

Academic Paper

# Exploring Mentoring Practices Contributing to New Teacher Retention: An Analysis of the Beginning Teacher Longitudinal Study

Bonita Maready  (Desoto Central Primary School, Southaven )

 Qiang Cheng (The University of Mississippi)

Dennis Bunch (The University of Mississippi)

## Abstract

How to best support new teachers through the beginning years of their careers and thus to increase new teacher retention is an important question. To explore the predictor variables for new teacher retention from the perspective of effective teacher mentoring practices, multinomial logistic regression was applied in the secondary analysis of the restricted-use data of the Beginning Teacher Longitudinal Study (BTLs). The analysis identified both predictive and non-predictive mentoring practices for new teacher retention, which provides important insight for school leaders and policy-makers in regards to designing effective induction programmes to better increase new teacher retention.

## Keywords

Teacher Mentoring, Teacher Retention, New Teacher Induction, Teacher Turnover, Large Scale Dataset

## Article history

Accepted for publication: 16 July 2021

Published online: 02 August 2021



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Published by Oxford Brookes University

## Introduction

Retaining effective teachers is critical in reducing recruitment costs and providing instructional stability (Parker, 2010), particularly in schools with high-poverty and high-minority populations. High teacher turnover in schools has been a critical issue in the US for many years (Kelly, 2004), and studies estimate between 40% and 50% of new teachers leave the profession within five years of beginning their careers (Ingersoll, 2003; Ingersoll, 2012; Ingersoll & Strong, 2012; Kelly, 2004). Such high teacher turnover not only triggers detrimental financial costs (Carroll, 2007) but also cause the instructional quality to suffer as schools must frequently reconfigure teaching assignments, which leads to instability in instructional continuity and subsequent failure in building sustained relationships among teachers, students, parents, and the community (Simon & Johnson, 2015).

As a result of high teacher turnover, schools with high-poverty and high-minority populations were 1.5 times more likely to have teachers who are new to the school or new to the profession (Gagnon & Mattingly, 2012; Simon & Johnson, 2015). Since new teachers normally take an average of three years to reach high levels of effectiveness (Feiman-Nemser, 2012; Sanders & Rivers, 1996; Wright, Horn, & Sanders, 1997), these schools will inevitably suffer more from recruiting disproportionate number of novice teachers. Considering teacher effect has strong direct influence on student achievement (Stronge, Ward, & Grant, 2011), high teacher turnover rates place students in schools with high-poverty and high-minority populations at risk of significantly reduced student achievement.

Retaining effective teachers is critical in raising student achievement and keeping recruitment costs down (Parker, 2010) and new teacher induction programme has been recognized as a useful tool in improving new teacher retention (Cochran-Smith, Cannady, McEachern, Piazza, Power, & Ryan, 2010/2011; Ingersoll & Strong, 2012; Ronfeldt & McQueen, 2017), with teacher mentoring being one of the most common elements of new teacher induction process to help new teachers succeed in their initial placement years and thus remain in the teaching profession (Bullough, 2012; Hanita, Bailey, Khanani, Bocala, Zweig, & Bock, 2020; Resta, Huling, & Yeargain, 2013).

This study was designed to explore the predictor variables for new teacher retention from the perspective of teacher mentoring using a nationally representative longitudinal data. Understanding the variables having a high probability of predicting new teacher retention is significant because it informs policy makers and practitioners as they decide the types of specific mentoring practices that should be included in effective new teacher induction plans. Implementing a new teacher induction plan developed with strategies proven to predict retention from the perspective of mentoring will result in reduced turnover rates of new teachers and improved instructional stability in schools and districts, ultimately improving student achievement.

In the following, we will review the existing literature relevant to new teacher mentoring and retention to further justify the need of this study. Then in the methodology section, we will discuss the data source, population, sample, instrument, and data analytic approach, which will then be followed by the report of study results along with discussion of the results and implications.

## Literature Review

Mentoring has been identified as an important component in the new teacher induction programmes. The relationship between the decision to remain in the teaching profession and mentorship received provides the foundation for an effective induction programme for beginning teachers (Cochran-Smith et al., 2010/2011). A review of the literature indicates that when researchers examined the effectiveness of new teacher induction programmes, mentoring is often included in such endeavours, and there exist conflicting results in regards to the effectiveness of new teacher induction and mentoring.

On the one hand, a number of studies, both quantitative and qualitative in nature, have reported a correlation between implementing new teacher induction programmes and less teacher turnover or migration (e.g., Henke, Chen, & Geis, 2000; Ronfeldt & McQueen, 2017; Smith & Ingersoll, 2004). Henke and colleagues (2000) analysed data from a longitudinal study — Baccalaureate and Beyond Survey, and found that new teachers who received induction support during their initial years of career demonstrated a significantly higher retention rate than those who did not. In another study, Smith and Ingersoll (2004) analysed data from the School and Staffing Survey along with Teacher Follow-Up Survey that included 3,235 first-year teachers. Results from this study indicate that induction contributed to new teacher retention and specifically, beginning teachers who were provided with mentors from the same subject field and who participated in collective

induction activities, such as planning and collaboration with other teachers, were less likely to move to other schools and less likely to leave the teaching occupation after their first year of teaching.

In Kelly's study (2004) that was aimed at identifying the specific induction practices positively influencing retention of new teachers in the Partners in Education Programme (PIE), a joint effort between six Colorado school districts and the University of Colorado (UC), the researcher found that there was a high correlation between the intensive mentoring practices of the PIE programme and the retention rate of new teachers, revealing a 94 percent retention rate of new teachers starting their fifth year of teaching, which surpassed the national retention average. The intensive mentoring practices include mentors helping mentees in the area of short- and long-term curricula planning, developing standards-based lessons, creating individual and group authentic assessments, differentiating instruction to meet the needs of diverse learners, developing classroom communities and routines, observing lessons and providing feedback, modeling instruction, working with students, team teaching, examining student work, arranging observations of other classrooms, forming relations with colleagues and parents.

In still another study, Parker (2010) analysed data from North Carolina's Teacher Working Conditions Survey from public and private schools including only those surveys of teachers who had completed two years of teaching and were beginning their third year. This quantitative study analysed the data of a sample of 8,838 teachers and found beginning teachers who had been matched to mentors in the same building, content, or grade level were less likely to transfer to a different school. There was a positive relationship between the amount of support that new teachers received from their mentors and the likelihood they remained in the assigned school. Novice teachers expressed they were less likely to request transfers in schools where they received much support from their mentors and administrators in the area of curriculum and instruction, and constructive feedback. New teachers who met more frequently (several times a month), but less formally (discussions and planning during the day as opposed to formal meetings and observations), were more likely to remain in their current schools (Parker, 2010).

In Resta and colleagues' study (2013), they investigated approximately 1,000 teachers over a ten-year period who participated in the Novice Teacher Induction Programme (NTIP) developed to investigate the cumulative effects of teacher induction and mentoring programmes on novice teacher retention and instructional proficiency improvement. The researchers found teachers' reflection on their mentoring as a positive experience; many identified their mentors as being a key factor in their decision to remain in the profession due to the instructional and emotional support that was of the greatest help during their first year of teaching. Resonating with the results from the studies reviewed in the above, a more recent secondary analysis of Beginning Teacher Longitudinal Study (BTLs) by Ronfeldt and McQueen (2017) found that better teacher retention in the first year can be predicted by whether or not the new teachers have received induction supports that includes being assigned a mentor.

Relevant literature in this field that has identified a positive correlation between new teacher induction support and retention generally indicates that some effective mentoring practices can help improve new teacher retention. These practices include matching mentors to new teachers by content area and grade level (Parker, 2010; Ronfeldt & McQueen, 2017; Smith & Ingersoll, 2004), assisting in short-term and long-term lesson planning, instructional unit development, understanding the curriculum, developing aligned assessments, and managing classroom behaviours and routines (Kelly, 2004; Parker, 2010; Resta et al., 2013; Smith & Ingersoll, 2004). Reflective practices and regular discussions related to classroom practices are identified as being of long-term benefit to new teachers (Kelly, 2004; Parker, 2010; Smith & Ingersoll, 2004).

However, contrary to the multitude of studies that found a positive correlation between induction support and new teacher retention, some studies reported quite different result. One such study was a randomized controlled experiment conducted by Glazerman and colleagues (2010) in which 1,009 teachers from 418 elementary schools in 17 school districts across 13 U.S. states

participated. This large-scale study found that receiving a comprehensive teacher induction programme support for one or two years does not predict teacher retention in the new teachers' first four years of teaching career. Another study by Wechsler, Caspary, Humphrey, and Matsko (2012) investigated the effect of 39 state-funded induction and mentoring programmes in Illinois. Based on their analysis of the sample of 1,940 teachers and 1,362 mentors out of a full population of 2,670 teachers and 1,746 mentors who participated in the programmes, Wechsler and colleagues found that none of the induction programme measures, such as intensity of mentoring, can significantly predict new teacher retention within the same school or district. The variety of mentoring supports embedded in the induction programme of this study includes lesson planning, modelling, observation, classroom management, assessment, etc.

As indicated in the above review, a positive correlation between teacher induction and retention can be found in qualitative or survey studies; however, when such relationship was scrutinized in a more rigorous experimental study, no causal relationship can be found. Furthermore, some of the prior studies examined the overall effect of teacher induction on teacher retention by combining certain mentoring practices from the induction programme into composite variables (e.g., Ronfeldt & McQueen, 2017; Wechsler et al., 2012), obscuring the predictive power of certain mentoring practices for new teacher retention. There is still a lack of studies focusing on identifying the specific mentoring practices that can predict new teacher retention. To better and more thoroughly evaluate and identify the effectiveness of mentoring practices in the induction process, new research that employs longitudinal and nationally representative data to draw conclusions that can be generalized to larger population is much needed. Identifying which elements of mentoring practices greatly benefit novice teachers informs school leaders developing induction plans, potentially leading to an increase in new teacher retention rates.

## Methodology

The current study is a secondary analysis of the Beginning Teacher Longitudinal Study (BTLS) that was developed by U.S. Department of Education, Institute of Education Science, National Centre for Educational Statistics, and carried out by the U.S. Census Bureau from the 2007-08 school year through the 2011-2012 school year (Burns, Wang, & Henning, 2011). In the following, we will describe the data source, population and sample, the instrument, and the data analysis approach we applied in this secondary analysis.

### Data Source

The study utilized the restricted-use survey data files of the Beginning Teacher Longitudinal Study (BTLS). The purpose of the BTLS was to follow the career paths of the teachers and compile perceptual data providing information regarding the reasons for teachers staying in the same teaching assignment as the previous year, moving to other teaching assignments, leaving the teaching profession, remaining in the teaching profession, and returning to the teaching profession after leaving.

### Population, Sample, and Instrument

The target population for the BTLS was teachers who began their teaching careers in the U.S. in the 2007-2008 school year. The BTLS was made up of five annual surveys identified as "waves" with the first wave of survey data collected through the 2007-2008 Schools and Staffing Survey (SASS), in which a cohort of first-year public school or public charter school teachers beginning their careers in the 2007-2008 school year was surveyed for four additional years to provide a longitudinal examination of career progression as the teachers continued in teaching careers or transitioned to other careers, enabling researchers to identify mentoring related retention in the same school for a second year, and retention in the profession into the fifth year.

The initial wave of data from the 2007-2008 Schools and Staffing Survey (SASS) utilized a stratified probability sample size of approximately 47,600 teachers from all fifty U.S. states and the District of Columbia, representing public schools, public charter schools, and private schools, as well as teachers in schools funded by the Bureau of Indian Education (Tourkin et al., 2010).

The second wave of data was collected through the Teacher Follow-up Survey (TFS) in 2008-2009. The TFS surveyed current teachers—those teachers who stayed in the same school as the previous year or moved to a different school, and former teachers—those who left the teaching profession. The TFS Current Teacher Survey focused on reasons for moving to a new school, information on having a mentor in the first year (or not), and earnings. The TFS Former Teacher Survey focused on employment status, decisions to leave teaching, and information on having a mentor in the first year (Gray, Goldring, & Taie, 2014). TFS allowed researchers to collect and analyse information regarding decisions to stay and decisions to leave, as well as information regarding change of careers of former teachers. The stratified probability sample from approximately 11,960 teachers identifying themselves as new teachers in the first wave and responding in the second wave was approximately 2,192 teachers, approximately 18 percent of the sample from the first wave (Graham, Parmer, Chambers, Tourkin, & Lyter, 2011; Kaiser, 2011; Tourkin et al., 2010).

**Table 1. Mentor Practices Survey Items from TBLS**

Name	Description	Coding Scheme*
W2MNTYN	Last school year (2007-08), were you assigned a master or mentor teacher by your school or school district?	a
W2MNPRI	Was your mentor teacher's main job being a mentor during the 2007-2008 school year?	a
W2MNSUB	Has your mentor teacher ever instructed students in the same subject area(s) as yours?	a
W2MNGRA	Has your mentor teacher ever instructed students in the same grade(s) as yours?	a
W2MNFRQ	How frequently did you work with your mentor teacher during the 2007-2008 school year?	b
W2MNOBS	How frequently did your mentor teacher observe your teaching during the 2007-2008 school year?	b
W2MNIMP	Overall, to what extent did your assigned master or mentor teacher improve your teaching last school year?	b
<i>How frequently did your assigned master or mentor teacher work with you in the following areas?</i>		
W2MFBJ	Teaching your subject matter or grade	b
W2MFDIS	Classroom management and discipline	b
W2MFINS	Using or incorporating a variety of instruction methods	b
W2MFTEC	Using technology in your classroom	b
W2MFSTA	Assessing students and interpreting assessment data	b
W2MFCUR	Selecting and adapting curriculum, instructional methods, and/or writing lesson plans	b
W2MFPAR	Interacting with parents	b
W2MFREF	Reflecting on your teaching practice	b
<i>Reflecting upon the extent working with a mentor in several areas, how has your mentor improved your teaching in the area of:</i>		
W2MISBJ	Teaching your subject matter or grade	b
W2MIDIS	Classroom management and discipline	b
W2MIINS	Using or incorporating a variety of instruction methods	b
W2MITEC	Using technology in your classroom	b
W2MISTA	Assessing students and interpreting assessment data	b
W2MICUR	Selecting and adapting curriculum, instructional methods, and/or writing lesson plans	b
W2MIPAR	Interacting with parents	b
W2MIREF	Reflecting on your teaching practice	b

*Note.* Coding scheme “a” refers to 1=yes, 2=no, and coding scheme “b” refers to 1=at least once a week, 2=once or twice a month, 3=a few times a year, 4=never

The last three waves were web-based and internet-only surveys and were administered from the 2009-2010 school year through the 2011-2012 school year (Gray et al., 2014). These three waves of data allow researchers to determine attrition and reentry rates, gain understanding of the characteristics of the teachers who leave the profession (leavers), stay in the same schools

(stayers), those who move to other schools (movers), and those who re-enter the teaching profession (returners) (Tourkin et al., 2011). Additionally, the last three waves provide information regarding career paths of leavers, stayers, movers, and returners. Altogether, approximately 1,990 teachers completed all five waves of the BTLS (Graham et al., 2011).

Since the BTLS used stratified probability proportional to size sampling method in its first wave to ensure a nationally representative sample was selected from the teaching population (Burns et al., 2011), results from analysing such data and samples can be generalized to schools, districts, and states for policy and practitioner implications (Gay, Mills, & Airasian, 2009; Graham et al., 2011; Gray & Taie, 2015). A data file was created by the Institute of Education Statistics (IES) for each wave of the BTLS. The data files for all five waves were then combined to make a single restricted use file that was made available in 2015 by the IES through restricted-use licenses after most sampling variables were removed or altered to meet requirements of nondisclosure of the identities of BTLS participants. The variable name, description, and coding scheme of the survey items that asked the teachers about their mentoring experience were presented in Table 1.

## Data Analysis

Multinomial logistic regression was used to identify predictors of new teacher retention in the area of mentoring practices. Criterion variables were selected identifying teachers as staying in or moving from the same school into a second year of teaching, or leaving the teaching profession, as well as identifying current or former teachers in the fifth year of starting their teaching careers. All regressions were run using IBM SPSS Complex Samples (version 24) software that is capable of handling the stratified sampling method adopted by BTLS data. The Nagelkerke Pseudo  $R^2$  test was used to estimate variance in the criterion variable explained by predictor variables (Meyers, Gamst, & Guarino, 2017). In linear regression, the  $R^2$  values express the proportion of variation in the criterion variable that can be attributed to the variation among the predictor variables (Hinkle, Wiersma, & Jurs, 2003). Regressions using categorical criterion variables do not have a true  $R^2$ ; therefore an adjusted, or pseudo  $R^2$  value was used. The Nagelkerke Pseudo  $R^2$  is an adjusted Cox and Snell  $R^2$  and was selected because it adjusts to cover the full range of zero to one, while the Cox and Snell  $R^2$  maximum value is always less than one. Values closer to one are preferred as the value indicates the proportion of the variance explained by the model.

The Wald F statistic tested the significance of the contributions of each coefficient in the models and, because the population sample was very large, it was used to calculate a value of significance. Significance was set at  $p < .05$  and the corresponding confidence interval was 95 percent. Due to requirements set by the National Centre for Education Statistics to protect the identities of participants of the BTLS, all data were rounded to the hundredth place.

Teachers were identified as either stayers (those who remained in the same school as the previous year) or leavers (those who left the teaching profession after the first year of teaching). In separate regressions, teachers were identified as current teachers (those who remained in the teaching profession into the fifth year after beginning a career in teaching) or former teachers (those who left the teaching profession before starting the fifth year of beginning a career in teaching). A series of regressions were then conducted to identify specific predictor variables for new teacher retention from the perspective of mentoring practices to investigate if those variables predicted new teacher retention.

## Results

First of all, results from the multinomial logistic regression found that fourteen out of the twenty-three mentoring practices were able to predict new teachers staying in the initial teaching assignment a second year. Having a mentor assigned in the first year (W2MNTYN), whose main

job is to mentor (W2MNPRI) and who taught the same subject (W2MNSUB), frequency of supports in subject and grade level instruction (W2MFBSBJ), and ten others all predicted new teachers' retention in the same school for their second year of teaching (see Table 2).

**Table 2. Mentoring Practices Predicting New Teachers Staying in the Initial Teaching Assignment**

Variable	Predictor Variable Description	Sig.
W2MNTYN	Assigned a mentor in the first year	.01**
W2MNPRI	Mentor whose main job is to mentor	.00**
W2MNSUB	Mentor who taught same subject	.00**
W2MFBSBJ	Frequency of supports in subj & grade level instruction	.01**
W2MFDIS	Frequency of supports in classroom discipline	.00**
W2MFTEC	Frequency of supports in use of technology	.03*
W2MFSTA	Frequency of supports in student assessment and data	.03*
W2MFCUR	Frequency of supports in selecting & adapting curriculum	.00**
W2MIDIS	Support improved classroom management	.03*
W2MIINS	Support improved variety of instructional methods	.00**
W2MITEC	Support improved using instructional technology	.00**
W2MICUR	Support improved selecting and adapting curriculum	.01**
W2MIPAR	Support improved interacting with parents	.04*
W2MNIMP	Overall improvement due to mentor supports	.00**

*Note.* p levels have been rounded to 2 decimal places in compliance with license agreement; 95% Confidence Interval; Sig. = significance. \* =  $p < .05$ , \*\* =  $p < .01$ .

Secondly, results from the study found that nine out of the twenty-three mentoring practices predicted new teachers staying in the teaching profession into their fifth year of teaching. These include being assigned a mentor in the first year (W2MNTYN), having a mentor who taught in the same subject (W2MNSUB), frequency of observation by mentor (W2MNOBS), and six other mentoring practices (see Table 3).

**Table 3. Mentoring Practices Predicting New Teachers Staying in the Teaching Profession into their Fifth Year of Teaching**

Variable	Predictor Variable Description	Sig.
W2MNTYN	Assigned a mentor in the first year	.00**
W2MNSUB	Mentor who taught same subject	.00**
W2MNOBS	Frequency of observation by mentor	.00**
W2MFDIS	Frequency of supports in classroom discipline	.00**
W2MFTEC	Frequency of supports in use of technology	.04*
W2MFCUR	Frequency of supports in selecting & adapting curriculum	.00**
W2MFREF	Frequency of supports reflecting on teaching practice	.00**
W2MIDIS	Support improved classroom management	.00**
W2MIINS	Support improved variety of instructional methods	.05*

*Note.* p levels have been rounded to 2 decimal places in compliance with license agreement; 95% Confidence Interval; Sig. = significance.

\* =  $p < .05$ , \*\* =  $p < .01$

Thirdly, results from the study indicate that seven practices predicted new teacher retention into both the second year and their fifth year of teaching career (see Table 4). These seven practices are being assigned a mentor in the first year (W2MNTYN), having a mentor taught the same subject (W2MNSUB), frequency of supports in classroom discipline (W2MFDIS), frequency of supports in use of technology (W2MFTEC), frequency of supports in selecting & adapting curriculum (W2MFCUR), support improved classroom management (W2MIDIS), and support improved variety of instructional methods (W2MIINS).

Additionally, results from the study indicate that there are another seven mentoring practices that can only predict new teachers' retention into the second year but not into the fifth year (see Table

4). These seven practices are overall improvement due to mentor supports (W2MNIMP), having a mentor whose main job is to mentor (W2MNPRI), frequency of supports in subject and grade level instruction (W2MF SBJ), frequency of supports in student assessment and data (W2MFSTA), support improved using instructional technology (W2MITEC), support improved selecting and adapting curriculum (W2MICUR), and support improved interacting with parents (W2MIPAR).

Furthermore, there are two mentoring practices that cannot predict new teachers' retention into the second year but instead can predict retention into the fifth year (see Table 4). These two practices are frequency of supports reflecting on teaching practice (W2MFREF), frequency of observation by mentor (W2MNOBS).

**Table 4. Comparison of Mentoring Practices Predicting New Teachers Retention into the Second Year and Fifth Year of Teaching**

Variable	Predictor Variable Description	Predictor for 2 <sup>nd</sup> Year Retention	Predictor for 5 <sup>th</sup> Year Retention
W2MNTYN	Assigned a mentor in the first year	Yes	Yes
W2MNSUB	Mentor who taught same subject	Yes	Yes
W2MFDIS	Frequency of supports in classroom discipline	Yes	Yes
W2MFTEC	Frequency of supports in use of technology	Yes	Yes
W2MFCUR	Frequency of supports in selecting & adapting curriculum	Yes	Yes
W2MIDIS	Support improved classroom management	Yes	Yes
W2MIINS	Support improved variety of instructional methods	Yes	Yes
W2MNIMP	Overall improvement due to mentor supports	Yes	No
W2MNPRI	Mentor whose main job is to mentor	Yes	No
W2MF SBJ	Frequency of supports in subj & grade level instruction	Yes	No
W2MFSTA	Frequency of supports in student assessment and data	Yes	No
W2MITEC	Support improved using instructional technology	Yes	No
W2MICUR	Support improved selecting and adapting curriculum	Yes	No
W2MIPAR	Support improved interacting with parents	Yes	No
W2MFREF	Frequency of supports reflecting on teaching practice	No	Yes
W2MNOBS	Frequency of observation by mentor	No	Yes

Lastly, this study found that seven out of the twenty-three mentoring practices predicted neither new teachers' retention into the second year nor their fifth year of teaching. These include having a mentoring teaching the same grade level (W2MNGRA), frequency of working with mentoring (W2MNFRQ), and five others (see Table 5).

**Table 5. Mentoring Practices Predicting New Teachers Staying Neither in the Second Year Nor Into their Fifth Year of Teaching**

Variable	Predictor Variable Description
W2MNGRA	Has your mentor teacher ever instructed students in the same grade(s) as yours?
W2MNFRQ	How frequently did you work with your mentor teacher during the 2007-2008 school year?
<i>How frequently did your assigned master or mentor teacher work with you in the following areas?</i>	
W2MFINS	Using or incorporating a variety of instruction methods
W2MFPAR	Interacting with parents
<i>Reflecting upon the extent working with a mentor in several areas, how has your mentor improved your teaching in the area of:</i>	
W2MISBJ	Teaching your subject matter or grade
W2MISTA	Assessing students and interpreting assessment data
W2MIREF	Reflecting on your teaching practice

## Discussion

The current study found that majority of the twenty-three mentoring practices are able to predict new teachers' retention either into their second year or fifth year of teaching. Such result supports previous research studies that have identified a positive correlation between teacher induction support and new teacher retention (Henke, Chen, & Geis, 2000; Kelly, 2004; Parker, 2010; Resta et al., 2013; Ronfeldt & McQueen, 2017; Smith & Ingersoll, 2004) and confirms the need for mentors as an important component of an induction program to ease the transition from preparing for teaching to becoming an effective teacher. Providing a mentor who teaches the same subject matter predicted retention in the initial teaching assignment into the second year as well as into the fifth year. The result reaffirmed the importance of assigning a mentor who teaches the same subject matter as the new teacher (Parker, 2010; Ronfeldt & McQueen, 2017; Smith & Ingersoll, 2004), and informs principals and district level administrators the need for matching the mentor's experience to the new teacher's subject matter.

Additionally, results from the multinomial logistic regression also provide new information regarding the types and frequency of supports provided by mentors that predicted new teacher retention. The frequency of support in subject matter or grade level instruction, classroom management and discipline, using instructional technology, developing and interpreting student assessments, and selecting and adapting curriculum and instructional materials are all predictive of new teacher decisions to remain in the initial teaching assignment. Such results resonate with the previous study results or findings in the existing literature (Kelly, 2004; Parker, 2010; Resta et al., 2013; Smith & Ingersoll, 2004).

The study result that seven mentoring practices were identified as having no predictive power for new teachers' retention into the second year or their fifth year of teaching might help explain why some studies failed to identify a causal relationship between induction support and new teacher retention (Glazerman et al., 2010; Wechsler et al., 2012) as these researchers combined the many mentoring practices to create a composite variable in order to examine the overall predictive power of mentoring practices for new teacher retention.

Overall, results from this study corroborate previous research (Bubb, Early, & Totterdell, 2005; Cochran-Smith et al., 2010/2011; Feiman-Nemser, 2012; Ingersoll & Smith, 2003; Ingersoll & Strong, 2012; Kelly, 2004; Parker, 2010; Resta et al. 2013; Smith & Ingersoll, 2004) regarding the importance of mentor supports in retention decisions. The study also emphasizes the importance of selecting effective mentors, identifying the characteristics of mentors which lead to retention of new teachers, and identifies the frequency of mentor supports needed to increase retention rates of new teachers.

## Significance and Implications of the Study

Using a nationally representative data sample, the current study identified that specific mentoring practices can increase new teacher retention and benefit students, schools, and districts. The study also provides a menu of practices that increase the likelihood a teacher chooses to remain in the teaching profession and even the same school. This study adds to the body of knowledge and provides school leaders and policy makers with information needed to develop or modify mentoring strategies in order to increase the retention rate of new teachers, thus ultimately improving new teachers, school cultures, and instructional quality of schools and districts.

As indicated by the results of this study, mentoring must be specific and frequent, and improvement must be recognized; however, policy makers on the district and state level must provide the resources necessary to provide release time for new teachers to observe more experienced peers, be observed by mentors, participate in meaningful conversations regarding instructional improvement needs, and clearly understand expectations. Using the mentor supports identified to

be predictors of new teacher retention, induction plans can be better implemented in schools. Much like a menu system, support can be tailored to the needs of each teacher and school. Mentoring plans should consist of the practices identified as effective in this study (see Tables 2-4).

The mentoring practices implemented in each school should be matched to the changing needs of the new teacher. Initially, the supports address immediate needs for the first few weeks of school. As the mentor observes instruction, areas of concern are addressed. Frequency of supports are determined by identified need, and once specific skills are mastered, the frequency should decrease to a rate ensuring maintenance of the skill. As other concerns emerge, they can be addressed in an ongoing manner. The process of identifying concerns and addressing needs are all predicated upon regular observations and frequent (at least weekly) meetings and discussions.

To sum up, the results of this study provide valuable guidance in regards to effective mentoring practices that can be integrated to the development or modification of new teacher induction plans beneficial to new teachers, schools, and districts. Inclusion of the elements of mentor practices found to be predictors of new teacher retention may stem the flow of new teachers out of the profession and bring about instructional stability in schools and districts.

## Recommendations for Future Research

The current research study investigated only retention decisions of the second and fifth year of the study. Because W1SLOCP12 was selected as the stratum variable, further research using the same analysis plan can be conducted to investigate the differences among school locales to more precisely identify variables increasing new teacher retention matched to a specific school or district demographic information. Further research using year-to-year analysis may provide more specific information in addressing the needs of new teachers within a specific stratum. Also, using the current BTLS, research data is available to measure the impact of working conditions in a specific stratum on retention decisions.

To more precisely understand the impact of multiple years of mentoring support, research is needed to measure the differences, if any, of the retention decisions of teachers provided one, two, three, and four years of mentoring supports. Measuring the impact on student learning will inform school leaders and policymakers how to better allot monies to support mentoring new teachers. A survey similar to the BTLS would need to be developed to address the types of supports, frequency of supports, and other factors of implementation.

Since the ending of the first BTLS in 2012, a second BTLS began in 2012. Continued research with the more recent BTLS, once available for restricted-use licensure, will inform of changes in perceptions and retention/attrition rates. Further research also needs to be completed, on the school and district level, implementing some of the recommended practices, and then measuring effectiveness of induction plans incorporating the practices on increasing retention and student achievement.

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## About the authors

**Dr. Bonita Maready** currently works at DeSoto County Schools. Dr. Maready does research in Educational Leadership and Educational Management with a focus on teacher induction and mentoring.

**Dr. Qiang Cheng** is an associate professor of teacher education in Department of Teacher Education at the University of Mississippi.

**Dr. Dennis Bunch** is an associate professor of educational leadership in Department of Leadership and Counselor Education at the University of Mississippi.