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Diagnosing Causes of Teacher Retention, Mobility and Turnover and Matching to Interventions:

Guidelines for TIF Grantees

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Idea in Brief

The problem	The solution	The steps
Educational organizations implement retention strategies without determining the causes of turnover, leading to ineffective retention strategies.	Determine causes of teacher retention, mobility, and turnover and match them to actionable interventions.	Develop a turnover framework, collect data accordingly, and match them to appropriate retention interventions.

Introduction

This brief discusses one of the most critical issues in managing teacher retention, mobility, and turnover, that is, determining the causes (also referred to as predictors, determinants, or antecedents)[1] of teacher turnover and mapping them specific turnover reduction strategies. Determining the right causes of teacher mobility and turnover is critical to identifying and applying appropriate solutions or interventions for mitigating teacher turnover. Conversely, misdiagnosing the reasons teachers leave likely leads to inappropriate or ill-suited interventions.

This brief builds on themes addressed in the TIF brief *Identifying, Monitoring and Benchmarking Teacher Retention and Turnover: Guidelines for TIF grantees*.[2] It discusses strategies for diagnosing the causes of teacher attrition and movement, and linking causes to possible interventions. Figure 1 depicts this strategic accountability approach.

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1   These terms refer to variables that are believed to produce turnover. These variables are distinct from correlates, which refer to variables to which turnover is related (for example, age).

2   The first brief is available at http://www.tifcommunity.org/sites/default/files/resources/tif_brief_monitoring_retenion_turnover_final.pdf

Figure 1

Strategic approach to managing teacher retention, mobility, and turnover
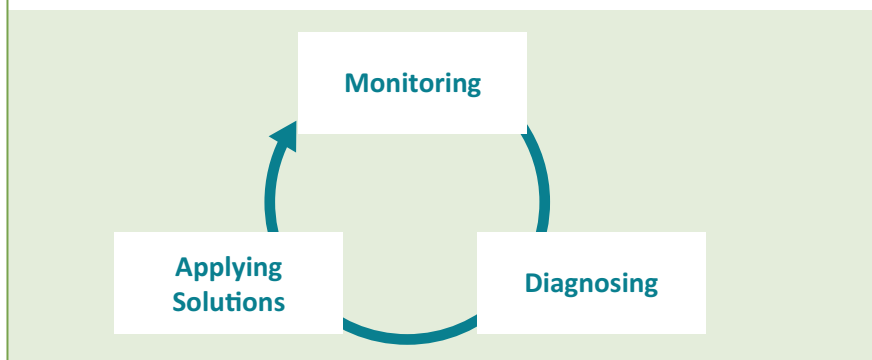
To accurately diagnose causes of teacher retention, mobility, and turnover, grantees need to take the following steps:

1) *Develop a framework that accounts for a wide variety of factors that may influence teacher turnover decisions.*

2) *Structure the data collection process around this framework and collect the appropriate data.*

3) *Analyze teacher retention, mobility, and turnover data.*

The next section discusses the important antecedents or causes of turnover. Grantees can use the causes discussed below as a starting point for collecting information about causes of turnover in their districts.

Determining Causes of Teacher Retention, Mobility, and Turnover
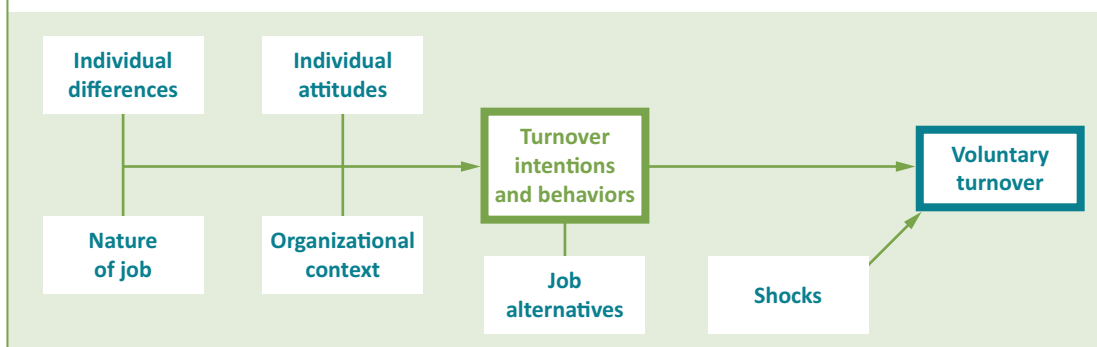
A Teacher Turnover Framework

The turnover framework shown in Figure 2 summarizes multiple employee turnover theories and prominent factors that predict or cause voluntary turnover (e.g. Holtom, Mitchell, Lee, & Eberley, 2008; Griffeth & Hom, 2001). The framework incorporates attitudinal, behavioral, and contextual factors.

Figure 2

Teacher turnover model

The model in Figure 2 shows the relationship between many factors that may result in a teachers' turnover. The turnover decision-making process can be conceptualized as a process influenced by individual-level differences, the nature of the job, attitudinal factors, and organizational factors including the social environment. In combination, these factors lead to thoughts of quitting and actual job search behaviors, which eventually may lead to voluntary turnover.

Table 1 list summarizes the factors and potential causes of turnover that have been identified through research. Individual attitudes such as job satisfaction, organizational commitment, and engagement are influence by multiple determinants.

Table 1

Turnover factors and determinants

Individual differences	Organizational context	Individual attitudes

■ demographics
■ ability
	■ organizational demographics (size, location)
	■ organizational climate
	■ leadership
	■ interpersonal relations
	■ socialization tactics (e.g., induction programs)
		■ job satisfaction Influenced by determinants such as
		  ■ leader member relations
		  ■ compensation
		  ■ job complexity
		  ■ role stress
		  ■ autonomy
		■ organizational commitment Influenced by determinants such as
		  ■ job security
		  ■ job investments
		  ■ pay fairness (procedural justice)
		  ■ conditions of job entry
		■ engagement (defined by meaningfulness, safety, and availability), Influenced by determinants such as
		  ■ job challenge
		  ■ autonomy
		  ■ feedback
		  ■ opportunities for development
		  ■ social support
		  ■ transformational leadership
		  ■ leader-member exchange
		  ■ organizational justice
		  ■ role overload
		  ■ work conflict
		  ■ family-work conflict
		  ■ resource inadequacies
		  ■ time urgency
		  ■ off-work recovery
		  ■ personal resources
		  ■ job involvement
		  ■ job strain
		  ■ exhaustion (burnout)

Sources: Crawford, Rich, Buckman, & Bergeron (2014); Griffeth & Hom, 2001; Holtom et al., (2008).

It is also important to recognize that actual turnover may be prompted by a specific, jarring event that triggers a quit decision (Lee & Mitchell, 1994). Such events could be personal (illness) or organizational (negative interactions with a new principal). These shocks may initiate a quit decision regardless of the other factors and in spite of job alternatives. So even if teachers have relatively high levels of attitudinal factors, such as job satisfaction or organizational commitment, turnover may follow these specific events.[3] Thus no set of antecedents can completely and accurately predict all turnover, and no set of strategies can completely eliminate it. (For a full description of these factors and corresponding determinants, see Holtom et al., 2008).

Whether a confluence of circumstances or a direct shock result in voluntary turnover, it is important to consider the level at which the turnover is occurring. The outcome of teacher turnover can be at the school, district/organizational, or profession level. That is, teacher turnover can result in teachers moving from one school to another school within the same district (mover in), from one school district to another (mover out), from a teacher role to a support role or administrative role (mover up), or out of the teaching from the public school system (exiter or leaver). It is important to distinguish between the different types turnover as they may be associated with various causes.

The model depicted in Figure 2 provides a comprehensive list of elements to consider based on research on employee turnover. However, research on teacher turnover tends to focus on several main topic areas including characteristics of individuals, external characteristics of schools/school districts, and working conditions and compensation (e.g., Borman & Dowling, 2008; Guarino, Santibanez, & Daley, 2006). More specifically, literature on teacher turnover from an organizational perspective examines the relationship between teacher retention and organizational characteristics of schools (e.g., Ingersoll, 2002, 2003; Ingersoll & May, 2010; Ingersoll & Perda, 2010). In figure 2, these organizational conditions are theoretically similar to elements of the nature of the job, organizational factors, or indicators of individual attitudes. A primary benefit of this perspective is that it focuses on school conditions that can be mitigated by polices, that is, "policy-amendable" aspects of schools (Rosenholtz, 1989). This perspective focuses on organizational level issues that may be reconciled by policy and leadership practices as opposed to "inexorable demographic trends" (Ingersoll & Perda, 2010, p.6). These indicators of organizational conditions can assist in signaling areas that are targetable from a strategic management perspective.

Once the potential causes of turnover are understood, districts can determine how to collect information on the most important causes affecting them. The following section provides some ideas for collecting this information.

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3   It is also important to realize that there is also a time element to many of these factors, that is, they can vary across time spans, but it difficult to track unless they are consistently monitored. Nonetheless, this model depicts the factors that may influence one's turnover decisions and simplified version of one's turnover decision-making process.

Data Collection Procedures and Tools That Can Capture a Wide Range of Determinants

Grantees can collect data on causes and predictors of teacher retention, mobility, and turnover using a variety of methods. One of the most common practices is to use surveys to diagnose the causes of turnover and predict it. Interviews or focus groups can also be used to provide further detail on reasons for teachers staying, moving, or leaving.

Teacher Surveys

A primary advantage of surveys is that questions can be included to address many of the constructs discussed above. However, as surveys provide a limited amount of information, it would beneficial to supplement survey data with interview or focus group data to provide further insights on major issues.

Working condition surveys are a good source items that measure perceptions of domains such as facilities and resources, distributed leadership, school leadership, and professional development. Prominent statewide surveys of teaching working conditions include Mississippi (see Berry, Fuller, & Williams, 2008) and North Carolina (see Hirsch & Emerick, 2007)). The Schools and Staffing Survey, administered in the past by the Institute of Education Sciences (IES), is another source for survey items pertaining to general school working conditions. Exhibit 1 provides example teacher survey items about teachers' attitudes toward the school.

Exhibit 1

Selected Illinois 5Essentials Survey Items

Indicate the extent that you agree or disagree:
- The principal has confidence in the expertise of teachers.
- I trust the principal at his or her word.
- The principal takes a personal interest in the professional development of teachers.
- The principal looks out for the personal welfare of the faculty members.
- The principal at this school is an effective manager who makes the school run smoothly.
- I usually look forward to each working day at this school.
- I wouldn't want to work in any other school.
- I feel loyal to this school.

My professional development experience this year have:
- Been sustained and coherently focused, rather than short-term and unrelated.
- Included enough time to think carefully about, try, and evaluate new ideas.
- Been closely connected to my school's improvement plan.
- Included opportunities to work productively with colleagues in my school.

Items about how teachers perceive the job itself can be adapted from general employee literature and research. Griffeth and Hom (2001) provided items from the job rating form and the job diagnostic survey, which, for example, ask about meaningfulness, responsibility, and satisfaction with job security; compensation; coworkers; and supervisors. Yao, Lee, Mitchell, Burton, and Sablynski (2004) provided example items for job embeddedness,

continuance commitment (from Allen & Meyer, 1990), job investment (from Rusbult & Farell, 1983), and person-organization fit (from Saks & Ashforth, 1997). For engagement, Fletcher and Robinson (2014) provided an overview and information about several different engagement surveys and include specific engagement survey items that could be adapted for teachers.

Additional teacher retention survey items are included in Appendix A. Moreover, practical logistical considerations for implementing surveys are discussed in Appendix B.

In addition to administering surveys, grantees can conduct interviews and/or focus groups to obtain more detailed information or uncover dynamics that are difficult to obtain via a survey.

Interviews and Focus Groups

Interviews and/or focus groups can provide further detail on reasons for teachers staying, moving, or leaving. Interviews can be conducted in a structured (strict set of questions) or unstructured manner, which allows for more flexibility and probing. Interview data can provide richer and more indepth information about the factors above and allows teacher to explicate exactly they find attractive and unattractive in their current working conditions.

Interviews are commonly conducted during an employees exit—termed an exit interview. Exit interviews are widely regarded as a tool to help determine why an employee quit, but simultaneously it is notorious for being inaccurate and/or unreliable. The implication of this dilemma is if a grantee decides to use exit interviews, it must take steps to address the numerous shortcomings (see Griffeth & Hom, 2001 for recommendations).[4] Heneman and Judge (2003) provided examples of exit interview questions used in the business sector that could be adapted for teachers.

Focus groups are another productive tool for determining the causes of turnover. In this process, a group of teachers can be asked why their colleagues may be leaving the organization, which focuses on why others leave the organization. Since teachers' perspective on their working conditions is subjective, including more participants' judgments is better than relying on relatively few interviews.

Once data are collected, the next task for grantees is to combine the data in a meaningful way so that potential causes of teacher mobility and turnover can be identified and targeted with appropriate interventions. The next section discusses multiple approaches for analyzing the data ranging from using simple descriptive statistics to multi-level modeling.

Analyzing Teacher Retention, Mobility, and Turnover Data

The type of data collection processes a grantee or organization uses will in part determine the analysis. For example, school climate survey data can be analyzed using quantitative methods, including descriptive and inferential statistics, whereas interview and/or focus group data will be analyzed using qualitative methods. If multiple methods were used to collect data, grantees may have to consider how to combine the data and analysis using mixed methods. Ideally, the data sources would consistently indicate similar causes of mobility and turnover.

For survey data, the first step is to examine the simple descriptive statistics (averages, etc.) of survey items by teacher and school-level demographics and characteristics. (A list of recommended teacher and school characteristics and factors to consider was presented in Appendix A of *Identifying, Monitoring and Benchmarking Teacher Retention and Turnover: Guidelines for TIF Grantees*.) The survey items could

also be examined by different mobility outcomes (i.e., movers in, movers out, leavers, movers up) and by different types of turnover (i.e., functional, dysfunctional, avoidable, unavoidable). Grantees can assess group differences between the means for different groups. In this manner, grantees can identify the leading causes of turnover for specific types of turnover, such as dysfunctional, avoidable teacher turnover. An example analysis is discussed below.

Grantees could administer a survey to teachers in the spring semester that includes an item about potential causes of turnover as well as turnover intentions. Using the survey data, grantees could calculate the averages of influential factors by teacher effectiveness level (e.g., effective, highly effective) for all respondents, respondents with turnover intentions, and respondents who actually leave via voluntary turnover. Table 2 is illustrative of this type of analysis.

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4   Given the many shortcoming and complications with exit interviews (or surveys), employee retention experts recommend using "less reactive" methods than the exit interview to determine reasons for employee turnover (e.g., Griffeth & Hom, 2001).

Table 2

Effective and highly effective teachers' mean responses

Possible turnover cause	All teachers	Effective and highly effective teachers		
		Turnover Intenders	Voluntary leavers - school	Voluntary leavers - district
Satisfaction with principal	4.0	3.1	2.4	3.0
Pay	3.0	2.7	2.9	2.2
Student discipline	3.5	3.0	2.5	3.0
Grade/subject assignment	4.0	3.9	3.9	3.9
Class size	3.5	3.4	3.5	3.4

Note: Based on a Likert scale of 1-4.

The results suggest that most effective and highly effective teachers are satisfied with these aspects of their jobs, but that those with turnover intentions are less satisfied with their principals and with student discipline. Teachers who have voluntarily left schools (but not the district) are more dissatisfied with their principals and with student discipline. Teachers who left the district were also less satisfied with principals, but were also more dissatisfied with pay. Considering principals first, further by-school analysis would show if the dissatisfaction was concentrated in some schools or was common across schools. The results also suggest that pay could be a reason teachers are leaving the district.

Districts could then use focus groups to follow up on these results and provide deeper information as to what it is about pay and principals that was concerning to teachers. The district could then explore ways to improve satisfaction with principals at these schools, or at all schools, and to change pay.

More advanced statistical options are also available to identify the extent that factors predict actual teacher turnover. Common methods used to examine teacher turnover have included regression models (e.g., Ladd, 2011), hazard analysis (e.g., Brewer, 1996) and structural equation models (e.g., Hom, Caranikis-Walker, Prussia, & Griffeth, 1992). The benefit of these more advanced options in general is that they can examine the extent that factors are predictive of teachers' departures (potentially at multiple levels), independent of other factors that are associated with turnover, including racial or socioeconomic mix of a school's students.[5] See Exhibit 2 for a description of the use of predictive data in a business setting.

Exhibit 2

Frontier of HR retention metrics

Extending on the concept of assembling data that are predictive of turnover, some businesses use algorithms to identify employees that are at risk of leaving companies. Company personnel combine data including performance reviews, employee surveys, communication patterns, personality tests, social networks, and event attendance to identify individuals at risk of leaving the company. Some human resource companies have gone as far as assigning "retention predictor" numbers to employees. This information is used by companies to proactively preempt employee turnover and could be an option for grantees to consider.

Once the analysis is completed the challenge of what to do with the results remains. The next section discusses how to map interventions to causes.

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5   It is important to note that although there are many constructs to help explain turnover, there is still a relatively small amount of overall variance explained in teacher turnover models. This means that while it is helpful to use these constructs, expectations of the results have to be reasonable. Turnover decisions are complex and influenced by a multitude of factors; no model will accurately predict all teacher turnover.

Applying Interventions: Mapping Solutions to Causes

Taking the time to uncover specific problems or issues that may be driving teacher mobility or turnover is critical to implementing retention solutions that address those underlying issues. Once data have been combined and analyzed, and the significance of the causes have been determined, the next step is to apply appropriate interventions by mapping potential solutions to the causes. There is a range of options available that can address some of the problems, but it is important to implement a solution that addresses the identified causes. Research on employees in general and teacher turnover provides a range of potential solutions that can be used to mitigate teacher turnover. This section is organized around key strategic human capital management elements including the work environment, compensation, and staffing and recruitment. The solutions discussed under each section offer a way to mitigate teacher attrition but may also address different root causes of turnover, so they should be used when the grantee has identified the specific cause linked with that intervention.

On that note, there are some general human capital management practices that grantees can implement to potentially reduce teacher turnover and that are beneficial to developing the teacher workforce in general, but that do not necessarily map clearly onto specific causes. These practices are primarily discussed under the subsection recruitment and acquisition.

It should also be noted that most research on teacher retention strategies primarily focuses on teacher induction/or mentoring programs and compensation, either through changes to the salary schedule or via stipends/bonuses, which leaves a large gap in the knowledge about the impact of teacher retention strategies focused on other elements of the workplace. Hence, in addition to teacher retention strategies, this section reviews a range of solutions offered by business management literature (which draws on field of personnel economics, industrial psychology, and applied psychology) and discusses when these practices have been utilized in an educational setting.

Range of Solutions

Managing work environments

Establishing an appropriate work environment is critical to retaining teachers. A critical aspect of talent acquisition is the selection process, yet individuals are unlikely to stay without appropriate work environments. Many factors considered under the broad term of working conditions influence teacher retention, mobility, and turnover (Borman & Dowling, 2008; Guarino, Santibanez, & Daley, 2006).[6] Some specific examples of various types of working conditions that have linked to teacher retention include induction programs (Smith & Ingersoll, 2004), teacher autonomy (e.g., Ingersoll, 2001b; Weiss, 1999), administrative support (e.g., Ingersoll, 2001b), leadership (e.g., Brown & Wynn, 2009; Hirsch, Emerick, Church, & Fuller, 2007), faculty influence (Ingersoll, 2001b, 2006, 2011), student discipline, and accountability policies (Clotfelter, Ladd, Vignor, & Diaz, 2004). While there is an abundant amount of evidence that links factors associated with working conditions to teacher retention, there is much less research on actual strategies implemented to improve working conditions and their subsequent impact on teacher retention.

Orientation/induction programs

Grantees can use orientation programs to potentially reduce teacher attrition. Orientation programs are used to welcome new employees, build positive attitudes about the organization, share organization information (mission, values, and structure), introduce the work environment, and communicate policies, procedures and rules. Orientation programs in the private sector can last anywhere from 15 minutes to one year, and similarly Hirsch, Koppich, and Knapp (2001) found that teacher induction/mentoring programs vary widely in terms of duration, funding and participation levels. Nonetheless, there is evidence that induction programs can reduce

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6   Research on employee turnover substantiates these findings by providing evidence that many of these working conditions are determinants of job satisfaction and organizational commitment, both of which have been linked to employee turnover (Hom & Griffeth, 1995; Griffeth & Hom, 2001; Griffeth, Hom, & Gaertner, 2000).

beginning teacher turnover. Smith and Ingersoll (2004) found that new teacher induction programs with strong positive effects on reducing teacher turnover provided the following: common planning time with other teachers, opportunities for collaboration with other teachers on instructional issues, a mentor with license in the same field, and connections to external network of teachers for curriculum and instructional issues. Additionally, focusing on developing effective classroom management strategies (Lemov, 2010) may also mitigate beginning teacher turnover attributed to student discipline and behavior issues. However, one of the few randomized experiments to evaluate the effect of induction programs on teacher retention provided evidence that there was no impact on teacher retention (Glazerman et al., 2010). Given the lack of consensus in the academic literature, grantees considering developing induction programs for beginning teachers need to give due consideration to the design, implementation, and cost-effectiveness of such an approach. Nonetheless, if beginning teacher support is cited as problematic, induction programs offer a potential solution.

> When employees receive conflicting demands about their work, are unclear about expectations, or face too many demands and expectations they often quit.

Faculty influence

Faculty influence (or control) has also been linked to teacher retention (Ingersoll, 2006). This factor can include control over matters such as instructional issues and student discipline, and can be at the classroom or school level. Ingersoll (2006) thoroughly examined and discussed teachers' decision-making power in schools and demonstrated the effects of teacher control. In particular, Ingersoll (2011) noted that teachers' with a high level of control over student discipline were less likely to depart than teachers' with low levels of control over such issues. In addition to increased teacher retention, Ingersoll's (2006; 2011) research also demonstrated that in schools where teachers have more control over schoolwide and classroom decisions, there are fewer student discipline problems and stronger staff collegiality and commitment. To address these issues, Ingersoll

(2011) provided some recommendations that take a balanced approach to power and accountability and are grounded in organizational management and leadership. If low levels of teacher influence over classroom and schoolwide matters are reported by teachers, some of these approaches and practices may mitigate teacher attrition.

Leadership

Despite the fact that management research has blamed employee turnover on bad supervision for a long time (Hom & Griffeth, 1995; Mobley, 1982), and teacher turnover research has demonstrated the influence of poor leadership on teacher retention, there is little existing research that yields practical suggestions for grantees to implement with school leaders. However, as frontline human capital managers in education, principals can take steps to increase teacher motivation, commitment, and engagement, all of which are linked to teacher retention in a variety of ways.

One strategy is training principals to develop high-quality relationships with teachers. Scandura & Graen (1984) developed a leadership program, referred to as leader-member exchange (LMX), to teach leaders how to develop high-quality social exchanges with subordinates that are linked to employee retention. Aspects of LMX also overlap with building trust. Bryk and Schneider (2002) demonstrated how trust between principals and teachers was related to student academic performance. Establishing a culture of trust may also be a strategy for improving teacher retention, and principals are responsible for setting the tone for a trust- oriented culture.

Principals may also reduce role stress and thereby reduce teacher turnover. When employees receive conflicting demands about their work, are unclear about expectations, or face too many demands and expectations they often quit. Some ways supervisors can reduce stress include providing materials and resources to perform duties, reducing incompatible requests from multiple people, and providing clear performance feedback (House, Sculer, & Levanoni, 1983).

Another strategy is for principals to develop a culture of engagement (Odden, 2011). In the private sector, engagement has been shown to influence retention (Harter, Schmidt & Hayes, 2002). Books on employment engagement provide some prescriptions

for increasing engagement (e.g., Marcy, Schneider, Barbera, & Young, 2009; Truss, Delbridge, Alfes, Shantz, & Soane, 2014). Odden (2011) distilled these practices into several common themes: sharing information on organization vision and direction, providing clear expectations and feedback, demonstrating how work influence's organizational goals, and involving staff in decisions that affect them.

Student behavior and discipline

Student behavior and discipline is another working condition factor related to teacher retention and turnover (Ingersoll, 2006). Student behavior and discipline varies dramatically across schools even controlling for student background characteristics (e.g., poverty levels). This fact demonstrates that some schools are better at addressing and dealing with student behavioral issues. If a grantee identifies student behavior and discipline as a key factor related to teacher turnover, grantees could implement strategies to specifically address student discipline and behavior issues. For example, Ingersoll (2011) discussed how involving teachers in schoolwide student discipline policies can result in lower student behavioral problems and stronger teacher retention.

Improving autonomy

Teacher autonomy or empowerment is a complex issue but clearly tied to teacher retention. Research provided by Ingersoll (2001a) demonstrated that teachers' shrinking autonomy is a primary contributor to teacher turnover nationally. This is especially true for teachers in strong state testing and accountability environments, such as math teachers (Ingersoll & May, 2010). In the teaching profession, school, district, state, and federal policies influence teachers' autonomy over their scheduling, curriculum, and teaching practices, so increasing a teachers' autonomy is not necessarily a simple or straightforward matter. In the private sector, one principle for increasing autonomy is vertically loading the job, that is, pushing down responsibilities and duties reserved for management. Applying this concept to the education sector, policies or programs that provide teachers more leadership responsibilities, such as career ladder positions, can increase teachers' autonomy and give them more control over their work. Kimball, Milanowski, and Heneman (2010) provided examples of principals aiming to retain priority teacher increasing teachers' autonomy to do so. If grantees determine that one of the primary cause of teacher turnover is low levels

of perceived autonomy, grantees should consider implementing strategies aimed at increasing teacher autonomy, whether it be over student discipline, instructional materials, and/or instructional practices that are within their constraints.

Development opportunities

Teachers highly value consistent opportunities to expand and improve their professional practice. In addition to the well-developed and implemented induction programs, grantees should deliver professional development programs that are systemic and structured to retain talent. Odden (2011) provides an overview of structures that make a successful professional development program. In addition to providing development opportunities, many of the recommended structures simultaneously promote other factors that are associated with retention such as collaborative work skills, including collaboration amongst school leaders.

Salary

Pay levels matter. Numerous studies demonstrate that higher teacher salaries are associated with lower turnover rates (e.g., Brewer, 1996; Guarino et al., Daley, 2006; Hanushek, Kain, & Rivkin, 1999; Ingersoll, 2001a; Milanowski, 2008). Teachers on the fringes of districts often move from lower paying to higher paying districts. Individuals leaving the profession often cite inadequate pay as a reason for exiting. In addition, teacher shortages in urban areas are often attributed to inadequate pay. Thus, grantees need to consider whether their salaries are adequate and competitive.

If salary levels are a culprit of teacher turnover, there are steps that grantees can take to examine whether their salary levels are competitive. Odden and Wallace (2008) provided steps for grantees to follow to conduct an external scan to identify competitive salary levels. This process entails benchmarking teacher salary levels against other school districts and comparable occupations. This analysis can identify pay levels at various points in the salary schedule that may be problematic. For example, compared to neighboring districts, a school district may offer a low starting salary, which would raise concerns about having a high enough salary level to recruit the best applicants.

While comparing single salary schedules across districts may be an "apples to apples," comparisons across substantially different salary schedules may

not be a straightforward process. If that is the case, grantees should identify key benchmarks and compare those points. Comparing teachers' salaries to other occupations is also not a straightforward process; however, researchers have identified comparable occupations and made comparisons between entry-level salaries and average salary levels (e.g., Milanowski, in Odden and Wallace, 2008). Allegretto, Corcoran, and Mishel (2008), and Goldhaber and Player (2005) also provided a detailed discussion and analysis comparing teacher salaries to comparable occupations.

In addition to examining the pay levels of teachers as a whole, it is important to examine specific shortage areas in particular. Labor market economists argue that if an organization experiences employee shortages in specific subjects (e.g., math and science) or areas (e.g., urban schools with high percentage of students from low-income backgrounds), pay levels may be too low (e.g., Goldhaber & Hannaway, 2009). They argue that these individuals are in a different labor market and that one remedy to such shortages is increasing pay levels.

To address shortages, many school districts across the country provide pay differentials to mathematics and science teachers and hard-to-staff schools (typically defined by varying levels of student poverty) (e.g., Denver Procomp Program, Fairfax County (VA), Miami-Dade County (FL)). In some cases, bonuses offered to teach in hard-to-staff schools are contingent on meeting specific criteria demonstrating teaching competencies. For example, in Washington state, teachers receive a bonus for teaching in hard-to-staff schools if they are National Board certified. To provide a sufficient differential, these bonuses have to be a substantial. Research has demonstrated that bonuses at $5,000 or greater are required to have much of an impact (Clotfelter, Ladd, Vigdor, & Wheeler, 2007). In a multisite randomized experiment, Glazerman, Protik, Teh, Bruch, and Max (2013) found that transfer incentives of $20,000 successfully attracted high value-added teachers to shortage areas.

In addition to conducting external scans to determine competitive pay levels, grantees can also do an internal scan to assess to how their current salary schedule enhances the organizational goal of improving student performance. Odden and Wallace (2008) again provided a template for conducting an internal scan. In addition to wanting to receive adequate pay,

individuals entering the teaching profession today want a salary schedule that accounts for performance including levels of expertise and skills, responsibility, and impact on student achievement (Johnson & Papay, 2010). Building a salary schedule that distributes pay in a way that meets the demands of the new generation can simultaneously address teacher retention and organizational performance.

If the amount of pay is signaled as problematic during the diagnosis phase, then grantees need to follow the steps above; however, if teachers indicate that it is the way in which pay is allocated, then grantees should address pay fairness, also referred to as procedural justice.

Leveraging compensation and performance evaluation processes

To fully leverage compensation in a manner that promotes teacher retention, TIF grantees need to consider the amount and type of teacher compensation, and they need to give due consideration to the manner in which compensation is allocated. Research in education on the effect of teacher compensation on teacher retention typically focuses on determining an appropriate pay amount versus the manner in which pay is distributed (Borman & Dowling, 2008), but both aspects influence employee retention. Compensation and staffing experts unequivocally purport that competitive pay and benefits are critical for attracting and retaining employees. Also critical is the manner in which pay is distributed. Some human resource experts and social scientists even contend that the manner in which pay is distributed, referred to as procedural justice, is more critical than the amount distributed referred to as distributive justice (e.g., Folger & Konovsky, 1989; Tyler, 1990). Tyler (1990) argued that managerial strategies based on procedural justice bonds employees to a company more so than ones based on distributive justice; Folger & Konovsky (1989) observed those fair pay procedures for allocating bonuses committed employees to a firm more so than the actual amount of the bonus.

Pay Fairness

Perceived fairness of pay allocation is important to employees. Likely, one of the reasons that the single salary schedule has survived repeated reform efforts is that teachers perceive it as being fair. As TIF grantees move to more complex compensation schedules, they

need to ensure that their pay allocation procedures are still perceived as being fair. To ensure fair procedures, TIF grantees should consider the five aspects of a fair pay procedures identified by social scientists (e.g., Folger & Cropanzano, 1998; Leventhal, 1980; Tyler, 1990).[7] They are

- consistency,
- bias-free,
- participation,
- accurate, and
- correctable.

Grantees that have salary systems that include multiple types of compensation (e.g., variable pay and/or stipends), which are based on multiple criteria, have to apply these principles to each component. For example, if a grantee uses teacher performance to determine salary advance or eligibility for a bonus, the teacher evaluation system needs to be procedurally fair. Figure 3 illustrates these fair pay principals applied to a teacher evaluation system.

Figure 3

Fair pay practices for a teacher evaluation system

Consistency	■ applying consistent evaluation criteria to teachers ■ consistenly following observation guidelines ■ consistently applying professional judgment (in cases where it is necessary)
Accurate appraisals	■ evaluate teachers on appropriate criteria, based on multiple measures ■ based on frequent observations ■ document evidence of performance ■ assess inter-rater reliability ■ ensure evaluators are trained on evaluation system and knowledgeable about teaching practices
Freedom from bias	■ limit extent that personal prejudice or favoritism may influence ratings ■ again, assess inter-rater reliability
Participation	■ provide opportunity for teachers to review or appeal evaluation rating ■ include self-evaluations ■ allow participation in goal setting ■ allow participation in developing student learning objectives ■ train teachers for evaluation process, including review process
Correctable	■ establish appeals process for evaluation ratings

7   There is also a third dimension of justice (not discussed here) referred to as interactional justice, which is concerned with fair interpersonal treatment, that is, fair interpersonal treatment of supervisors across employees. This factor may also be relevant if variation in interpersonal treatment is perceived to influence evaluation ratings or opportunities for leadership roles.

Recruitment and acquisition

The interventions above address specific factors that may be identified in surveys or focus groups as leading causes of turnover. The discussion below focuses on recruiting and selecting teachers who are less likely to turn over. These recruitment and staffing practices may promote teacher retention in general in the beginning of a teacher's tenure. Instead of focusing on causes of turnover retroactively, grantees can use these practices to proactively promote teacher retention during the staffing process.

Recruiting and selecting new teachers

Grantees can use various practices to increase the odds of hiring teachers that will stay with the district. One approach is to identify which sources provide high-quality candidates that tend to remain teachers in the district or the teaching profession. This can be done by tracking turnover by source of supply (e.g., teacher preparation program) or geographical area. Then, recruitment is targeted to these sources.

Selection processes

Grantees can also develop selection processes that can assist them in identifying teachers that are more likely to be retained. Business management literature offers several mechanisms, such as realistic job previews, job fit (person and organizational fit, person/cultural fit, person/person fit), and screening tools, for selecting the appropriate candidate. The realistic job preview (RJP) is a tool that allows organizations to demonstrate to potential employees desired competencies and actual job demands. Principals can use RJP to provide prospective teachers with upfront information accentuating the demands of the work in their particular school setting, including any social challenges or resource constraints (Odden, 2011). For example, The Urban Teacher Center uses videos to demonstrate the challenges and demands of becoming a teacher candidate in its teacher preparation program.

Grantees can also assess potential teacher candidates on three components of job fit: person/organization fit, person/culture fit, and person/person fit. Employees that demonstrate better fit with an organization in terms of compatibility and comfort with an organization are more professionally and personally tied to an organization and less likely to quit (Mitchell, Holtom, Lee, Sablynski, & Erez, 2001). Person and organizational fit can be assessed by determining alignment between person work characteristics

and organizational work demands. (Hinkle and Choi (2009) provided an example of a person-environment fit scale.) Person and cultural fit is indicated by the extent that people align with the organization's mission and vision and employees' behaviors. Harris, Rutledge, Ingle, and Thompson (2010) provided some evidence that school principals do include "organizational fit" as part of their hiring criteria. Person to person fit refers to the fit with others in the organization and the new hire, that is, peer cohesion. Employees are more inclined to leave a job if they do not feel accepted by their colleagues. To preempt teacher turnover, grantees could assess potential teacher candidates on these domains. Example items are provided in Exhibit 3.

Exhibit 3

Example person-job fit (P-J) and person-organizational (P-O) fit survey items from Saks and Ashford (2002)

The P-J fit items are:

"To what extent do your knowledge, skills, and abilities match the requirements of the job?"

"To what extent does the job fulfill your needs?"

"To what extent is the job a good match for you?" and

"To what extent does the job enable you to do the kind of work you want to do?"

The P-O fit items are:

"To what extent are the values of the organization similar to your own values?"

"To what extent does your personality match the personality or image of the organization?"

"To what extent does the organization fulfill your needs?" and

"To what extent is the organization a good match for you?"

Responses are on a 5-point Likert-type scale with anchors from 1, *to a very little extent*, to 5, *to a very large extent*.

Grantees should develop a screening process that is explicitly connected to their system's instructional vision and desired teacher competencies. Along these lines, there is some evidence that structured selection instruments for the hiring process can assist them in identifying teachers that are less likely to leave

(Goldhaber, Grout, & Klein, 2014). Other screening tools, such as the Haberman Star Teacher Pre-Screener and the Gallup TeacherInsight Assessment, might also be useful here, though studies have not yet connected scores on these with turnover.

Given the plethora of teacher turnover information that may be obtained, analyzed, and acted upon, the following section provides a suggestion for how to approach combining all the tracking, diagnosis, and intervention data into one information source. It begins with a criterion for assessing whether the effort invested in this process may be worthwhile.

Further practical considerations

Is a Strategic Approach Needed?

In considering the options available for determining the causes of teacher mobility and turnover and implementing potential solutions, one must ask if the effort invested will be worthwhile, that is, will the investment be worth the gains. If the gains will be relatively small, then only a small investment is warranted. In the case of retention interventions, efforts vested in diagnosing causes of teacher mobility and turnover and implementing teacher retention strategies meet a cost-neutral criterion if the probable gains from reducing teacher turnover exceed the costs of implementing the intervention/s. To determine if a strategic accountability approach is necessary, grantees should consider the costs of the data collection processes, the costs of the interventions implemented, the potential reduction in teacher turnover, and the average cost savings of that reduction in teacher turnover.

Based on rough estimates, grantees should be able to determine if the time and effort spent on implementing teacher retention strategies will be worthwhile. Given the costs of implementing teacher retention strategies and the costs of teacher turnover can be reasonably estimated, a grantee can then determine the amount of reduction in teacher turnover that is needed to warrant the various approaches.

The costs of diagnosing the causes of teacher turnover and applying solution sets can be estimated by tallying four main categories of costs: personnel, facilities, equipment and materials, and other program inputs.

For example, if a grantee plans on administering a survey or conducting a focus group with teachers, it should consider the costs of personnel time to develop, administer, and analyze the data and any equipment used for this process. Furthermore, the costs of implementing the chosen intervention should be estimated using the same categories. If a district proposes to implement an induction program for beginning teachers, the costs associated with each category should be accounted for and tallied. Grantees can combine these costs to get an estimate of the costs associated with implementing teacher retention strategies.

Based on these estimates, the amount of reduction of teacher turnover needed to break even and/or have a return on investment can be roughly estimated using teacher turnover cost estimates provided by Milanowski and Odden (2007). Based on the current teacher turnover in the district, projected reduction in turnover, and teacher turnover costs estimates, grantees can estimate the maximum allowable costs that would make the retention strategies worthwhile, that is, the break-even point. Table 3 depicts one way to assess these costs. In this hypothetical scenario, the district has 1,000 teachers with teacher turnover ranging from 10 to 20 percent. A reduction in teacher turnover results in of 5 to 40 individuals being retained. Based on Milanowski & Odden's (2007) low and high estimates for a fifth-year teacher, the maximum allowable range of costs to the meet the break-even point are presented in the last column.

Table 3

Break-even points for teacher retention interventions

Actual current district turnover (district teachers n=1,000)	Turnover reduction	Teacher turnovers prevented*	Teacher turnover cost savings		Maximum allowable costs of retention strategies to meet cost-free criterion	
			Per 1st year teacher-middle estimate	Per 5th year teacher-middle estimate	Low	High
10%	5%	5	$9,774	$13,969	$48,870	$69,845
	10%	10	$9,774	$13,969	$97,740	$139,960
	15%	15	$9,774	$13,969	$146,610	$209,535
	20%	20	$9,774	$13,969	$195,480	$279,380
15%	5%	8	$9,774	$13,969	$78,192	$111,752
	10%	15	$9,774	$13,969	$146,610	$209,535
	15%	23	$9,774	$13,969	$224,802	$321,287
	20%	30	$9,774	$13,969	$293,220	$419,070
20%	5%	10	$9,774	$13,969	$97,740	$139,690
	10%	20	$9,774	$13,969	$195,480	$279,380
	15%	30	$9,774	$13,969	$293,220	$419,070
	20%	40	$9,774	$13,969	$390,960	$558,760

*rounded to the nearest whole.

For illustrative purposes, this table uses the middle estimate for first- and fifth-year teachers. However, grantees can fine-tune their estimates using figures that may closely approximate their turnover and the costs that they want to include. For example, these teacher turnover cost ranges can be calculated in a variety of ways, based on different combinations of high, medium, and/or low estimates, teacher experience (e.g., first year or fifth year), and different types of costs (e.g., separation, replacement, training, productivity). Grantees could approximate their turnover costs more accurately by adjusting for the teacher turnover estimates to reflect actual teacher experience lost and actual costs of training. Additionally, grantees could decide whether or not to consider the value of lost productivity in their estimates. Based on the rationale that a loss in productivity is a type of cost, this model includes it in the costs estimates.[8]

The table demonstrates a way to calculate the break-even point for implementing retention strategies. Taking the estimates one step further, grantees could calculate the return on investment by dividing the actual savings by the actual costs.

Developing retention dashboards

Grantees can develop teacher retention balanced scorecards (Kaplan & Norton, 1992) and display them using dashboards to provide leaders and stakeholders with key elements of their teacher retention strategy. Since no single measure provides a clear performance target or focuses attention on all critical elements of retention, it makes sense to develop a balanced teacher retention scorecard. Balanced

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8   Teacher turnover at the school or district level may result in additional human capital loss, social capital loss, a decrease in organizational performance, and, cyclically, more turnover. These are all important impacts to consider when examining the costs of teacher turnover and, likewise, all potential benefits gleaned from applying interventions.

scores should contain information on each step of the strategic plan, that is, tracking, diagnosing, and interventions. The dashboard should display prioritized retention metrics, along with their current levels. Figure 4 provides an example of a teacher retention dashboard that displays three key tracking metrics: overall district retention, intra-school retention, and avoidable, effective turnover levels. Grantees can choose from a variety of metrics that they want to focus on depending on the nature of their turnover (see *Identifying, Monitoring and Benchmarking Teacher Retention and Turnover: Guidelines for TIF Grantees for suggestions*). The dashboard should also display key information pertaining to the diagnosis of the causes of teacher turnover. The example below displays the data collection tools and the data in a manner that speaks to the identified priorities. If grantees are concerned about intra-district teacher retention levels, the data presented should provide information on variation in conditions across schools. Likewise, if a grantee is concerned about effective teachers moving out the district, the dashboard should display critical information about why effective teachers are leaving. Lastly, the dashboard should contain information about the retention interventions, including types, results, and goals. This dashboard depicts the interventions at the various levels, along with the goals and annual changes in retention/turnover rates.

Combining tracking, diagnosing and intervention information into one dashboard combines critical pieces of the retention strategy and allows leaders and stakeholders to focus on multiple measures.

Figure 4

Example of a teacher retention dashboard
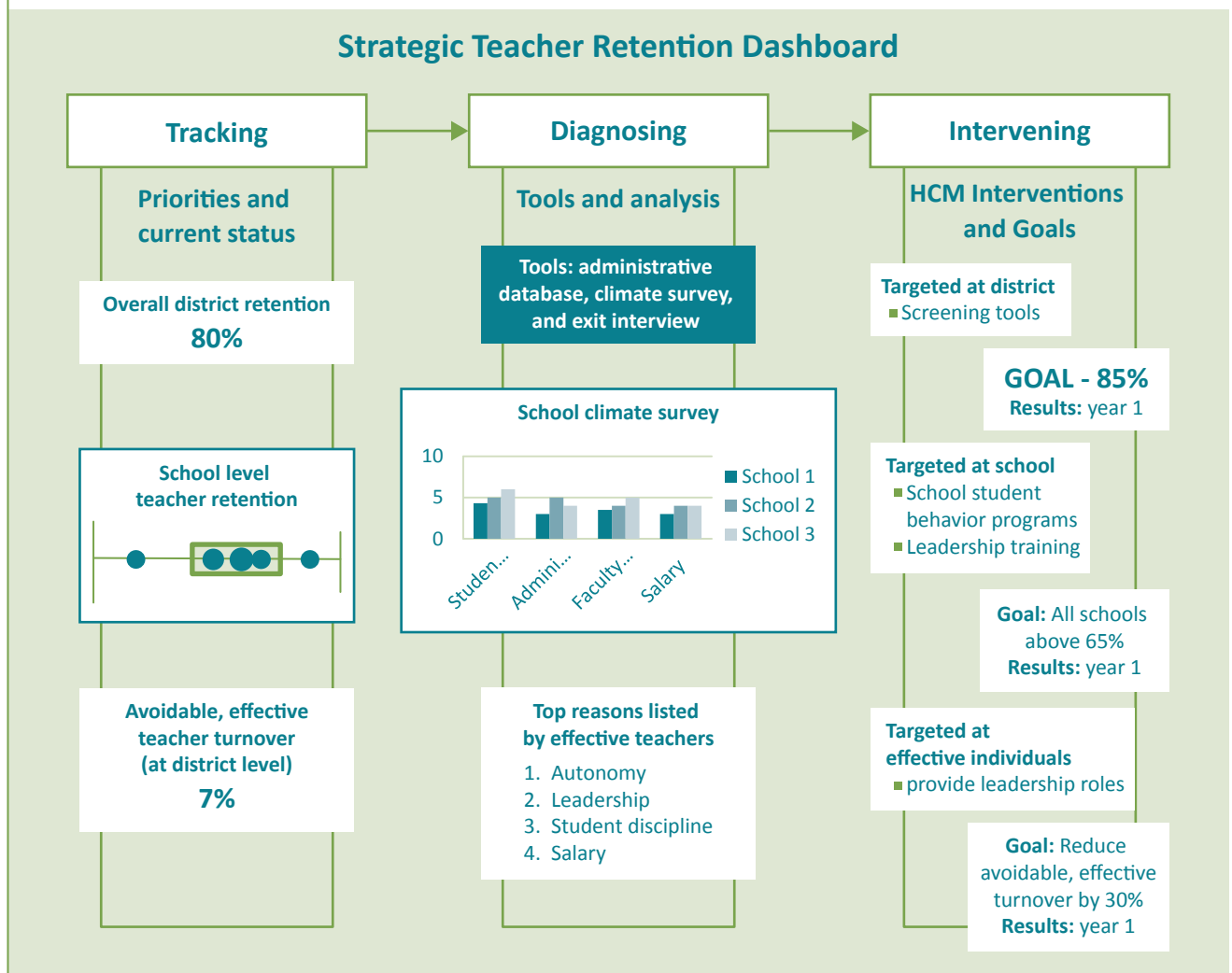
Summary

To effectively address teacher retention/turnover, grantees need to follow an approach that entails aligning the tracking, diagnosing, and intervening processes. Unfortunately, often retention strategies are implemented without regard to the various types of turnover and specific data about the causes of turnover. This sets the stage for ineffective interventions that do not address the root causes of teacher turnover and/or that are not targeted toward either specific types of turnover or problematic areas. Conversely, this strategic approach argues for targeting specific types of turnover, collecting data accordingly, and implementing interventions that address the causes of teacher turnover.

Appendix A: Example Teacher Retention and Turnover Surveys

The survey shown below was developed by TIF TA providers Tony Milanowski and Mark Fermanich to help one TIF district understand potential causes of its turnover and retention. The survey was designed to be a leading indicator of turnover by asking teachers to indicate whether they perceived job, school, and district characteristics as pushing them to leave or attracting them to stay. It was meant to be administered to all teachers, in order to identify both the district's strengths and weaknesses in retaining teachers. Note that the introductory question could be modified to ask about how the characteristics listed influence retention at the school level.

How does each of the following influence you when you think about whether to stay or leave this district?

	Toward leaving				Toward staying		
	A lot	Moderately	A little	None	A little	Moderately	A lot
My school's location relative to home	-3	-2	-1	0	1	2	3
The types and quality of local community resources and amenities available to me	-3	-2	-1	0	1	2	3
The level of my salary	-3	-2	-1	0	1	2	3
The types & quality of fringe benefits available to me	-3	-2	-1	0	1	2	3
The security of my job	-3	-2	-1	0	1	2	3
Class sizes in my school	-3	-2	-1	0	1	2	3
Student behavior in my school	-3	-2	-1	0	1	2	3
The quality of school leadership in my school	-3	-2	-1	0	1	2	3
Professional development opportunities available to me	-3	-2	-1	0	1	2	3
The amount of autonomy to teach	-3	-2	-1	0	1	2	3
My ability to influence school policies and practices	-3	-2	-1	0	1	2	3
Workplace conditions (facilities, classroom resources) in my school	-3	-2	-1	0	1	2	3
My teaching assignment (grade level, subject area)	-3	-2	-1	0	1	2	3
The support I receive from colleagues	-3	-2	-1	0	1	2	3
The performance evaluation system in the district	-3	-2	-1	0	1	2	3
My opportunities for leadership roles (or multiple career paths, career advancement) in my school or district	-3	-2	-1	0	1	2	3
The quality and availability of instructional materials in my school	-3	-2	-1	0	1	2	3
The level of support for my students from parents and the community	-3	-2	-1	0	1	2	3

Appendix B: Practical Logistical Considerations for Implementing Surveys

There are numerous logistical issues for grantees to consider when administering surveys to collect teacher retention/turnover data. Griffeth and Hom (2001) provided recommendations and guidelines for administering surveys; key considerations include the timeframe for administering a survey, the sample size, and survey participation. Grantees can administer surveys at a variety of times for different purposes. Routine annual surveys are probably the most common. Annual surveys provide trend data by continuously monitoring teachers' perceptions of the school and/or school district working conditions. Other options include directly preceding a major event or following up after intervention. Another time to administer a survey is immediately following a teacher's departure (i.e., exit interview).

Grantees also need to consider whether they want to administer a survey to all teachers in the district, a random sample, and/or a stratified sample. A survey administered to all teachers, with a sufficient response rate, will yield information that can be generalized to the entire teacher population. To reduce costs, however, grantees could survey a random sample from the teacher workforce population rather than survey the entire group, which can also provide results that are generalizable to the entire teacher workforce. For stratified random sampling, the teacher population is divided into subgroups (i.e., strata) and randomly selected in each group. This method is designed to generate a list of critical subgroups (e.g., new or novice, minority, and/or effective teachers).[9]

Of course, simply administering to all teachers or generating samples is alone insufficient to guarantee representative samples; participants must also respond, and grantees should take steps to ensure that they do. Griffeth and Hom (2001) provided a list of recommendations to follow for increasing response rates including using short surveys, providing timely feedback, and allowing employees to complete the survey on "company" time. For a more detailed discussion of survey types, timeframes, samples, and participation rates see Griffeth and Hom (2001). For guidelines and recommendations for conducting retention/turnover focus groups see Phillips and Connell (2003).

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9   Once the survey data are collected, the survey sample can be tested against the total population to confirm that it is representative.

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