

On the Outs: Learning Styles, Resistance to Change, and Teacher Retention

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Abstract

This study examined the relationship between learning style, level of resistance to change, and teacher retention in schools implementing an intensive schoolwide technology and media integration model. Researchers found that teachers with ST (sensing-thinking) and SF (sensing-feeling) learning style preferences, as described by the Myers-Briggs Type Inventory, had higher levels of resistance to change. Teachers with the ST learning style were also three times more likely to leave their schools, compared to teachers with other learning style preferences. Implications for policy and practice are discussed. In particular, teachers with the ST learning style preference may require additional support to enable them to adapt to changes within the dynamic environment of a school undergoing an intensive technology reform effort.

A topic of critical importance for administrators and teacher educators involves the shortage of qualified teachers in U.S. classrooms. The issue is particularly pressing in light of the need for schools to employ highly qualified teachers, as mandated by the No Child Left Behind Act of 2001 (NCLB; Dove, 2004). Embedded in this issue is the problem of teacher attrition. The most recent estimates indicate that 150,000 teachers leave the profession every year, and approximately 230,000 switch schools (Alliance, 2008).

Teachers are leaving the profession well before they reach retirement eligibility, and this attrition is the most significant contributor to teacher shortages (Dove, 2004; Ingersoll, 2001; Ingersoll & Smith, 2003). Furthermore, state requirements for professional licensure, as mandated by NCLB, are making it more difficult to fill vacant positions, intensifying an already problematic situation. The costs of attrition and subsequent teacher shortages to schools are substantial. Barnes, Crowe, and Shaefer (2007) have estimated that the cumulative outlay related to annual teacher attrition in the U.S. totals \$7.34 billion, when factoring in the money needed to recruit, hire, and retrain new and transferring teachers. Given the fiscal and human capital expended on teacher attrition, identifying factors that influence attrition is of the utmost concern, posing a challenge that has drawn the attention of researchers and policy makers alike.

Although attrition is problematic for the profession as a whole, several scholars have found that beginning teachers are the group most critically affected by attrition (Guarino, Santibanez, & Daley, 2006; Strunk & Robinson, 2006). Among the issues prompting individuals in this group to leave the profession are the desire for a higher paying job, dissatisfaction with their current position, lack of resources, and lack of support (Dove, 2004; Guarino et al., 2006; Ingersoll & Smith, 2003). In most states, teachers are paid salaries that, on average, rank below those for professions requiring similar levels of education. Furthermore, the shortage of actual capital is intensified by the lack of social capital attributed to the teaching profession (Dove, 2004).

However, in addition to issues of pay inequity and social standing, research has found that many beginning teachers who leave the profession are simply overwhelmed by the actualities of the job, especially those aspects related to classroom management and behavior (Ingersoll & Smith, 2003). Not surprisingly, inadequate teacher preparation for these actualities has also been tied to high attrition rates (Dove, 2004). As Anhorn (2008) suggested, teaching is a profession that “eats its young”; novice teachers are often underprepared and undersupported and are “eaten alive” by the demands of the classroom.

Beginning teachers make up the largest group of teachers contributing to the attrition rate, but the profession as a whole is riddled with this problem. As Guarino et al. (2006) noted, the attrition curve is U-shaped, with high attrition rates occurring for both beginning and veteran teachers. The reasons for leaving teaching that plague beginning teachers are not entirely alleviated with experience, so they remain a factor in attrition even for veteran teachers. Additionally, for teachers as a group, other concerns leading to attrition include personal issues such as pregnancy or health problems (Ingersoll, 2001). Furthermore, characteristics of individual schools are also correlated with attrition. Among these are the school’s location, size, socioeconomic draw, and public or private status (Guarino et al., 2006 Ingersoll, 2001).

Currently, a variety of issues, characteristics, and other factors have been investigated as possible reasons for teacher attrition. However, few studies have investigated more inherent characteristics of individual teachers. Personal characteristics may have a significant impact on how individuals fit in a particular environment and, thus, whether or not they ultimately stay in a challenging profession like K-12 education, especially within schools that are making intensive efforts to meet 21st-century learning requirements involving technology. In particular, given certain environmental characteristics, some individuals may be better suited to thriving in a setting while others might struggle in the same situation. Learning more about what individual characteristics may fuel teachers’ decisions to stay or leave could be critical in helping them adapt to changing school environments.

This study was conducted within the specific environmental context of schools undergoing an intensive schoolwide technology intervention. Such a project, requiring teachers to master new technology equipment, create new classroom activities, undergo intensive professional development, and collaborate in new ways with technology and media staff (who may themselves be new to the school if hired with project funds), presents its own set of stressors that may be perceived as positive or negative, depending on the views and dispositions of the individuals involved.

A possible characteristic that may predict individuals' fit within an environment is their learning style. In the field of education, the concept of learning styles has received a tremendous amount of attention over the past half century. Although recent research in this area has underscored the limitations of available learning style measures (Horton & Oakland, 1997; Price, 2004), the concept that individuals differ in terms of their preferred modes of learning continues to have a broad intuitive appeal, and researchers continue to test and explore applications of learning style theory within empirical contexts. Taking into account the need for more empirical information in this area, this study represents an exploration of the relationship between teachers' learning styles and their level of resistance to change within a group of schools implementing a large-scale technology intervention, as well as the relationship between those variables and teacher attrition.

The psychologist Carl Jung (1921) theorized about the existence of personality types in his book *Psychological Types*. Jung classified ways in which people perceive the world around them and make choices based on preferences emanating from personality type. The Myers-Briggs Type Indicator (MBTI; Briggs & Myers, 1998), an extension of Jungian type theory, is one of the best-known instruments developed to identify personality type. This instrument categorizes personality types into 16 type preferences using the scales of extraversion (E) – introversion (I); sensing (S) – intuition (N); thinking (T) – feeling (F); and judgment (J) – perception (P).

These four preference scales describe focus of attention, acquisition of information, decision-making, and orientation toward the outer world. Sixteen different four-letter combinations result from these categories, the 16 type preferences found in the population. Controversy exists over whether the MBTI actually measures an individual's "type" which does not differ over time, or "traits" which can be modified through training (Furnham, 1996). This study is not aimed at adding evidence in support of either argument, but rather using knowledge of the MBTI type preferences to identify the preferred learning style of an individual.

Researchers in the field of learning styles have theorized that personality-type preference can have an effect on a learner's assimilation of new knowledge (Kiersey & Bates, 1984). Personality, as measured by the MBTI, can be used as a predictor of instructional preference (Lennon & Melear, 1994). Some researchers (Cooper & Miller, 1991; Kalsbeek, 1989) have focused on learning preferences associated with the MBTI's Extraversion-Introversion (EI) continuum. However, learning preferences may also be designated by the function combinations represented by the two middle letters of the four-letter type preferences, the Sensing-Intuition (SN) and the Thinking-Feeling (TF) scales. These function combinations are ST, SF, NF, and NT (Lawrence, 1984).

In a previous study with middle school teachers from 14 counties in eastern North Carolina, the largest number of teachers (36%) fell into the ST function combination (Grable & Park, 2002). Teachers with ST type preference have a learning preference for demonstrations, laboratories, and using a plan. SF types prefer more student-centered activities, audiovisuals, and personal instruction. Teachers with NF preference enjoy feedback and enthusiasm, personal instruction, and creativity and spontaneity. NT types

prefer lectures, reading, and self-instruction (Lawrence, 1984). These four categorizations are based on the learner's perception of information (the SN continuum), preferred organization of information, method of processing and making decisions, and coming to understanding (Felder & Silverman, 1984). Teachers learning about new technologies for instruction and trying to use them for the first time in the classroom may adapt differently, depending on their learning-type preference (Grable & Park, 2002).

Just as learning preferences may play into teachers' decisions to stay or remain in a dynamic school environment, their level of resistance to change may have an effect on this decision, particularly within schools undergoing reform initiatives. Individuals' resistance to change is a concept most frequently addressed by scholars operating within the Industrial/Organizational Psychology context (Bovey & Hede, 2001; Dent & Goldberg, 1999; Judge, Thoreson, Pucik, & Welbourne, 1999), but which may have important applications within educational settings.

One search linking "personality type" and "resistance to change" generated links to over 15 managerial training programs to help identify employees who are resistant to change within the corporate context. However, less information exists on the relationship of these factors within the school environment. An individual teacher's adaptability and willingness to respond positively to the administration's introduction of a new intervention may have important consequences for professional development, classroom practice, introduction of new technologies, and—ultimately—teacher retention.

At this time, the link between personality type and teachers' resistance to change remains elusive. As prior research has suggested, both of these dispositions have situational aspects, but there may also be an underlying dimension of identity that connects one disposition to the other, causing some personality types to be more receptive to change than others (Barkdoll, 2001; Vakola, Tsaousis, & Nikolaou, 2004).

Some evidence suggests that teachers' personalities and resistance to change can present barriers to the adoption of technology interventions (Fabry & Higgs, 1997; Lehman, 1994). Still, the relationship between these two factors for teachers remains relatively unexplored and warrants investigation. Furthermore, in the investigation of a link between learning style and resistance to change, it is important to examine the relationship between those factors individually and in combination with the most salient variable, teacher attrition.

Adopting new instructional technologies may involve profound changes for teachers, in terms of the way that they operate in the classroom, as well as the way they understand their role as professionals. Finding out more about the relationship between teachers' learning styles and level of resistance to change may help teacher education schools and school leaders provide more appropriate assistance and support, enabling schools to retain teachers who may have a harder time accommodating the changes involved in a dynamic school context such as the one under investigation here.

The Study

The evaluation of the North Carolina IMPACT project by the William and Ida Friday Institute for Educational Innovation at North Carolina State University focused, in part, on assessing teacher characteristics related to technology adoption before and after a 3-year infusion of technology funding at 11 elementary and middle schools located in low-socioeconomic-status districts (No Child Left Behind Act of 2001). The schools received significant funding in order to implement a technology integration model meant to lead

to adequate yearly progress by students. Developed by the NC Department of Public Instruction (NC DPI), the IMPACT model (see <http://www.ncwiseowl.org/impact.htm>) has a goal of improved student achievement through the development of social factors enhancing staff communications and development (Brandyberry, 2003; Cooper, 1998).

The IMPACT model also prescribes a full-time media coordinator and technology facilitator at each school in promotion of school leadership (Michael, 1998). Other tenets of the model include a technology-rich and a resource-rich teaching and learning environment, collaboration among teachers and media and technology personnel, strong administrative leadership and support, and an adequate budget (Flanagan & Jacobsen, 2003).

For teachers, one of the most notable features of the IMPACT model involved substantial staff development that focused on various technologies, as well as more generalized collaborative and integrative training (e.g., INTEL Teach Program, <http://www.intel.com/education/teach/index.htm>). Initially, these offerings were provided as formal group workshops, but by Year 3, a one-on-one, "just in time" model of professional development became the norm. Additionally, the model offered new opportunities for collaboration, new personnel, and policy changes.

Two full-time staff members, the technology facilitator and media coordinator, coordinated and carried out collaborative planning sessions with teachers to help them develop lesson plans and integrate technology into their classroom practice. A full-time technician was also available at each school to help teachers troubleshoot problems with equipment. Further, the computer lab and media centers at each school were made available on a "flexible" basis—that is, teachers were no longer scheduled to go to the lab or media center at regular intervals, but were asked to integrate access to these centers as an integral part of their curriculum.

Prior analyses indicated that classroom teachers at IMPACT schools were retained at higher rates than teachers at comparison sites (Osborne, Overbay, Grable, Vasu, & Seaton, 2008). However, a sizeable number of teachers at the treatment schools left—and the researchers deemed it important to investigate the characteristics of these individuals. As a result, the overarching guiding question for this study was, "What is the relationship between learning preference and teachers' resistance to change within the context of a school undergoing a large-scale complex technology intervention?" This problem was operationalized through three subquestions:

1. What are IMPACT teachers' learning style preferences?
2. Do teachers with different learning styles differ in terms of their resistance to change, as measured by the way they perform on a self-report instrument measuring perceptions of change?
3. Do teachers with different learning styles differ in terms of the rates at which they remain at schools undergoing systemic change?

Population

The population involved in this study included 237 elementary and middle school teachers from 11 Title-I (low-income) schools in North Carolina. These teachers represented a range of ages and levels of experience, with proportionally more teachers in these schools reporting that they were over 50 and having more than 15 years of experience: 19% were 20-29, 23% were 30-39, 22% were 40-49, and 26% were 50-59.

Similarly, 17% had 0-3 years of experience, 17% had 4-7, 10% had 8-10, 14% had 11-15, and an overwhelming 38% had more than 15 years of experience in the classroom.

Measures

A number of instruments were administered to teachers in order to assess instructional activities, attitudes, and dispositions. These assessments included the Myers-Briggs Type Indicator (MBTI) and Resistance to Change (RTC) measure.

MBTI. To measure learning styles, teachers in the sample responded to the Myers-Briggs Type Indicator Form M Self-Scorable (Briggs & Myers, 1998) during Year 1 of the IMPACT Project (2003-2004). Four categories for learning preferences (Lawrence, 1984) were calculated using this instrument: ST, SF, NF, and NT (Table 1).

Table 1
Learning Style Preferences

	Thinking (T)	Feeling (F)
Sensing (S)	N ₁	N ₃
Intuition (N)	N ₂	N ₄

Resistance to Change. Oreg's (2003) Resistance to Change Scale was developed to address an individual's dispositional inclination to resist changes. This instrument was developed and validated across seven separate studies and addresses four major factors: routine seeking, emotional reaction to change, short-term thinking, and cognitive rigidity. The version of the survey used in this study has 18 items and uses a 6-point Likert scale, ranging from 1 (*strongly disagree*) to 6 (*strongly agree*).

Analyses

To address the first research question, descriptive statistics and chi-square analyses were conducted to examine the distribution of different MBTI learning types (ST, SF, NF, or NT) within the study sample and to determine whether particular variables, such as sex and years of experience, were differentially associated with these four learning types. To address the relationship between the four learning styles and the four RTC constructs, a multivariate analysis of variance (MANOVA) was conducted, and posthoc univariate results were examined. To investigate the relationship between learning styles, teacher demographics, and teacher retention, bivariate logistic regression analyses were conducted, and interactions between variables were tested for their predictive relationship with the binary outcome (retention).

Findings

IMPACT Teachers' Learning Style Preferences

A total of 237 teachers took the MBTI in fall 2003. The distribution of teachers across the four learning styles measured by the MBTI are shown in Table 2. Fewer teachers were categorized as ST and NT, while approximately the same proportions of teachers were categorized as SF and NF.

Table 2
MBTI Learning Style Distribution

	Thinking (T)	Feeling (F)
Sensing (S)	15.6%	38.8%
Intuition (N)	7.68%	38.0%

Chi-square analyses were conducted to examine the association between learning styles and other characteristics of this population, including sex and years of experience. The proportion of males to females in our sample (11.1% vs. 88.9%, respectively) follows a typical distribution in U.S. schools. Our analyses indicated that the relationship between sex and learning style was significantly different than expected, $\chi^2(3, N = 237) = 19.89, p < .0001, \eta^2 = .29$. Further examination revealed that the most substantial difference was for the ST grouping; proportionally more males than females (42.3% vs. 12.4%) fell into this category, $\chi^2(1, N = 237) = 16.83, p < .0001, \eta^2 = .27$. Table 3 shows the breakdown of learning styles by sex. Learning styles were also examined by years of experience and age; however, the distribution of learning styles did not differ significantly across these categories.

Table 3
MBTI Learning Style Preference and Sex

Sex	ST	NT	SF	NF	Total (% of whole group)
Male	42.3%	11.5%	19.2%	26.9%	11.1%
Female	12.4%	6.2%	41.6%	39.7%	88.9%
Total %	15.7%	6.8%	39.1%	38.8%	100%

Learning Styles versus Resistance to Change

An initial MANOVA was performed on the four RTC constructs, with learning style as the between-subjects factor. (Oreg's version of this instrument uses a 6-point likert scale, but in our study we revised it to a 5-point likert scale to reflect the scaling of other

instruments used in the overarching evaluation of the technology initiative.) The results of this analysis revealed significant differences on each construct across the four different MBTI learning style groupings $mF(3,206) = 4.0, p < .001, \eta^2 = .07$. This multivariate effect was explored through univariate posthoc comparisons (Table 4).

Table 4
RTC Subscale Means Across MBTI Learning Styles

RTC Subscale	ST	NT	SF	NF	$F(df3, 206)$	Partial η^2
Construct rigidity	3.16 _a	2.73	2.97 _b	2.72 _{ab}	6.15***	0.08
Short-term thinking	2.43	1.93 _a	2.50 _{ab}	2.25 _b	4.54**	0.06
Routing seeking	2.62 _{ab}	2.12 _{bc}	2.59 _{cd}	2.22 _{ad}	9.76***	0.12
Emotional reaction	2.82 _a	2.04 _{abc}	3.03 _{bd}	2.71 _{cd}	6.52***	0.09

Note: Means within rows were examined through Tukey posthoc comparisons; within each row, subscripts including the same letters indicate scores that differed significantly ($p < .05$).

** $p < .01$, *** $p > .001$

Overall, teachers within the ST and SF groupings tended to score higher on all four of the RTC constructs, indicating that they have a higher resistance to change, as measured by these factors. In particular, teachers in these two groups scored especially high on “construct rigidity” and “emotional reaction.” The ST teachers’ mean score on construct rigidity (3.16) was higher than any other group’s score on any other construct (Figure 1).

Learning Styles, Resistance to Change, and Retention

A total of 51 individuals, or 21.5% of the individuals surveyed, left these schools by the end of Year 2, a figure that is in line with state averages for teacher attrition at the elementary and middle school level (NC DPI, 2007). Initial chi-square analyses showed a significant difference across the four learning styles in the proportion of teachers leaving after the first 2 years of the intervention, $X^2(3, N = 237) = 10.57, p < .05, \eta^2 = .21$ (Figure 2).

These results indicate that the percentage of teachers within each learning style who left the treatment schools was significantly different than expected. Of all teachers who left, 37.3% were categorized as NF, but this was not surprising, since this figure was in line with the original proportion of teachers in the sample who had this learning style (38%). Further exploration revealed that the most substantial difference was between the ST category and the rest of the group. Proportionally more of these individuals left than expected, $X^2(1, N = 237) = 10.57, p < .05, \eta^2 = .21$. Strikingly, a total of 40.5% of those who

had been categorized as ST left after 2 years, representing 29.4% of all the individuals who left, even though only 15.6% of the whole group was originally categorized as ST.

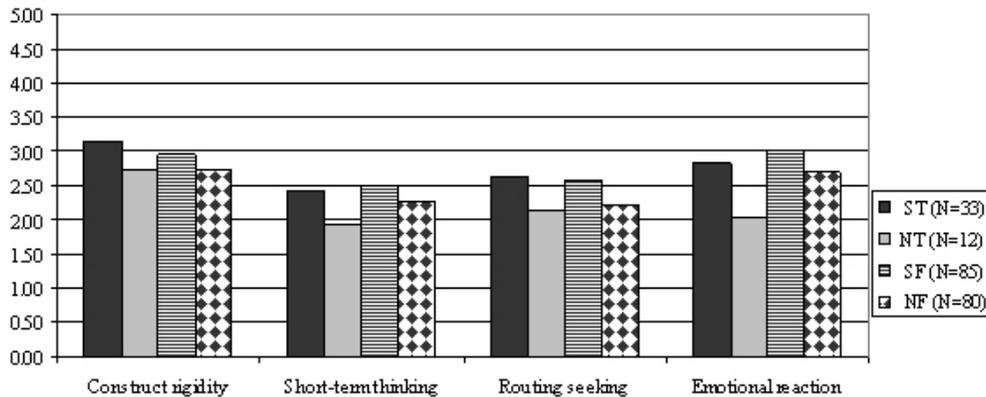


Figure 1. RTC subscale means across MTBI learning styles.

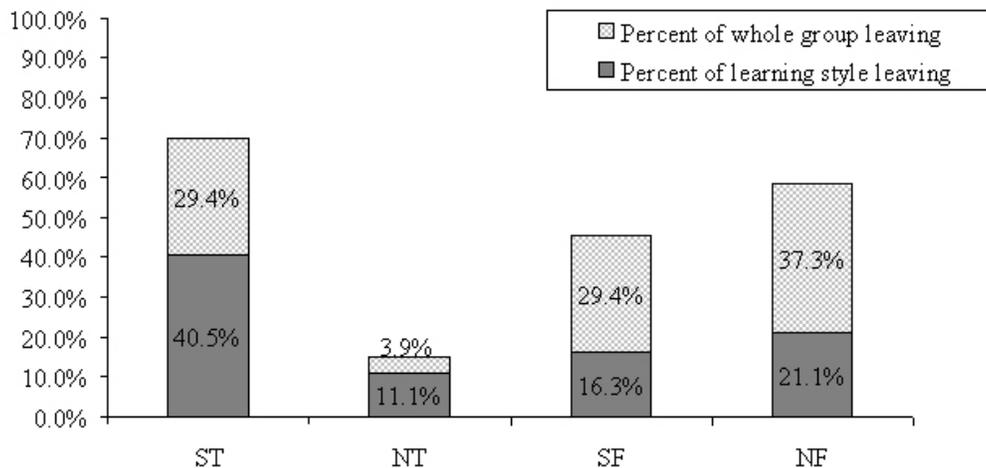


Figure 2. Attrition across learning style groupings.

To determine whether individuals who left had a stronger resistance to change, a MANOVA was conducted to examine scores on the four RTC constructs for those who left versus those who stayed. This analysis revealed no significant differences on any of the RTC constructs for people who left versus those who stayed after Year 2.

To probe these findings further, we conducted a set of logistic regression analyses using teacher retention through Year 2 as our binary outcome. This analysis allowed us to control more precisely for demographic variables by covarying sex, age, and years of experience, while accounting for learning style as a predictor of attrition. (Because the previous analysis of variance indicated that teachers who left did not score differently than those who stayed on the RTC constructs, scores on these factors were not included

as predictors in this analysis.) Interactions between learning style, RTC constructs, age, and sex were also tested, but were not significant and were omitted to create a more parsimonious model, given the available degrees of freedom.

The initial logistic regression model was significant, $X^2(4, N = 226) = 16.95, p < .001$. In this model, a teacher leaving the school was coded as (outcome = 1). A nonsignificant trend was present for years of experience ($p = .07$). As expected, more experienced teachers were less likely to leave than were newer teachers. However, results indicated that of these variables, only learning style—specifically, being classified as ST or not—was a significant predictor of teacher attrition ($p < .01$). Results indicate that ST learners were more than three times as likely to leave as other types of learners, after accounting for years of experience, age, and sex.

In the second model, the interaction between experience and the ST learning style was included. When this variable was entered into the model, learning style was no longer a significant predictor of attrition, though there was a near-significant trend for this variable ($p = .10$) and for experience ($p = .10$). The significant interaction between learning style and experience indicates that, even for ST teachers, individuals who were more experienced were less likely to leave (Odds Ratio = .68, $p < .03$). Table 5 provides an overview of the results of logistic regression analyses predicting attrition through Year 2 of the intervention.

Discussion

In this study, a large percentage of teachers with the ST learning style preference left the treatment schools, and the ST and SF teachers were the most resistant to change. Teachers with an ST learning style are characterized by their preference for learning through the use of demonstrations and by using a plan. In our study, these teachers earned higher scores than any other group on “construct rigidity” and “emotional reaction,” suggesting that they may be less adaptable to changing environments than are other types of learners and may process and react to environmental change more negatively.

Our findings indicated that teachers who were classified as having an ST learning style were more than three times as likely to leave the intervention schools as were teachers with one of the other learning profiles. Furthermore, having this learning style preference was a better predictor of teacher retention than sex, age, or years of experience. At the same time, the interaction between experience and learning style indicated that more experienced teachers, even those with an ST profile, were less likely to leave. More experience in the classroom may help teachers withstand additional stressors that may contribute to attrition and may help ST learners overcome lack of support for their learning style.

Why, exactly, did having this learning style appear to be such a strong predictor of attrition? Although it is impossible to determine the precise reason for this relationship without more qualitative information, it seems likely that individuals with this learning profile met with particular challenges in the dynamic context of these schools, where new expectations for integrating technology into the curriculum were strongly in play. For example, one of the attributes of an ST learning style is a preference for a learning plan and clear learning objectives. However, schools in this study literally doused teachers with a huge battery of professional development requirements and offerings and, by the end of the project, had moved to a “just in time” model of professional development, where flexibility on the part of the learner is key.

Table 5
Teacher Attrition, Demographics, and Learning Styles

						95.0% C.I. for Exp(B)	
Predictors	Beta	S.E.	Wald statistic	Sig.	Exp(B) [c]	Lower	Upper
Step 1[a]							
Constant	-.688	.614	1.254	.263	.503		
Sex (F = 1, M = 0)	-.277	.542	.262	.609	.758	.262	2.194
Age	.135	.225	.357	.550	1.144	.736	1.779
YrsExp	-.315	.173	3.336	.068	.729	.520	1.023
ST	1.112	.420	7.017	.008	3.039	1.335	6.918
Step 2[b]							
Constant	-.997	.685	2.118	.146	.369		
Sex (F = 1, M = 0)	-.029	.606	.002	.962	.971	.296	3.183
Age	.151	.233	.420	.517	1.163	.736	1.838
YrsExp	-.297	.179	2.738	.098	.743	.523	1.056
ST	.819	.497	2.713	.100	2.268	.856	6.011
ST * YrsExp	-.360	.170	4.497	.034	.698	.500	.973
[a] Model Statistics for Step A: -2 Log Likelihood = 211.42, $X^2(4, N = 226) = 16.95, p < .001$.							
[b] Model Statistics for Step B: -2 Log Likelihood = 206.29, $X^2(5, N = 226) = 20.09, p < .001$.							
[c] Exp(B) = Odds ratio.							

These teachers may have had additional difficulty in flexing with the element of unpredictability that using instructional technologies can introduce into the classroom, as well as the lack of fit between their learning style and the type of professional development opportunities provided. They may have needed more structure in the implementation of technology for specific lessons and may have needed more opportunities to observe others implementing lessons in the classroom.

Within the specific context of this study, having an ST or NT learning style may have presented more difficulties for teachers, given the fact that teachers involved in this study were working in environments where a large-scale technology intervention was underway. The specific technology integration model being implemented was unique to the intervention group. These kinds of changes are hardly uncommon (if on a smaller scale) in many U.S. schools, where the push to incorporate technology use into both the curriculum and student and teacher performance standards is driving a host of changes in the way schools operate.

The overall percentage of teachers leaving the study schools (21.5%) was in line with attrition rates at schools across the state (NC DPI, 2006), and the ST teachers may have been more likely to leave any teaching position. However, the type of change occurring at the intervention schools, involving mastery of unfamiliar technologies as well as new ways of working with media and technology staff, may have been especially difficult for teachers with an ST learning style as a preference in processing information and decision-making.

Little is known about the relationship between learning style and teacher retention, but results from this investigation appear to offer a promising line of inquiry. Based on the results, future studies might use a larger sample to determine (a) how representative the distribution of learning types in our study is for teachers in general and (b) whether schools with different distributions of learning types experience different patterns in teacher retention.

Findings also suggest the need to make further investigation into the differentiation of materials, models of teacher education, and professional development that might help different types of learners adjust to the teaching profession and to the kinds of broad-based changes that frequently occur within educational contexts, particularly as schools attempt to make changes to meet 21st century learning standards with regard to technology.

The results suggest that newer teachers may find an approach that differentiates based on learning style particularly critical. In this study, the implementation of a new media and technology model meant that teachers were faced with a number of policy and procedural changes that may have posed a challenge for beginning and experienced educators alike. In a case like this, knowledge of a teacher's MBTI type might be helpful in designing more effective instructional technology staff development for them and providing them with more support and resources as they move through the stages of change in their adoption of new technologies and teaching strategies.

Change is a fact of life, especially in the K-12 context. As teachers are asked to master and integrate emerging technologies into their classrooms, the capacity to adapt to change is critical. The more that is known about helping teachers adjust to change in their working lives, the more successful others, such as teacher educators, may be in giving them the assistance they need in continuing on in this challenging profession and developing the requisite new skills to prepare students for a world where change is, perhaps, the only constant.

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