square associated with this Friedman test was found to be statistically significant ($\chi^2 (8, N=62)=92.472, p<.001$). The mean ranks of *Teaming has a positive influence on the culture of learning within the school* (5.86) and *Teachers would benefit from receiving professional development on teaming* (5.49) had the strongest agreement while the strongest disagreement was regarding *Teachers are prepared with the collaboration and communication skills needed to be an effective team* (3.23) and *Teams have the ability to function in a leadership capacity* (4.35).

Table 7

Friedman Test on Instructional Scheduling Beliefs (N=62)

	<i>N</i>	Mean	Standard Deviation	Mean Rank
Teaming has a positive influence on the culture of learning within the school	62	3.71	.524	5.86
Teaming has a positive influence on student learning	62	3.68	.471	5.74
Teachers would benefit from receiving professional development on teaming	62	3.65	.546	5.49
Teaming has a positive influence on the way classroom instruction is carried out and taught	62	3.61	.523	5.48

Teaming has a positive influence on student behavior	62	3.58	.529	5.32
Teaming provides students with a greater sense of identity and belonging	62	3.50	.671	5.02
Team facilitators/leaders have the ability to function in a leadership capacity	62	3.39	.583	4.50
Teams have the ability to function in a leadership capacity	62	3.37	.607	4.35
Teachers are prepared with the collaboration and communication skills needed to be an effective team	62	3.06	.650	3.23

Common Planning

Findings with regard to common planning indicate that the sample of principals predominantly utilized team, grade level and departmental common planning for coordinating instruction, creating assessments and teacher preparation with varying durations and frequencies depending on the type of common planning. Table 8 shows that approximately 90% of the principals who responded reported that their middle schools utilized common planning, $\chi^2 (1, N=63)=35.063, p<.001$. Table 9 shows that approximately 90% of the principals who responded to the survey reported that their middle schools utilized common planning in all grades, $\chi^2 (1, N=54)=32.667, p<.001$.

Table 8

Chi-square Analysis on Common Planning in Middle Schools (N=63)

	Percentage	Frequency	Observed N	Expected N	Residual	Standardized Residual
Yes	87.3%	55	55	31.5	23.5	4.19
No	12.7%	8	8	31.5	-23.5	-4.19

Table 9

Chi-square Analysis on Common Planning in All Grade Levels (N=54)

	Percentage	Frequency	Observed	Expected N	Residual	Standardized
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			<i>N</i>			Residual
Yes	88.9%	48	48	27.0	21.0	4.04
No	11.1%	6	6	27.0	-21.0	-4.04

Regarding common planning beliefs, a Chi-square analysis was conducted and determined that all four of the Likert-scale rating statements were statistically significant. Table 10 shows the Chi-square results for common planning beliefs.

Table 10

Chi-Square Analysis Results on Common Planning Beliefs (4-Strongly Agree; 3-Somewhat Agree; 2-Somewhat Disagree; 1-Strongly Disagree)*

Common planning time has a positive influence on the way instruction is carried out and taught				
$(\chi^2 (21, N=60)=11.267, p<.001)$				
	Observed <i>N</i>	Expected <i>N</i>	Residual	Standardized Residual
3	17	30.0	-13.0	-2.37
4	43	30.0	13.0	2.37
Total	60			

Common planning time has a positive influence on the culture of learning within the school				
$(\chi^2 (1, N=60)=8.067, p<.005)$				
	Observed <i>N</i>	Expected <i>N</i>	Residual	Standardized Residual
3	19	30.0	-11.0	-2.01
4	41	30.0	11.0	2.01
Total	60			

Common planning time has a positive influence on student learning				
($\chi^2 (2, N=60)=42.700, p<.001$)				
	Observed <i>N</i>	Expected <i>N</i>	Residual	Standardized Residual
1	1	20.0	-19.0	-4.25
3	17	20.0	-3.0	-0.67
4	42	20.0	22.0	4.92
Total	60			

Teachers would benefit from receiving professional development on how to effectively utilize common planning time				
($\chi^2 (2, N=60)=57.700, p<.001$)				
	Observed <i>N</i>	Expected <i>N</i>	Residual	Standardized Residual
2	1	20.0	-19.0	-4.25
3	12	20.0	-8.0	-1.79
4	47	20.0	27.0	6.04
Total	60			

(*Chi-square statistic appears under each statement)

In addition to the Chi-square analysis, a Friedman test was used to analyze how the respondents' answers ranked with regard to their agreement or disagreement with the four statements. Table 11 shows the means, mean ranks, and standard deviations. The Likert scale items were sorted in mean rank order. The Chi-square statistic associated with the Friedman test was not found to be statistically significant ($\chi^2 (3, N=60)=2.471, p<.481$)

Table 11

Friedman Test on Common Planning Beliefs (N=60)

	<i>N</i>	Mean	Standard Deviation	Mean Rank
Teachers would benefit from receiving professional development on how to effectively utilize common planning time	60	3.77	.465	2.60

Common planning time has a positive influence on the way instruction is carried out and taught	60	3.72	.454	2.50
Common planning time has a positive influence on student learning	60	3.67	.572	2.47
Common planning time has a positive influence on the culture of learning within the school	60	3.68	.469	2.43

In addition to indicating their agreement or disagreement with common planning statements, the respondents were asked to rank the three types of common planning types in order of importance. A Friedman test for mean rank was found to be statistically significant, ($\chi^2(2, N=60)=22.800, p<.001$) when respondents were asked to rank from 1 through 3 the preferred type of common planning time. Table 12 shows the means, mean ranks, and standard deviations for common planning type models. The most popular type of common planning was team (1.50) followed by grade level (2.20) and lastly, departmental (2.30).

Table 12

Friedman Test on Common Planning Types (N=60)

	<i>N</i>	Mean	Standard Deviation	Mean Rank
Team Common Planning	60	1.50	.748	1.50
Grade Level Common Planning	60	2.20	.684	2.20
Departmental Common Planning	60	2.30	.788	2.30

Discussion

The results of this study have important implications for NYS Middle Schools with regards to teachers, school administrators, school districts, and boards of education who are interested in further understanding the practices and beliefs of middle school principals in NYS with an average need/resource capacity district regarding these three supports. This discussion will highlight important gaps between research/theory and practice among the sample of principals.

The first gap identified between research and practice focuses on the beliefs of principals regarding teaming; particularly their beliefs regarding teams and team leaders having the abilities to function in leadership capacities. Two of the three Likert-scale items to which principals demonstrated their strongest disagreement were the items that focused on teams and team leaders

functioning in a leadership capacity. Previous research studies (Grenda & Hackmann, 2014; Wahlstrom et al., 2010) have examined collective leadership and concluded that higher-performing schools give greater influence to teacher teams and that professional communities (teams) are strong indicators of successful instructional practices. These conclusions, drawn from previous research, are not in alignment with the beliefs of the sample in this study. An area of future research would be to explore this research-practitioner gap from a qualitative standpoint to further identify reasons for this disconnect.

A second gap identified between theory and practice focuses on the beliefs of principals regarding instructional scheduling. In particular, this implication focuses on the principals' belief regarding the type of instructional schedule that best meets the needs of their students. As previously discussed, the most popular instructional scheduling model among principals in this sample was flexible interdisciplinary block. Although flexible interdisciplinary block was the most popular in terms of ideal scheduling model, approximately 70% of the respondents utilized a traditional departmentalized schedule. Previous research studies (Mattox et al., 2005; Gill 2012) have examined instructional scheduling and concluded that the type of instruction schedule at the middle school level can have an influence on student learning. These conclusions are in alignment with the beliefs of principals' ideal instructional scheduling model but not in alignment with their current instructional scheduling model. These incongruent results directly speak to the work of Argyris (1993), where the organization or the leader of that organization "espouses" one thing but puts into practice something else entirely.

A possible reason for this incongruence or disconnect could be the current fiscal constraints that many public school districts are experiencing. The middle school supports suggested in the literature (Carnegie Council on Adolescent Development, 1989; Jackson, Davis, Abeel, Bordonaro, & Carnegie Foundation on Adolescent Development, 2000; National Middle School Association, 2010a; and National Middle School Association, 2010b) have financial implications that might be more costly than some districts want to commit to at this present time.

Conclusion

As previously discussed, middle level education is critical for the learning, development, and success of young adolescents (National Middle School Association, 2010a). In addition, the number of middle schools nationally has continued to increase from less than 5,000 in 1971 to more than 13,000 in 2008 (McEwin & Greene, 2011). This study provided a descriptive profile of three school supports (instructional scheduling, teaming, and common planning) to determine if they were either absent or present in NYS middle schools categorized with an average need/resource capacity. The importance of these three school supports at the middle level has been discussed and examined by scholars and advocacy organizations. The purpose of this study was to utilize the collected data to provide administrators and other stakeholders with an additional layer of information regarding the use of three specific school supports among New York State middle school principals whose districts were categorized as having an average need/resource capacity. It is the intent that the analysis of the data collected points to policies, practices, and/or programs that could increase support to improve student learning.

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AchieveNJ and Its Effects on Hiring Principals

This manuscript has been peer-reviewed, accepted, and endorsed by the National Council of Professors of Educational Administration (NCPEA) as a significant contribution to the scholarship and practice of school administration and K-12 education.



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The study described the influence, if any, AchieveNJ might have on superintendents' hiring decisions of principals. According to superintendents, there is not one accepted standard in principal leadership characteristics, although there are commonalities regarding traits associated with improving student achievement. The significance of this study is to unveil comparisons, distinctions, and conclusions about the impact AchieveNJ has had on superintendents' hiring decisions of principals, which will contribute to the literature gap on AchieveNJ. AchieveNJ was a new variable in the research and it forced superintendents to rank principal leadership characteristics. This groundbreaking policy is at the forefront of accountability and serves an educational milestone. The significance of the findings presented evidence that since AchieveNJ was introduced in 2013-14, instructional leadership was the most desired leadership trait when superintendents hire principals. Also, districts' and superintendents' demographic variables had no influence on the findings.

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Superintendents make recommendations to their boards of education to gain approval for the employment of a new principal. After the interview process, the superintendent makes a hiring decision on who is the best candidate. Obviously, there are external factors that influence their decisions. Each superintendent has his/her own set of most valued leadership characteristics used to assess the candidate pool, as well as in their selection of the successful candidate. A plethora of literature exists on superintendents' hiring decisions of principals, where a variety of qualities are valued by superintendents when considering a new principal (Arrowood, 2005; Clark, 2003; Dillon, 1995; Karol, 1988; Rammer, 2007b; Weber, 2009). Each superintendent has a different set of qualities they valued in principals.

Since 2010, the New Jersey Department of Education (NJDOE) has been working on a new educator evaluation system with the intent to improve all educator evaluations (NJDOE, 2013a). In the 2013-2014 school year, New Jersey public school superintendents were obligated to follow the state-mandated principal evaluation system named AchieveNJ, which assesses how well principals improve student achievement. There is little known about the influence AchieveNJ might have on superintendents' hiring decisions and educational practice itself. This policy was initiated in the 2013-2014 school year in order to meet the accountability mandates for educator effectiveness (NJDOE, 2013a).

The NJDOE has, for the first time, unveiled a new standardized educator evaluation system, AchieveNJ, where summative ratings will depend, in part, upon the proficiency percentages in student performance on state assessments. This new evaluation tool will encompass teachers and principals. In preparation for the unveiling, a comprehensive planning and two-year pilot programs existed in 2010 (NJDOE, 2013a; "What you need to know," 2013; however, this policy has not been free of controversy nor has it been accepted by all stakeholders. The New Jersey Education Association (NJEA), New Jersey Principals and Supervisors Association (NJPSA), and the Garden State Coalition are a few organizations who have voiced their concerns in the media and in writing against AchieveNJ ("Demanding a course of action," 2014; Keyes-Maloney, 2013; Garden State Coalition, 2013). There has been so much pressure and attack on the then New Jersey Commissioner of Education, Christopher Cerf, at the time of the unveil and enactment, that he released a broadcast memo identifying seven accusations from the NJEA and then responding with what he positions as facts (Cerf, 2014). Regardless if educators agree with AchieveNJ, it is a mandate that is approved, in progress, and must be instituted by school districts.

The assumption of the problem formulation is that while the literature helps us to understand what characteristics superintendents' value, it does not allow us to determine whether what they value could be influenced by the characteristics of the superintendents themselves. Over the last 3 years, the NJDOE has prepared for AchieveNJ's implementation, yet there has been resistance from teachers and administrators due to the newness of the policy, its rigorous standards, and percepts of its initiated abruptness ("New poll"; 2014; Mooney). The Commissioner of Education maintains AchieveNJ discussions have been collaborative with teachers' and administrators' unions from the start (Cerf, 2014). The NJEA and NJPSA maintain the exact opposite; their stance is that AchieveNJ was a top-down directive omitting their input (Keyes-Maloney, 2013).

This policy shift has created imperatives for school districts, such as tripling the amount of observations per year, documenting student growth objectives, measuring educator effectiveness by student achievement, and so forth, which were all not required in the past. Since AchieveNJ is in its inaugural year, it is unknown if this new mandate has influenced the hiring and selection of principals by superintendents or whether superintendents' own opinions of the new policy will

shape their hiring decisions. Moreover, does this new policy create a set of standards for district superintendents to follow? The purpose, therefore of this study is to describe the influence, if any, AchieveNJ has on superintendents hiring decisions. A substantial amount of literature exists on the qualities superintendents value when making hiring decisions for principals; however, within this literature base, superintendents' backgrounds influenced what principal qualities they looked for, such as their years of experience, education levels, district size, and so on (Arrowood, 2005; Clark, 2003; Dillon, 1995; Karol, 1988; Rammer, 2007b; Weber, 2009). Moreover, the principal characteristics superintendents' value may be influenced by the characteristics of each individual superintendent. Research provides evidence on the principal leadership characteristics that are valued by superintendents (Cotton, 2003; Leithwood & Jantzi, 1999; Marzano, Waters, & McNulty, 2005; McEwan, 2003; Stronge, Tucker, & Hindman, 2004; Whitaker, 2007). These characteristics include administrative experience, instructional leadership, fostering community relations, management skills, and so on. Given the findings from previous research, there is a lack of substantial literature conducted on the impact superintendents' backgrounds may have on the desired principal leadership characteristics, specifically in the areas of (a) instructional leadership, (b) management, (c) preparation and experience, and (d) communications.

Literature Review

The purpose of this study is to identify if AchieveNJ, the newly instituted educational evaluation system, has influenced New Jersey superintendents' hiring decisions of principals. Superintendents have their own set of most valued leadership characteristics to assess principal candidates, which can be influenced by their personal and professional backgrounds. The demand for this study is driven by the scant research about the effects AchieveNJ has on school districts, specifically in considering principal candidates. AchieveNJ ties principals' evaluations to student achievement, which never existed before; therefore, if principals cannot document improved student achievement, their job security and tenure are at risk. Hence, the principal plays a critical role in students' success. In an age of accountability, New Jersey is at the forefront of educational history. The literature helps us to understand the federal accountability regulations, evidence supporting principals impacting student achievement, effective principal characteristics, and superintendents' perceptions of the most valued principal traits; yet, it does not allow us to determine whether what superintendents' value could be influenced by the characteristics of the superintendents themselves, with AchieveNJ as a new variable in existence.

Although there is an abundance of research identifying leadership characteristics, there are also theory-based models identifying organization and leadership theories. Herron (1994) uses a historical approach to identify four ideologies in organizational theory: scientific management, human relations, bureaucratic, and open systems. Bolman and Deal (2008) have noted a similar concept in that they view organizations as acting in frames such as: political, human resource, structural, and symbolic. School leadership standards were also developed, and two popular ones are ISLLC, and NAEP (National Association of Secondary School Principals and National Association of Elementary Principals).

Leadership theories are vast, and there is not a one-size-fits-all as far as categorical names and models. The most frequently cited were leadership theories in trait, leadership behavior, contingency, charismatic, self-concept, transformational, transactional, constructivist, adaptive, power and influence, situational, and so on (Alig-Mielcarek, 2003; Gates, 2012, Hayes, 2012; Hopper, 2009; Larson, 2008; Maciel, 2005; Maness-Effler, 2012; Stewart 2012; Wiggins, 2013).

The two most popular theories, which many dissertations referenced are transformation and transactional leadership, which was introduced by Burns (1978). The discussion and distinction among the two can be summarized in stating that transactional is an exchange and transformational is about change.

While a significant amount of research and theories exist to define specific characteristics or qualities of effective principals and leadership, the fact that we cannot agree on a universal standard can be considered a research limitation. Additionally, there is no accounting for the research that points to socioeconomic status being the sole predictor of student achievement, inferring that regardless of the strategic steps principals and/or teachers take to improve student achievement, their success will depend upon the students' socioeconomic status (Coleman et al., 1966; Jencks et al., 1972; Tienken et al., 2013; Turnamian, 2012). Hence, students' family background and income are strong predictors of academic success. This research is worth mentioning here, as it ascertains a social dynamic effect on student achievement.

The role of superintendents is to hire the best candidates, and their decisions are influenced by their own personal and professional characteristics. Baltzell, Dentler, and Abt Associates (1983) and the National Institute of Education were the first to author a national report on school districts choosing leaders. They found that "good fit" for the community and personal characteristics sometimes are the deciding factors of successful candidate selection (Baltzell & Dentler, 1983). Contrary to Baltzell, Dentler, & Abt Associates (1983), Karol (1988) found that one's ability to relate to his/her school's demographics bears potentially greater clout than his/her professional qualifications; therefore, regardless of superintendents' decisions on whom to hire, there are multiple influential factors that fluctuate among superintendents.

In summary, a significant amount of empirical research proves classroom instruction impacts student achievement followed by school leadership, where school leaders possess certain characteristics, which have proven to impact student achievement (Leithwood et al., 2004; Waters et al., 2003). In fact, in almost all of the research reviewed, this concept was mentioned; therefore, there are characteristics that are desirable to superintendents when hiring principals. These characteristics are identified in 11 states and encompass instructional leadership, management skills, preparation and experience, communications and external relationships, and so on as outlined in Table 1.

Table 1

Highlights of Superintendents' Most Valued Principal Traits

Author	Highlights of Superintendents' Most Valued Principal Traits
Van de Water (1987)	Instructional leadership, commitment to academic goals, human relations skills. Less important was being a business manager
Karol (1988)	Educational experience and expertise, curriculum expertise, program/staff development, understanding teaching and learning, interpersonal skills.
Baron (1990)	Professional references, standard administrative certificate, teaching experience, alignment of candidate goals with the school system goals
Martin (1990)	Leadership characteristics defined as: decision maker, change agent supervisor/evaluator, facilitator, and curriculum evaluator
Dillon (1995)	Human relations & instruction

Muhlenbruck (2000)	Human relation skills, instructional leadership, experience, and organizational fit with district
Baker (2001)	Experience, decision-making skills, good judgment, sense of justice, community focus, and management skills focused on instruction
Clark (2003)	Administrative experience, teaching experience and leadership, specifically: curriculum, human relations, special education experience, technology, data analysis and finance
Arrowood (2005)	Creating positive learning environments, student achievement, instructional leadership, child focused, integrity, goal setting, visible, hiring great teachers, communicating, staff development, enthusiasm, data use toward student achievement, involving staff in decisions
Rammer (2007b)	McREL's 21 leadership responsibilities and six were significant and grouped as: Educational Vision/Practice, Conceptual Motivation, Awareness, Interaction, Achievement, and Adaptability. The four most important were: Communication, Culture, Outreach, and Focus. Communication was most important.
Weber, R. (2009)	Instructional leadership: classroom evaluation, motivate teachers to improve instruction. Communication and external relationships: working well with others and communicate in writing. Dealing with student conflict & creating positive learning environment. Preparation & experience: familiarity with district
O'Malley (2011)	Teaching experience, administrative experience, advanced degrees, human relations, instructional leadership,

What might be important to one superintendent might not be as important to another. Potentially, the superintendent's job scope, years of experience, district size, or other factors, might affect the criteria sought after (Weber, 2009). As the literature explains, superintendents hire principals, and their decisions are influenced by a variety of factors. The literature portrays the various characteristics superintendents consider when selecting a principal, and there is no agreement regarding what those characteristics are, although there are commonalities. Due to the newly implemented AchieveNJ, there is no research on the effects this policy might have on superintendents' hiring decisions of principals; hence, this is what this investigation explores.

Method

The population for this study encompasses the individuals who are New Jersey superintendents during the 2014-2015 school year, which consisted of 693 superintendents as identified by the New Jersey Department of Education's Public School Directory website. Superintendents must be employed in public school districts, as these superintendents are required to implement AchieveNJ. The array of public school superintendents in New Jersey consisted of rural, suburban, and urban

school districts, varying in grade configurations such as, K–12, K–6, K–8, 9–12, and so on and superintendents who were fulfilling the shared role of principal and superintendent as well as pure superintendents.

A purposeful convenience sample was chosen to identify and represent the population as to ensure a high success rate of return of the survey. Superintendents meet monthly within their county and that was how the sample was chosen. The total number of completed surveys was 61, which was a 64.2% response rate. A survey was the selected instrument to gather the data because the basis of this research involves how superintendents view AchieveNJ in relation to hiring principals. The most direct way to attain answers to questions relevant to this topic would be to survey superintendents. As noted by McKenna, Hasson, and Keeney (2006), the limitations to choosing a cross-sectional survey is that it gathers data in one point in time and does not account for changes in subsequent years (as cited in Coughlan, Cronin, & Ryan, 2009). The survey instrument was driven by three prominent studies of superintendents' perceptions on hiring principals (Rammer, 2007b; Reichhart, 2008; Weber, 2009) where intensive and thorough literature reviews of the effective characteristics of principals were synthesized and revealed.

The survey consists of six parts with five subquestions in each relating to AchieveNJ, instructional leadership, management, preparation and experience, communication, and superintendent background information. The first five parts asked superintendents to circle the level of importance they place on each item. The sixth part, consisting of five questions, asked for superintendents to complete background information about their district and professional characteristics. The content of each of the subquestions was driven by the literature review in Reichhart (2008) and Weber (2009) and was consistently echoed in the literature review. In the studies conducted by Reichhart (2008) and Weber (2009), their survey instruments, although different, had commonalities among the questions. Each survey endured a critique and field test for item reliability. Due to the nature of the current survey, the previous surveys' reliability is justified for the item content in this instrument.

Data Analysis

Survey answers were entered into an Excel spreadsheet and exported into Statistical Package for the Social Sciences (SPSS, Version 22.0) to prepare the results for analysis. Descriptive statistics and cross tabulation were used, which covered frequencies, mean, standard deviations, and scale scores. Additionally a 0.05 significance level was maintained. Results were interpreted using categorical methods of independent *t* tests, one-way ANOVA, chi-square test, and frequency distribution to determine if AchieveNJ has had any influence on superintendents' hiring decisions of principals. The answers to the three research questions will be analyzed as follows:

Research Question 1 Analysis

To what extent are superintendents' hiring decisions of principals influenced by their opinions about the new policy AchieveNJ? What importance in their hiring decisions do superintendents place on (a) instructional leadership, (b) management, (c) preparation and experience, and (d) communications?

Research Question 2 Analysis

To what degree is there an association between a superintendent's background and the leadership characteristics that he/she values in the principalship?

Research Question 3 Analysis

To what extent, if any, are there consistencies across districts regarding superintendents hiring principals?

Findings and Discussion

When superintendents were asked to evaluate the importance of AchieveNJ regarding their hiring decisions of principals, specifically identifying if AchieveNJ impacted the importance attributed to: education policy, principal practice, principal accountability, improving student achievement, and hiring effective principals, 77% (47 out of 61) said that principal accountability was *very important* or *important*. This was the highest percentage on any part of the frequency tables with the entire survey. Moreover, the percentage of superintendents who rated all five of the AchieveNJ indicators were as follows: principal practice (72.3%), improving student achievement (67.2%), hiring effective principals (6.2%), and education policy (60.7%). Regarding the mean scores, this part of the survey had the highest range of the means (3.36 to 3.92). These results conclude that the majority of superintendents in the sample said that the AchieveNJ factors impacted the importance they placed when making hiring decisions for principals.

The second part of the research question investigated the importance superintendents' place on (a) instructional leadership, (b) management, (c) preparation and experience, and (d) communications. Of the 61 superintendents who completed the survey, instructional leadership had the highest ranges in the mean scores (3.41 to 3.64) and frequency table percentages, where 62.3% to 70.5% of superintendents rated the indicators of instructional leadership to be *very important* or *important*. The summary variable correlation also indicates that instructional leadership had the highest correlation with AchieveNJ ($r = .799$). These findings are consistent with the literature regarding the role of a principal is to be an instructional leader (Alig-Mielcarek, 2003; Dufour & Eaker, 1999; Marzano et al., 2005; Matos, 2006; Reichhart, 2008; Stronge et al., 2004; Valenti, 2010; Weber, 2009). The majority of superintendents' responses to this part of the survey indicate that AchieveNJ had impacted the importance they place on the indicators of instructional leadership, and they viewed it to be the most important characteristic among the other three.

The next part of the survey asked superintendents to respond to how AchieveNJ had changed the importance they attributed to the principal's ability to meet the indicators of management. The responses here identify that management is not as important as instructional leadership when considering leadership characteristics of principals. The summary variable correlation indicates that management is the least strong correlation with AchieveNJ ($r = .479$). The literature supports these findings where the paradigm shift is that the principal is expected to be an instructional leader rather than a manager (Glass & Bearman, 2003; Rammer, 2007b; Simon, 2003; Van de Water, 1987).

Part 3 of the survey questioned superintendents in the area of the principal's preparation/experience, regarding how AchieveNJ changed the importance superintendents attributed to the principal's ability to meet the subquestions related to preparation/experience. The summary variable correlations indicate that the principal's preparation/experience is the second most important area next to instructional leadership superintendents value regarding AchieveNJ ($r = .616$). This means that an effective and strong principal would have to have the background, preparation, and experience to be an effective instructional leader, which is supported in the literature base (Smith & Hoy, 2007; Marzano et al., 2005; Norton, 2003; Waters & Cameron, 2007).

Part 4 of the survey related to this research question asked superintendents to respond to how AchieveNJ changed the importance they attributed to the principal's ability to meet the indicators of communication. The summary variable correlation places communication as second to last (or third among all four characteristics) in the ranking of most important indicators of hiring decisions considering AchieveNJ ($r = .597$). So, although keeping up with communication is a factor in considering a principal, it is third most important.

Simply stated, the correlation of summary variables show that the leadership characteristics superintendents' value most in priority order are: instructional leadership, preparation/experience, communication, and management last. These findings contribute to the substantial literature base regarding qualities of an effective leader and the array of characteristics superintendents' value (Arrowood, 2005; Cotton, 2003; Dillon, 1995; Leithwood et al., 2004; O'Malley, 2011; Van Meter & Murphy, 1997). It is interesting to note that the four characteristics were supported by the literature, and this study explains the ratings given to the four areas in priority order. The difference in this study is that AchieveNJ was the variable impacting superintendents' views on the four principal characteristics when making hiring decisions. One can infer that AchieveNJ has forced superintendents to consider the factors in rank order when hiring principals. It appears that the demands of AchieveNJ increase the probability that superintendents are more strategic when hiring principals.

Recommendations for Future Research

In order for this study to situate itself in the larger literature base, replication is the most important recommendation for future research. If this study were to be conducted in all 21 New Jersey counties in the 2015-2016 school year, we would have the most comprehensive data on the power AchieveNJ has over superintendents and their hiring decisions of principals. Furthermore, it would be extremely easy to conduct this study at all superintendent roundtable meetings in the 21 counties. Having these data will further tell the New Jersey Department of Education, state legislators, local government officials, superintendents, principals, and boards of education the impact this new policy has instituted on our educational system here in New Jersey. It will also provide some implications to how that fits into the larger federal mandates of No Child Left Behind (NCLB).

Next, a task force should be formed composed of members from the New Jersey Department of Education (NJDOE), New Jersey Education Association (NJEA), New Jersey Association of School Administrators (NJASA), New Jersey Principals and Supervisors Association (NJPSA), New Jersey Executive County Superintendents, and local superintendents from all 21 counties to review the replication results of this study. In addition it is important to gather more information on how AchieveNJ is being received by local districts in practice and how its implications affect hiring decisions. This task force can also serve as the group to review the replication results of the future study recommended above.

Finally, principal preparation programs should be examined to focus more closely on providing specific guidance on how to lead instructionally. What are some of the evidence-based practices that help teachers become better instructors and what is the principal's role in the process? If principal preparation programs approach their curriculums from an instructional leadership standpoint, it would vastly change how we are currently preparing principals. Instructional leadership has to be the focus around all other standards of the programs. Also, principals should be versed in the components of AchieveNJ and how it will impact their role in

the school. There are great principals who have overcome AchieveNJ and supportive of the accountability movement, and striving principals should see what an exemplar looks like.

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Impact of Summer Recess on Mathematics Learning Retention

This manuscript has been peer-reviewed, accepted, and endorsed by the National Council of Professors of Educational Administration (NCPEA) as a significant contribution to the scholarship and practice of school administration and K-12 education.

2016 Morphet Dissertation Award Winner

As the Morphet Award Winner this manuscript is being formatted in the manner in which it was submitted for consideration.



David Hornack
Holt Public Schools

School administrators across the nation are actively searching for solutions to increase student achievement due in part to the significant amount of knowledge that is lost annually each summer. Mathematical computation skills are especially at-risk. This quantitative research study was designed to investigate the impact of summer recess also known as summer vacation on mathematical computation skills. Assessing children in second and third grade from two different school calendars accomplished this on two separate occasions. First, children from a traditional calendar school and a balanced calendar school were assessed the last week of school respectively using a standardized benchmark assessment called the M-COMP. The same children were then post-tested using the same test following the summer recess. For the traditional calendar children the length of time between each assessment was 12-weeks. Participants from the balanced school calendar were post-tested following a six-week summer recess. Dramatic results were revealed.

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State the purpose of the research, the justification for it, and why it was done this particular way:

The Purpose of this empirical study was to investigate the relationship between the length of summer recess and mathematical learning retention with second and third grade students in a Midwestern state. Previous research regarding the balanced school calendar and its effects on the summer learning loss has been somewhat inconclusive and dated. In the majority of cases, previous research focused on state assessment data. While working with a secondary data set such as state assessment data has benefits, there are flaws to using a secondary data set to study the impact that summer recess has on mathematics learning retention. Two common concerns include the fact that state assessment questions and the participants change annually. By using a pre-test/post-test comparison study, the participants and the test remain constant, thus this study was designed to mitigate the concern of many previous studies.

State how the research may contribute to knowledge and/or practice in educational administration:

When seeking ways to mitigate the impact of summer recess on mathematics, this study gives policy makers, educational leaders, and interested stakeholders the statistical data needed to advocate for a shorter summer recess based on empirical evidence.

Theory/Rationale: State the explicit theoretical basis or rationale for the research, referring to the relevant literature:

Proponents of the balanced school calendar use Faucet Theory to support their position (Entwisle, Alexander, & Olson, 2001). Faucet theory developed by Entwisle, Alexander, and Olson (1997) is the belief that during the academic school year, the faucet of resources flows for all children; during the summer intermission the faucet of resources is turned off (Rozelle & Mackenzie, 2011). Faucet theory, as it relates to education, rests upon two dominant assumptions: 1) When children are in session, all children can access the curriculum and learn, however, during the summer recess, the learning resources are turned off, and 2) The amount of resources available to a middle class child compared to an at-risk child may contribute to further summer learning loss gaps (Borman, Benson, & Overman, 2005; Gershenson, 2013; Miller, 2007; Rozelle & Mackenzie, 2011; Zvoch & Stevens, 2013). A typical 12-week summer produces a loss of 2.6 months of previous learning in mathematics (Entwisle et al., 2001). Without investigating alternatives to minimizing the loss that occurs during the summer recess, teachers and administrators will continue to be required to close the gaps created each summer.

State the problems/questions/hypotheses that were proposed to be answered and/or tested in the research as derived from the theory/rationale.

The quantitative study was designed to answer the following questions:

- 1) To what extent does the length of summer recess impact student mathematical learning retention?
- 2) Is there a relationship between student mathematical learning retention and economic

status of students, gender, intersession attendance, and academic calendar?

Research Procedures: Describe the population studies, including any sample.

The population in this study included second and third grade children that attended school in the spring and fall of 2014. Half of the sample attended school on the traditional school calendar with a 12-week summer recess and the other half attended school on a balanced school calendar with a six-week summer recess. The selected schools had similar free and reduced lunch percentages and similar achievement levels based on the state education assessment. Each school had a similar teaching staff and each selected classroom was at or near capacity with limits of 25-27 children.

Describe the instruments/procedures used in data collecting, including any sampling procedures.

Purposeful sampling was used to identify and select the schools. Only second and third grade students with parental consent participated. In this study, approximately 200 second and third graders from a traditional calendar school and approximately 175 students from a balanced calendar school were invited to make up the sample. The actual total sample size (N=237) included 120 female students and 117 male students.

Give the dates during which the data were collected.

- Balanced Calendar Data Collection: June 2014 & August 2014 (Six-weeks between each collection)
- Traditional Calendar Data Collection: June 2014 & September 2014 (12-weeks between each collection)

Describe the techniques used for data analysis, including any scaling forms and statistical procedures.

Descriptive statistics were used to provide a summary. The analysis included a paired- samples T-test to determine if there was a significant relationship between the independent variable, the type of school in which a child is enrolled, and the dependent variable, student mathematical learning retention. In this case, AIMSweb M-COMP scores for students enrolled in a school with a six-week summer recess (balanced calendar) and a school with a 12-week summer recess (traditional calendar school) were compared. Participants took the M-COMP test at the end of the school year. The students from both groups took the same assessment approximately 42-84 days later.

SPSS® software, version 22 was used to analyze the data. While analyzing the relationship between the variables, a multiple regression was conducted to determine if there is a significant relationship between the independent variables, economic status, gender, attendance in summer intersession, and academic calendar and the dependent variable, student post-test results. In this study, the M-COMP post-test scores for each student were compared with the economic status of the sample, the gender of the selected students, whether or not a student received remediation or enrichment over the summer, and the academic calendar for each participant.

State the validity/reliability standards used to establish the credibility of the data and analytic procedures used in the study.

Pearson's AIMSweb received the highest possible rating for predictive validity and reliability from the National Center on Response to Intervention (NCRTI, 2009). To determine if the instrument was valid, mathematical experts were engaged in analyzing the assessment and when all data were aggregated, the assessment was deemed standardized. In both cases, reliability and validation were consistently being scrutinized. Table 1 in the appendix describes the validity of the M-COMP benchmark assessment.

Findings and Interpretations: State the findings for the study. State any delimitations to be placed on the findings.

The analysis included a paired-samples t-test and the results indicated that there was a decline in test scores from the pre-test to the post-test as the result of summer recess for all children. Overall losses occurred regardless of the school a participant attended, however, when comparing the two academic calendars, the participants who attended school on the balanced calendar scored on average 5.527 points better than their counterparts on the traditional school calendar when comparing mean scores as shown in Table 2. Traditional calendar participants regressed on average of 7.913 points on the M-COMP due to the 12-week summer recess as compared to participants who attended the balanced calendar school that only regressed an average of 2.773 points on the pre-test/post-test assessment. These results demonstrated that children attending the balanced calendar school lose fewer mathematical computation skills over the summer.

A multiple regression was conducted to determine if there was a relationship between student mathematical learning retention and economic status of students, gender, intersession attendance, and academic calendar. Table 3 describes the results of the multiple regression. A result that achieved a level less than $p < 0.05$ was interpreted as significant. In this case, the data do not demonstrate statistical significance for economic status as the result of the regression $p < 0.062$. Therefore table 3 illustrates that children who received free or reduced lunch (economic status) had similar results regardless of which academic calendar they attended.

Relevant to this study, gender and attendance in summer intersession were also analyzed. In the case of the type of calendar, gender is not a significant factor when considering the type of school a student attends. The significance level for gender were $p < 0.654$, which is not considered significant.

Only 16 students in the entire population attended a mathematical remediation or enrichment opportunity over the summer, also known as summer intersession. Although the number of participants was low, children who participated in mathematical summer intersession scored better than their counterparts who did not. The significance level for children attending a summer intersession opportunity over the summer was $p < 0.000$. A case can be made that mathematical instruction in the summer regardless of the type; remediation or enrichment reduces the impact of summer recess.

The multiple regression analysis demonstrated a significance level of $p < 0.000$ for the type of

calendar the participants attended. As a result of the significance demonstrated, all children who attended the balanced calendar scored better on the M-COMP than their counterparts attending the traditional calendar school.

With a significance level of $p < 0.000$ for the pre-test, the multiple regression analysis demonstrated that all participants scored better on their pre-test on average than on their post-test. Reducing the summer recess should be a priority for administrators and policy makers, and community members interested in increasing student achievement.

Three delimitations potentially jeopardizing the external validity of this study include: 1) only results from two schools were included in this study; 2) the size of the population of this study may prevent it from being transferable or generalizable due to the ongoing changes at the federal, state and local levels; and 3) this study was limited to the impact the length of summer recess has on mathematics learning retention for second and third graders.

For statistical studies, include relevant descriptive and inferential statistics, summary tables and graphs.

This study was conducted to test the significance of summer recess on the retention of mathematical computation skills. Participants ($N = 237$) completed both the pre-test and the post-test. The population included 120 girls and 117 boys. All of the participants were in either second ($n = 117$) or third grade ($n = 120$) during the pre-test and were promoted to the next grade following summer recess. A brief survey was conducted prior to the post-test to determine whether or not a participant received remediation or enrichment over the summer in mathematics. Of the total $N = 237$ participants in the study, 54% ($n = 127$) attended a traditional calendar school, while the remaining 46% ($n = 110$) attended a balanced calendar school. In a determination of socioeconomic status, 42% ($n = 99$) of the participants were full paying lunch students, while 58% ($n = 138$) of the students were eligible for free and reduced lunch. Further defining the at-risk population, 54% ($n = 75$) of the students attended a traditional calendar while 46% ($n = 63$) of the students attended a balanced calendar.

Conclusion and Recommendations: State the conclusion from the findings.

The results of this study demonstrate that regardless of economic status and gender, children who attend a balanced school calendar with a summer recess of six-weeks retain more mathematical knowledge than their counterparts who attend school on the traditional school calendar with a 12-week summer recess. Furthermore, children who received some mathematical instruction while on summer recess retained more mathematical knowledge as compared to their peers who did not receive instruction during summer recess. Finally the length of summer recess has a significant impact on mathematical retention. All children in this study who attended the balanced school calendar outperformed their counterparts on the traditional school calendar. These results give policy makers and educational leaders empirical evidence to support the balanced school calendar.

Relate the conclusions to the original theory/rationale. State what has been learned for the field of educational administration from this research.

The results of this study have implications for the achievement gap and substantiate that the balanced school calendar is good for all children, it has been determined that the length of summer recess has a significant impact on mathematical retention for all children. It can be assumed that an alternative school calendar such as the balanced school calendar where the longest consecutive summer break must be no longer than six-weeks long has a positive impact on mathematical computation skills. It can also be assumed that when students receive some instruction in the summer regardless of remediation or enrichment, their ability to retain mathematical computational skills increases.

Various stakeholder groups will benefit from the results of this study. The intended purpose of this quantitative study was to provide policy makers, school board members, school administrators, teachers, and community members data about the relationship between the length of summer recess and student mathematics achievement. The results of this study have produced recommendations, future research, and should help change current perceptions of the impact of summer recess on mathematics skills retention. "Summer vacation is a grand thing. But in the twenty-first century, for many children, it may also be an anachronism" (Hess, 2006, p.5).

Suggest improvements on this research study and new questions that should be investigated.

1. In light of the reported results, this study should be replicated in other districts, as the sample size was relatively small.
2. Despite the confounding research supporting the benefits of the balanced school calendar for at-risk students, future investigations into mathematical computation skills is recommended as the results of this study did not find statistical significance with this population.
3. Due to the fact that the results of this research are not generalizable to a similar population, more research is needed to validate the results of this study.
4. This study was specific to the impact summer recess has on the learning retention of mathematical computation skills. As a result, testing other subject matter should be considered.

Based on this study, future research is needed to further explore the relationship between the at-risk status of a student and mathematical learning retention over summer recess. In addition, future researchers should consider replicating this study using other academic subjects. Although previous research by Kneese and Knight (1995) has identified that summer recess as most detrimental on mathematical computation skills, follow-up studies are warranted.

APPENDIX

Table 1. Descriptive and Reliability Statistics by Grade (Pearson, n.d.)

Grade	Mean*	SD ^b	SEM ^c	r ^d	Split-Half	Alpha ^d
1	36.0	12.8	4.02	.86	.89	.87
2	37.9	11.4	4.04	.82	.85	.82
3	51.2	17.6	4.67	.89	.90	.89

* Weighted average.

b Pooled standard deviation

c Average correlation coefficient and the actual standard deviation of the raw score for the probe

d The average reliability coefficients were calculated by using Fisher's z transformation.

Table 2. Mean Test Results

School	Pre-test Mean (Spring)	Post-test Mean (Fall)	Mean Difference
(Traditional)	41.94	34.03	7.913
(Balanced)	42.88	40.11	2.773
Overall			5.527

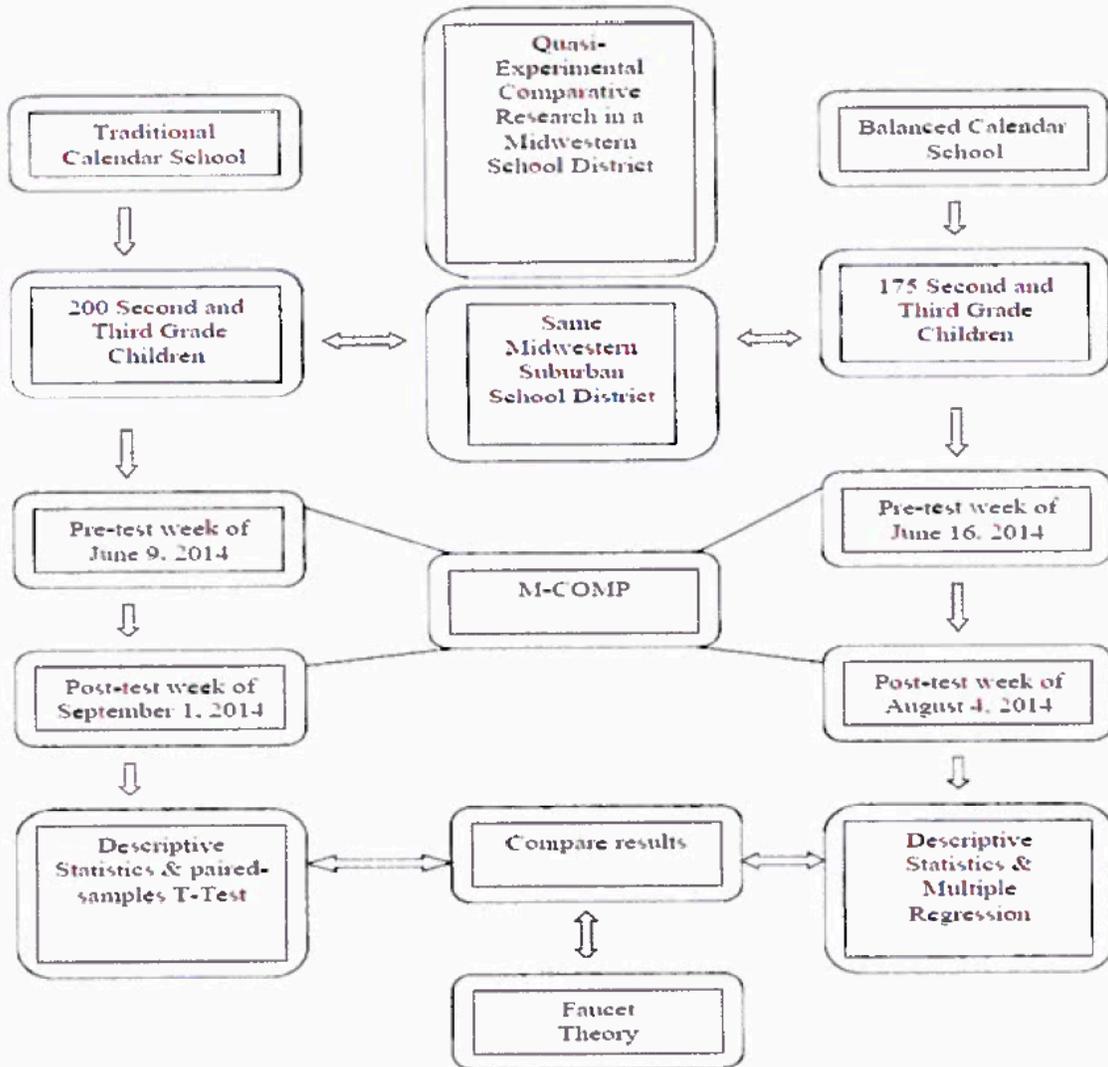
Table 3. Multiple Regression Results of Research_Question #2

Model	Unstandardized Coefficients (a)		Sig
	B	Std. Error	
(Constant)	-3.947	1.247	0.002
Gender:Male	0.308	0.685	0.654
South School_(Balanced)	5.082	0.683	0.000***
Economic Status	-1.308	0.699	0.062
Pre-test	0.910	0.024	0.000***
Participation in Summer Intersession	6.935	1.353	0.000***

***p<0.05

(a) Dependent Variable: Mathematical Learning Retention (post-test results)

FRAMEWORK



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