

Factors Affecting the Attrition and Retention of Middle School and High School Mathematics Teachers

Mathematics Teacher Retention Symposium
March 22-24, 2012

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Researcher's Background

- BA in mathematics
- MA in secondary education (math)
- Ed.D. in educational leadership
- K-12 math teacher for 21 years
- Community College math instructor for 18 years



Why Study Teacher Retention?

- Desire to learn why teachers leave
- Compare retention rates between regions of the country
- Determine differences in retention between middle and high school math teachers
- Desire to communicate results that could influence teacher training and support



Uniqueness of the Study

- Focus specifically on mathematics teachers in middle and high schools
- Nationwide random sample of current mathematics teachers
- Responses/retention compared by region, gender, age, ethnicity, teaching experience, class size, school enrollment
- Quantitative and qualitative findings



Research Question #1

- Are teacher demographic factors (such as gender, age, ethnicity, teaching experience, school enrollment, class size, and region) related to mathematics teacher retention?



Research Question #2

- Are induction/mentoring programs (with extra assistance and support) related to mathematics teacher retention?



Research Question #3

- Are classroom control factors (such as selection of textbooks, content, teaching techniques, grading, student discipline, and homework) related to mathematics teacher retention?



Research Question #4

- Are other school factors (such as administrative support, compensation, student behavior, student achievement, job satisfaction, teaching assignment, and certification) related to mathematics teacher retention?



Research Question #5

- Are there differences in the demographic, induction/mentoring, classroom control, and other school factors between middle school and high school mathematics teacher retention?



Background for the Study

- From 1987-2008, the number of high school students taking math courses increased by 69%
- The supply of new math teachers has more than kept pace with increased retirements and student enrollments
- Teacher turnover rates have increased 28% from 1995-2010.

(Ingersoll & Merrill, 2010)



Significance of the Study

- Almost a quarter of public-school teachers leave within the first 3 years
(U.S. Department of Education, 2007)
- High turnover rates affect student learning, create instability, increase costs in recruiting and training teachers
(National Center for Analysis of Longitudinal Data in Education Research, 2007)



What the Literature Says

- Age, experience, gender, and ethnicity are indicators of who goes into teaching and who remains in teaching (Marvel, et al., 2006)
- Higher levels of teacher participation in school decision-making indicate lower attrition (Liu, 2007)
- Administrative support, classroom control, and behavioral climate contribute to new teachers' decision to stay in teaching (Kukla-Acevedo, 2009)
- Studies of the effects of compensation on retention have mixed results (McKie, 2007; Feng, 2007)



What the Literature Says (con't)

- Traditional vs. Alternative Certification shows mixed results regarding teacher attrition (Humphrey, et al., 2005)
- Principal leadership is a key component in teacher retention (Nagy & Wang, 2006)
- Effective mentoring programs can improve retention (Villar & Strong, 2007)



Policies Addressing Teacher Retention

- Teacher “drop out” is estimated to cost the nation over \$7 billion a year (National Commission on Teaching and America’s Future, 2007)
- Keep Teachers Teaching Act of 2009
- Supporting Teachers to Increase Retention
- Troops to Teachers
- New Teacher Projects
- Teach for America
- Math and Science Teacher Initiative



Methodology

- Mixed methods design
- Random sample of middle school and high school mathematics teachers selected from a nationwide database
 - 2,000 middle school math teachers selected from a pool of 84,709
 - 3,000 high school math teachers selected from a pool of 132,252



Survey Distribution

- Survey, cover letter, and stamped return envelope mailed to 5,000 teachers
- Surveys were coded for tracking purposes and to ensure confidentiality
- Survey questions selected from the Schools and Staffing Survey (reliability = .630)



Survey

- During my first year of teaching, I received:
 - Reduced teaching schedule or number of preparations
Strongly Agree Somewhat Agree Somewhat Disagree Strongly Disagree
 - Common planning time with other teachers
Strongly Agree Somewhat Agree Somewhat Disagree Strongly Disagree
 - Seminars or classes for beginning teachers
Strongly Agree Somewhat Agree Somewhat Disagree Strongly Disagree
 - Extra classroom assistance (teacher aides)
Strongly Agree Somewhat Agree Somewhat Disagree Strongly Disagree
 - Regular supportive communication with principal/administration
Strongly Agree Somewhat Agree Somewhat Disagree Strongly Disagree



Survey

- I have control in my classroom in:
 - Selecting textbooks/instructional materials
Strongly Agree Somewhat Agree Somewhat Disagree Strongly Disagree
 - Selecting content, topics, and skills to be taught
Strongly Agree Somewhat Agree Somewhat Disagree Strongly Disagree
 - Selecting teaching techniques
Strongly Agree Somewhat Agree Somewhat Disagree Strongly Disagree
 - Evaluating and grading students
Strongly Agree Somewhat Agree Somewhat Disagree Strongly Disagree
 - Disciplining students
Strongly Agree Somewhat Agree Somewhat Disagree Strongly Disagree
 - Determining the amount of homework assigned
Strongly Agree Somewhat Agree Somewhat Disagree Strongly Disagree



Survey

- The school administrations' behavior toward the staff is supportive and encouraging

Strongly Agree Somewhat Agree Somewhat Disagree Strongly Disagree

- I am satisfied with my teaching salary

Strongly Agree Somewhat Agree Somewhat Disagree Strongly Disagree

- The level of student misbehavior in this school (such as noise, horse-play, or fighting in the halls/cafeteria) interferes with my teaching

Strongly Agree Somewhat Agree Somewhat Disagree Strongly Disagree

- I worry about the security of my job because of the performance of my students on state and/or local tests

Strongly Agree Somewhat Agree Somewhat Disagree Strongly Disagree



Survey

- I am generally satisfied with being a teacher at this school

Strongly Agree Somewhat Agree Somewhat Disagree Strongly Disagree

- If I could go back to my college days and start over again, I would become a teacher

Strongly Agree Somewhat Agree Somewhat Disagree Strongly Disagree

- Outside of my teaching career, I have a high degree of personal happiness

Strongly Agree Somewhat Agree Somewhat Disagree Strongly Disagree

- What is your current teaching assignment (Ex. 3 periods math, 2 periods science, 1 period P.E.)?



Survey

- How many years have you worked as a full time teacher?
- How many years have you taught mathematics at:
__middle school __high school
- Did you enter teaching through an alternative certification program? ___yes ___no
- Are you a Highly Qualified Teacher according to your state's requirements? ___yes ___no
- In your first year of teaching, did you participate in a teacher induction program?
___yes ___no



Survey

- Your student class sizes are typically:
 less than 21 students 21-30 students 31+ students
- What are the reasons you became a teacher?
(Please check all that apply):
 working conditions salary like working with young people
 professional status power personal fulfillment
 help others/make a difference benefits good career if you have children
 parent/family encouragement holidays/vacations influence of role model/teacher
 other (please specify)
- Gender: Male Female
- Age: _____



Survey

- **Ethnicity:** African-American American Indian/Alaska Native
 Asian Latino/Hispanic Native Hawaiian Pacific Islander
 White/Non-Hispanic Other
- **School Enrollment:**
 less than 100 101-500 501-1000 1001-2000 Over 2000
- In what state do you teach?
- How many more years do you see yourself teaching mathematics?



Survey

- If you plan to leave the teaching profession, please share your reason(s) why.
- Would you be willing to be contacted for an interview? Yes No
- Would you like a copy of the results of this study? If so, please provide your email address.



Interview Procedure

- Over 800 respondents agreed to be interviewed
- Surveys from respondents who stated intentions to leave teaching in the next 5 years were separated from the others
- 32 teachers were randomly selected to be interviewed from those intending to leave
- Interviewees chose email or phone interview
- Questions were emailed to participants prior to interview



Interview Questions

- What factors led you to become a mathematics teacher?
- What factors led to your decision to leave teaching?
- Were students, colleagues, administrators, compensation factors in your decision?
- Did you feel prepared when you entered the teaching profession?



Interview Questions

- In what areas did you feel least prepared?
- In what areas did you feel most prepared?
- Did you feel prepared in the content area (mathematics)?
- Did you feel prepared pedagogically?
- What did you like most/least about classroom teaching?



Interview Questions

- What changes would have to occur for you to change your mind about leaving the teaching profession?
- What career plans do you have after leaving teaching?
- If you were in charge, what would you do to increase the retention of mathematics teachers?
- Is there anything else you would like to share about your teaching experience?



Demographics of the Sample

- Number of Respondents by Gender

Gender	f	%
Male	584	37.2
Female	975	62.1
Total	1571	100.0

■ Number of Respondents by Age

Age	f	%
Less than 25	52	3.3
26-35	408	26.0
36-45	420	26.7
46-55	364	23.2
56-65	272	17.3
66+	23	1.5
No Response	32	2.0
Total	1571	100.0



Number of Respondents by Ethnicity

Ethnicity	f	%
African American	64	4.1
Asian	29	1.8
Latino	64	4.1
White	1365	86.9
Other	28	1.8
No Response	21	1.3
Total	1571	100.0

Regions of the United States



New England	Middle Atlantic	East North Central	West North Central	South Atlantic	East South Central	West South Central	Mountain	Pacific
CT	NJ	IN	IA	DE	AL	AR	AZ	AK
ME	NY	IL	KS	DC	KY	LA	CO	CA
MA	PA	MI	MN	FL	MS	OK	ID	HI
NH		OH	MO	GA	TN	TX	NM	OR
RI		WI	NE	MD			MT	WA
VT			ND	NC			UT	
			SD	SC			NV	
				VA			WY	
				WV				

- U.S. Census Bureau. (2010). *Census regions and divisions of the United States*. Retrieved from http://www.census.gov/geo/www/us_regdiv.pdf



Number of Respondents by Region

Region	f	%
New England	80	5.1
Mid-Atlantic	223	14.2
East North Central	273	17.4
West North Central	140	8.9
South Atlantic	248	15.8
East South Central	83	5.3
West South Central	195	12.4
Mountain	132	8.4
Pacific	197	12.5
Total	1571	100.0



Number of Respondents by Class Size

Class Size	f	%
Less than 21	315	20.1
21-30	999	63.6
More than 30	243	15.5
No Response	14	.9
Total	1571	100.0



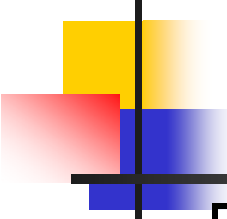
Number of Respondents by Teaching Experience

Years of Experience	f	%
5 or less	329	20.9
6-10	393	25.0
11-20	517	32.9
More than 20	324	20.6
No Response	8	.5
Total	1571	100.0



Number of Respondents by Experience Level

Experience Level	f	%
All middle school	499	31.8
Mostly middle school	140	8.9
Equal (middle/high)	27	1.7
Mostly high school	298	19.0
All high school	599	38.1
No response	8	.5
Total	1571	100.0



Number of Respondents by Years Left to Teach Mathematics

Years Left to Teach	f	%
5 or less	409	26.0
6-10	290	18.5
11-20	449	28.6
More than 20	198	12.6
No time frame stated	225	14.3
Total	1571	100.0



Number of Respondents by Leaving/Staying

Leave/Stay	f	%
Leaving	520	33.1
Staying	1051	66.9
Total	1571	100.0



Reasons for Becoming a Teacher

Reasons	Leaving		Staying		Total	
	f	%	f	%	f	%
Like working with young people	394	25.1	851	54.2	1254	79.2
Personal fulfillment	294	18.7	641	40.8	935	59.5
Good career if you have children	211	13.4	430	27.4	641	40.8
Influence of role model/teacher	319	20.3	616	39.2	935	59.5
Working conditions	99	6.3	212	13.5	311	19.8
Professional status	53	3.4	134	8.5	187	11.9
Help others/make a difference	392	25.0	747	47.5	1139	72.5
Parent/family encouragement	126	8.0	196	12.5	322	20.5
Salary	28	1.8	63	4.0	91	5.8
Power	5	.3	7	.4	12	.8
Benefits	104	6.6	247	15.7	351	22.3
Holidays/vacations	143	15.5	484	30.8	727	46.3

Quantitative Results

Demographic Factors - Age and Retention

Age	Leaving		% within leave/stay	Staying		% within leave/stay	Total	
	f	%		f	%		f	%
< 26	26	1.7	5.1	26	.7	2.5	52	3.4
26-35	186	12.1	36.2	222	14.4	21.7	408	26.5
36-45	135	8.8	26.3	285	18.5	27.8	420	27.3
46-55	109	7.1	21.2	255	16.6	24.9	364	23.7
56-65	53	3.4	10.3	219	14.2	21.4	272	17.7
> 66	5	.3	1.0	18	1.2	1.8	23	1.5
Total	514	33.4	100.0	1025	66.6	100.0	1539	100.0

- Age is significantly dependent on leaving/staying ($\chi^2 = 61.023$, $df = 5$, $p < .001$), with teachers in the age group 36-45 having the highest percentage of stayers, and the age group 26-35 has the highest percentage of leavers.

Quantitative Results

Demographic Factors - Ethnicity and Retention

Ethnicity	Leaving		% within leave/stay	Staying		% within leave/stay	Total	
	f	%		f	%		f	%
African American	23	1.5	4.5	41	2.6	4.0	64	4.1
Asian	11	.7	2.1	18	1.2	1.7	29	1.9
Latino	26	1.7	5.1	38	2.5	3.7	64	4.1
White	438	28.3	85.2	927	59.8	89.5	1365	88.1
Other	16	1.0	3.1	12	.8	1.2	28	1.8
Total	514	33.2	100.0	1036	66.8	100.0	1550	100.0

- Ethnicity is significantly dependent on leaving/staying ($\chi^2 = 10.104$, $df = 4$, $p = .039$) with white teachers who are staying having the highest percentage. Note that for African American, Asian, and Latino teachers, the percentage of leavers is higher than the percentage of stayers.

Quantitative Results

Demographic Factors - Teaching Experience and Retention

Years Teaching	Leaving f	%	% within leave/stay	Staying f	%	% within leave/stay	Total f	%
< 6	143	9.1	27.6	186	11.9	17.8	329	21.0
6 - 10	155	9.9	29.9	238	15.2	22.8	393	25.1
11 - 20	156	10.0	30.1	361	23.1	34.6	517	33.1
> 20	65	4.2	12.5	259	16.6	24.8	324	20.7
Total	519	33.2	100.0	1044	66.8	100.0	1563	100.0

- The years of teaching category is significantly dependent on leaving/staying ($\chi^2 = 49.880$, $df = 3$, $p < .001$) with teachers of 11-20 years of teaching experience and staying having the highest percentage. Note that teachers with less than 6 years experience and teachers with 6-10 years experience are more likely to leave than to stay in the teaching profession.

Quantitative Results

Demographic Factors - Region and Retention

Region	Leaving		% within leave/stay	Staying		% within leave/stay	Total	
	f	%		f	%		f	%
New England	23	1.5	4.4	57	3.6	5.4	80	5.1
Mid-Atlantic	61	3.9	11.7	162	10.3	15.4	223	14.2
East North Central	70	4.5	13.5	203	12.9	19.3	273	17.4
West North Central	40	2.5	7.7	100	6.4	9.5	140	8.9
South Atlantic	101	6.4	19.4	147	9.4	14.0	248	15.8
East South Central	32	2.0	6.2	51	3.2	4.9	83	5.3
West South Central	84	5.3	16.2	111	7.1	10.6	195	12.4
Mountain	50	3.2	9.6	82	5.2	7.8	132	8.4
Pacific	59	3.8	11.3	138	8.8	13.1	197	12.5
Total	520	33.1	100.0	1051	66.9	100.0	1563	100.0

- Region is significantly dependent on leaving/staying ($\chi^2 = 30.802$, $df = 8$, $p < .001$) with teachers in the East North Central region who are staying having the highest percentage. Note that the highest percentage of leavers is in the South Atlantic region.



Quantitative Results

Induction/Mentoring Programs and Retention

	Sum Squares	<i>df</i>	Mean Square	F	<i>p</i>
Leave/Stay					
Teacher Induction Program	1.199	1	1.199	4.939	.026*
Highly Qualified Teacher	.000	1	.000	.002	.968
Middle/High School					
Teacher Induction Program	.041	1	.041	.169	.681
Highly Qualified Teacher	.319	1	.319	4.553	.033*

- There is a significant difference in the mean responses for teachers participating in an induction program between those who are leaving and those staying in the teaching profession. (participation in an induction program promotes higher retention). There is a significant difference in mean responses for highly qualified teachers between those teaching middle school and those teaching high school. (those teaching high school meet HQT status more than those teaching middle school).

Quantitative Results

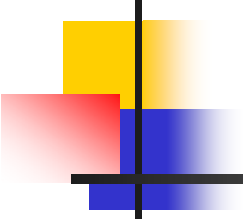
Classroom Control Factors and Retention

	Sum Squares	df	Mean Squares	F	p
Selecting Textbooks Between Groups Within Groups Total	7.259 1633.588 1640.847	1 1566 1567	7.259 1.043	6.958	.008*
Selecting Topics Between Groups Within Groups Total	7.010 1663.958 1670.969	1 1566 1567	7.010 1.063	6.958	.010*
Selecting Teaching Techniques Between Groups Within Groups Total	1.673 629.597 631.270	1 1566 1567	1.673 .402	4.161	.042*
Evaluating Students Between Groups Within Groups Total	.918 613.875 614.793	1 1568 1569	.918 .392	2.346	.126
Disciplining Students Between Groups Within Groups Total	1.703 758.388 760.092	1 1568 1569	1.703 .484	3.522	.061
Amount of Homework Between Groups Within Groups Total	1.180 491.113 492.294	1 1568 1569	1.180 .313	3.768	.052

- There is a significant difference in responses between those who are leaving and those who are staying in the teaching profession in the classroom control factors of selecting textbooks, teaching topics, and teaching techniques.

Quantitative Results

Other Factors and Retention



	Sum Squares	df	Mean Squares	F	p
Administrative Support Between Groups Within Groups Total	10.684 974.659 985.344	1 1558 1559	10.684 .626	17.079	.000***
Satisfied with Salary Between Groups Within Groups Total	44.844 1392.847 1437.691	1 1566 1567	44.844	50.419	.000***
Student Behavior Between Groups Within Groups Total	1.673 629.597 631.270	1 1562 1563	26.467 .930	28.449	.000***
Job Security/Student Achievement Between Groups Within Groups Total	20.401 1426.818 1447.220	1 1562 1563	20.401 .913	22.334	.000***
Satisfied as a Teacher Between Groups Within Groups Total	69.281 799.925 869.205	1 1563 1564	69.281 .512		.000***
Would Become a Teacher Again Between Groups Within Groups Total	108.075 1496.791 1604.866	1 1554 1555	108.075 .963	112.206	.000***
Personal Happiness Between Groups Within Groups Total	1.305 474.233 475.537	1 1563 1564	1.305 .303	4.300	.038*

Qualitative Results

Demographics of Interview Subjects

No.	Gender	Age	Ethnicity	Yrs. Exp	Level	State	No.	Gender	Age	Ethnicity	Yrs. Exp	Level	State
1	F	39	White	10	HS	SD	17	F	29	White	6	HS	CA
2	F	23	White	2	HS	FL	18	M	38	Latino	10	HS	TX
3	F	26	White	4	MS	IN	19	F	27	Asian	4	HS	PA
4	F	30	Afr. Am	8	HS	MD	20	F	26	White	4	HS	NC
5	F	30	White	9	HS	IL	21	F	26	White	4	HS	UT
6	F	26	White	5	MS	KS	22	M	31	White	5	HS	NV
7	F	31	Afr. Am	3	MS	TX	23	F	43	White	10	MS	IL
8	F	31	White	8	HS	CA	24	M	35	Latino	5	MS	CA
9	M	42	Latino	6	HS	AL	25	F	35	White	11	MS	OH
10	F	51	-----	24	MS	TX	26	F	36	White	7	HS	TX
11	M	37	White	6	HS	CT	27	F	30	Other	7	HS	CT
12	F	49	White	26	HS	AZ	28	M	27	Afr. Am	5	HS	FL
13	F	32	Afr. Am	4	HS	LA	29	M	45	White	23	HS	WA
14	F	28	Latino	6	HS	FL	30	F	28	White	6	MS	UT
15	M	34	Other	14	HS	MS	31	F	32	White	9	HS	CA
16	M	35	Latino	5	HS	TX	32	F	32	White	8	HS	KS

Qualitative Results

Question 1: What factors led you to become a mathematics teacher?

Common Themes	f	Interview teachers' numbers
Always loved math	19	2,3,5,6,7,8,9,10,12,15,17,18,19,21,22,27,30,31,32
Likes working with young people	12	3,5,8,11,13,19,20,21,27,30,31,32
Influence of a teacher/role model	7	3,5,6,11,12,14,22
High need for math teachers	6	4,7,16,20,23,28
Likes having summers off	3	2,13,23
Convenience	2	24,28
Stimulating, challenging	1	29



Question 1

Comments

- Teacher 16 wanted to coach and became a math teacher so that he could easily move from one coaching job to another since math teachers are always in demand
- Teacher 23 was not initially certified to teach math. Began her career in the juvenile jail facility, and went back to obtain her math certification. Now teaches at an alternative school
- Teacher 26 earned her degree in business administration. She became certified to teach math through an alternative program, and became a math teacher because there was a job opening for a special education math teacher with a coaching assignment
- Teacher 32 loves math. Says teaching allows her to stay young and connect with young people longer than her peers in other fields

Qualitative Results

Question 2: What factors would lead to your decision to leave teaching?

Common Themes	f	Interviewed teachers' numbers
Lack of administrative support	8	1,3,5,8,13,14,17,26
Lack of parental support	5	1,3,10,31,32
Lack of suitable compensation	4	4,6,13,22
Another career opportunity	4	15,20,23,28
Lack of student accountability	3	5,8,9
Become an administrator	3	23,25,32
Lack of respect	2	5,6
Stay home with family	2	21,30
Not allowed to teach desired class	1	2
No vision in the educ. system	1	3
Pressure from state assessments	1	6

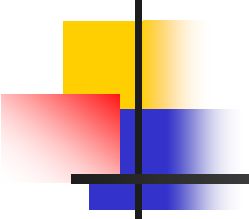


Qualitative Results

Sub Question #2

Question	Yes	No
Would colleagues be a factor in your decision to leave teaching?	7	25
Would administrators be a factor in your decision to leave teaching?	22	10
Would compensation be a factor in your decision to leave teaching?	15	17

Comments About Leaving

- 
- Teacher 11 enjoyed teaching, but not the extracurricular duties
 - Teacher 9 feels the new generation of students is not motivated
 - Teacher 25 feels students are not motivated, and are just passed on to another grade level, incapable of completing work
 - Teacher 8 cites lack of collaboration in the math department, toleration of student disruptions and truancy
 - Teacher 11 says teachers who coach sports are more valued
 - Teacher 27 says colleagues are resistant to change
 - Teacher 2 is frustrated with course re-assignment and not being able to teach the courses she wants
 - Teacher 3 says administrators give in to parents. They don't trust and support their teachers



Comments About Leaving

- “In-services and staff meetings are a total waste of everyone’s time when we could be working with the students”
- “Pressure is on teachers to lower failure rates and keep standards high”
- “We are only as strong as our weakest link. When administrators become the weakest link in a school setting and have the incorrect understanding of how a school should be ran, this renders the teacher powerless against many things.”
- “Administrators make decisions behind closed doors and hand them down for teachers to follow, without the input from the people who are involved with the actual learning of the students”

Qualitative Results

Question 3: In what areas did you feel least prepared when you began teaching?

Themes	f	Interviewed teachers' numbers
Classroom management	14	8,11,12,13,14,17,19,20,21,24,26,27,28
Scope and sequence	4	6,7,13,30
Math content	4	1,10,16,26
Student discipline	3	9,15,32
District protocols	3	22,29,32
Special needs students	2	4,5
Dealing with administration	1	2
Dispute resolution	1	3
Dealing with low ability students	1	18

Qualitative Results

Question 3: In what areas did you feel most prepared when you began teaching?

Themes	f	Interviewed teachers' numbers
Math content	21	2,3,5,7,8,9,10,11,14,15,16,17,19,20,21,22,24,27,28,29,32
Classroom management	8	2,3,12,18,22,25,30,31
Working with students	3	6,26,30



Comments About Preparedness

- Teacher 9 felt less prepared in the “extra duty areas such as standards, curriculum, and all of that educational stuff such as motivation theory, formative and summative testing, procedures and routines, learning styles, etc. It is just a bunch of useless fantasies - it doesn’t correspond to the reality of teaching a real classroom.”
- Teacher 32 says that “teaching is becoming more and more about how your students perform on state-mandated tests and although we all agree that this is a bad move, there really isn’t much we can do about it.”



More Comments About Preparedness

- Teacher 5 - “I think that some of the college professors have been out of the high school scene too long to really be in touch with how students are today and how teaching has changed.”
- Teacher 8 - “Nothing I learned in the credential courses really prepared me for the real teaching experience.”
- Teacher 20 - “I knew how to lecture, but forgot that my students were at an age where I needed to train them to take notes, get organized, and take personal responsibility.”

Qualitative Results

Question 4: What did you like most about classroom teaching?

Themes	f	Interviewed teachers' numbers
Relationships with students	25	1,5,6,7,8,9,10,12,13,14,16,17,18,19,20,21,24,25,26,27,28,29,30,31,32
The "ah-hah" moment	14	2,4,7,8,10,12,13,15,19,22,23,25,26
Content	4	3,11,17,23
Being creative in teaching	2	2,15
Variety	2	3,11
Schedule/vacations	2	6,31
Working with other teachers	1	1

Qualitative Results

Question 5: What did you like least about classroom teaching?

Themes	f	Interviewed teachers' numbers
Student disinterest/disruptions	13	4,5,7,8,10,11,14,17,19,21,23,24,30
Lack of administrative support	6	3,8,9,22,27,29
Jumping through "hoops"	5	2,15,19,22,32
Being blamed/having to justify actions	4	3,10,16,26
Classroom management	4	5,12,19,27
Unnecessary paperwork	4	20,26,28,32
Lack of parent support	4	23,25,31,32
State assessments	3	6,13,17
Useless faculty trainings/meetings	2	2,22
Block scheduling	2	1,16
Lack of standards for passing students	2	24,25

Qualitative Results

Question 6: What changes would have to occur for you to change your mind about leaving the teaching profession?

Themes	f	Interviewed teachers' numbers
Better compensation	7	4,6,9,11,19,28,30
Less legislative interference	5	12,18,20,28,29
Better parent support	5	1,3,7,13,32
Better student behavior/accountability	4	1,7,9,13
Better administrative support	4	1,13,14,16
Assessments	4	6,18,23,29
Better funding for schools	3	3,5,17
Better protections against law suits	2	3,9



Comments About Changes

- Teacher 5 - “It seems crazy to me that people with no experience in teaching are constantly changing regulations and mandates for our classrooms.”
- Teacher 6 - “I realize the need for assessments, but instead of looking at 7th graders year after year and just comparing 7th graders, we should be comparing the same class as they go through their education and looking at if more students in the same class are passing.”
- Teacher 12 - “The legislature should stop viewing hard working seasoned teacher as burnt out or complacent. They govern no other profession with such a strong arm. It really offends those of us who work hard and do a good job.”
- Teacher 14 - “Administrators should take time to listen to our concerns and make decisions based on those concerns. Sometimes we are treated like children that have no clue as to what we are doing.”



More Comments About Changes

- Teacher 13 - “It has come to the point in our society that the student and the parents are now protected more than the teacher. I feel heavy many days because I can’t fix a problem that I did not create, yet if the test scores are low it is all my fault. Our education system has turned into a system that has found a way to shuffle blame and responsibility to only one person . . .the classroom teacher. Where is the accountability of everyone else who has had a hand in the child’s education?”

Qualitative Results

Question 7: If you were in charge, what would you do to increase the retention of mathematics teachers?

Themes	f	Interviewed teachers' numbers
Merit pay/higher pay	12	1,2,4,6,7,9,16,25,26,29,30,32
More classroom support	11	2,9,10,12,14,17,18,20,23,25,26
Better administrative support	10	5,7,9,10,12,15,18,20,23,28
Smaller class sizes	6	2,8,9,12,17,24
Develop realistic goals	6	3,5,13,14,26,29
More academic freedom	4	8,18,22,28
Less preps for new teachers	4	17,23,27,32
Beneficial in-service days	3	8,25,28
Hold parents accountable	2	3,31
Higher standards for students	2	8,13
More community support	2	2,7



Qualitative Results

Question 8: Is there anything else you would like to share about your teaching experience?

- Teacher 2 - “Teaching is a journey. I love the fact that each day is a new challenge, and I like dealing with students. I would like to see the educational system broken down and completely rebuilt from scratch soon. I would love to be part of the change to start leading this country down a good path rather than the train wreck we are headed for.”
- Teacher 3 - “I love teaching, but resent the fact that when I cannot help a student that is not interested, it is held against me. I wonder why teachers constantly have to justify when students fail. How can I fix a problem if I don’t even know what kinds of remedies I’m supposed to be using? It’s almost like they’re asking me to solve an equation without telling me any of the rules for doing so.”

Qualitative Results

Question 8: Is there anything else you would like to share about your teaching experience? (continued)

- Teacher 17 - “I enjoy this challenging profession most of the time. I sometimes wonder if I could ‘do better’ at another profession. I worry that teachers are looked down upon, as if they only do the job because they aren’t smart enough to do something else. I worry about funding for education in this country, and how I may soon face classes even larger than my current 40 students. I also feel trapped, since the retirement system is such that I haven’t contributed to social security. It bothers me that the measures of a teacher’s performance are either arbitrary (whether an administrator who has never taught likes what he sees on a 2 minute walk through), or unreliable (standardized test scores where kids have no incentive to do well).”



Summary of the Research

Research Question 1

- **Gender and retention were not significant**
- **Age and retention were significant** (higher proportion of middle school teachers in 36-45 age bracket leaving, high school teachers in 26-35 age bracket leaving)
- **Teaching experience and retention were not significant**
- **Ethnicity and retention were significant** (minority teachers are leaving at a higher rate than white teachers)
- **School enrollment and retention were not significant**
- **Class size and retention were not significant**
- **Region and retention were significant** (South Atlantic, East South Central, West South Central, and Mountain regions had highest proportions of teachers leaving)



Summary of the Research

Research Question 2

- **1st year experience and retention were not significant** (majority of responding teachers were over 35 - began teaching before mentoring and induction programs became common)
- Participation in **mentoring/induction programs and retention were significant** (teachers involved in mentoring/induction were less likely to anticipate leaving teaching)
- Being a **Highly Qualified Teacher and retention were not significant** (more high school teachers reported being Highly Qualified than middle school teachers)



Summary of the Research

Research Questions 3 & 4

- **Classroom control and retention** were **significant** (teachers who felt loss of control in selecting textbooks, topics to be taught, and teaching techniques were more likely to leave the teaching profession)
- **Other school factors and retention** were **significant** (teachers dismayed with lack of administrative support, compensation, student behavior, job security/student achievement, satisfaction with being a teacher, and feelings about becoming a teacher again were more likely to leave the teaching profession)



Summary of the Research

Research Question 5

- **No significance** was found in retention rates between middle school and high school mathematics teachers
 - For lesser experienced high school teachers, proportion of leavers was higher than proportion of stayers
 - Region had an effect on retention for middle school teachers, but not for high school teachers (more middle school teachers leaving than staying in South Atlantic, West South Central and Mountain regions)
 - If the respondent was a minority, he/she was more likely to teach middle school than high school
 - High schools were more likely to have large enrollments than middle schools



Summary of the Research

Research Question 5 (continued)

- **No significance** was found in retention rates between middle school and high school mathematics teachers
 - High school teachers were more likely to have a reduced teaching schedule in their first year, than middle school teachers
 - Middle school teachers were more likely to have higher perceptions of job security in relationship to student achievement than high school teachers
 - Middle school teachers were more likely to have a higher level of personal happiness than high school teachers
 - None of the demographic, 1st year experience, classroom control or other factors were significant when tested against leaving or staying in the teaching profession



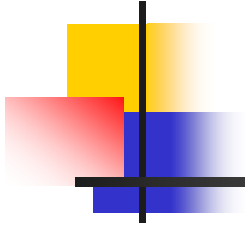
Primary Reasons for Leaving

Reasons	f	%
Retirement	340	39.5
Salary	69	8.0
Teachers blamed	115	13.4
Becoming an administrator	73	8.5
Family concerns	25	2.9
NCLB	77	9.0
Career change	72	8.4
Burnout	31	3.6
Workload	25	2.9
Other	33	3.8
Total	860	100.0



Recommendations to Increase Retention

- Fewer preparations for new teachers
- Smaller class sizes for new teachers
- Train administrators to support teachers
- Public relations campaign to support teachers
- Teacher input in legislation
- Mentoring programs for new teachers



Questions/Comments?

Thank you!!!