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Capacity to Change

Data, Information Technology, and Payroll Needs in Alternative Compensation Systems

Lauren Bivona

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Introduction

Successful implementation of alternative compensation is contingent upon having accurate data. After accuracy has been determined, collecting, storing, and using data accurately to inform and distribute compensation is critical. Recognizing these critical activities, this paper draws upon literature regarding the challenges associated with developing data systems and guides local education agencies (LEAs) through key questions associated with data capacity, information technology, and payroll practices.

Data and Information Technology

Alternative compensation systems often require LEAs to use data in new ways. When designing new compensation systems, LEAs will need to consider the current capabilities of their data and information technology and decide if additional changes will need to be made. The following subsections describe important questions to consider when designing alternative compensation systems. Will the Data Be Available When We Need It?

Collecting and analyzing student test scores and other measures requires significant time. Because these data will be used to inform high-stakes decisions including compensation, delayed distribution of data can have significant impacts on teachers' livelihoods. Thus, ensuring that data will be available in enough time to permit analysis is important. For example, Advanced Placement scores are usually not available until early summer. Thus, use of such scores for the purposes of teacher evaluation and compensation may not be possible before the end of the school year. Alternative measures may need to be used to inform compensation decisions, or LEAs may need to set an extended timeline so that the scores can be received and then used in compensation decisions. Similarly, administering student or parent surveys during the final weeks of the school year may not permit sufficient time to collect data from a large enough sample and analyze the data prior to the end of the school year. Careful consideration of when data will be available and backward mapping of deadlines may be necessary to ensure that the district will have the data it needs to make informed decisions about its educators. An alternative approach is to design comprehension systems that accommodate the fact that various data become available at different times during the year. For instance, some schools give incentive rewards retroactively as data become available during the school year.

How Will We Store Our New Data, and Who Is Responsible for Data Entry?

As LEAs implement evaluation and compensation systems based upon multiple measures, they will need to develop procedures for entering and housing data. Some measurement data points might include results of surveys, observation scores, student achievement measures, value-added scores, and results of student learning objectives. The first step is to decide the level of detail needed when reporting data. For example, an LEA may decide to collect not just final scores for each measure but also subscores and feedback; these data can be used in the compensation system and also can be used to determine professional development needs. The second step is to determine to store and collect data in a user-friendly way. Because it is likely that many users will be responsible for entering, reviewing, and analyzing the data, ensuring the system is easy to use and fairly intuitive can be important. A third step is to estimate the time it will take to enter the data and determine who will be responsible for entering it. This proactive look at the time required can help reduce the likelihood that educators or other individuals will be overwhelmed by new data entry requirements. For example, one LEA may think principals should enter all observation scores for teachers. However, after estimating how much time it will take for a principal to enter scores, leaders may realize that they will need to remove something else from

the administrators' list of responsibilities to give principals enough time to devote to observations of teachers. Other data entry options include enlisting current data entry personnel and data technicians or hiring additional staff to help manage the new influx of data. Anticipating additional time and costs related to data entry during the design process can help LEAs prepare to adequately support implementation of new compensation systems

Who Will Be Able to Access the Data?

Data from teacher evaluation and compensation systems can be useful to a variety of users. Educators impacted by the new compensation system should be able to review their data to ensure that the information is accurate. Further, the information should be displayed in a way that it can be used for reflection and improvement of educator practice. Data on current and anticipated teacher salaries can be used by finance offices to inform fiscal allocations and projections. District offices, school administrators, and instructional coaches can use data on strengths and weaknesses of teachers to inform professional development offerings, coaching, and improvement plans. Although the information is important for multiple users, LEAs will need to decide who needs access, how users will access the information, and the level of detail needed. For example, a school administrator or instructional coach may need access to individual evaluations in order to provide individualized feedback and support to a teacher in the school, whereas a curriculum office at the district level might need only aggregate information to identify district professional development needs.

Can Our Data Systems "Talk" to Each Other?

LEAs tend to have multiple systems that house data (e.g., SIS, human resources systems that contain employee information, and a student assessment system). Additional systems might track and manage professional development, supplemental services, or nutritional services (Thorn, Glover, & Watson, 2009). In order to link teachers with students and gather the data needed for educator evaluation and compensation, LEAs will need to merge data from multiple systems. However, these systems tend to be developed by different vendors and use different conventions for inputting data. For example, one data system may have separate fields for last name and first name, while another system may have only one field for the name (Thorn et al., 2009). Due to inconsistencies in the data definitions, merging the two systems can be complicated and require resources to complete.

Thorn et al. (2009) describe four approaches to integrating data from multiple data systems. For a district to successfully apply any of these four approaches, the district will need both information technology expertise and resources.

1. No Centralized System. Without a centralized system to manage the integration of data from multiple systems, integration is usually done ad hoc and results in multiple data files that have been merged using various methods.
2. Operational Data Store. An operational data store organizes and stores data gathered from various other sources. Data files can be held here and then transferred to a data warehouse for archival and analytic purposes.

3. Establish Server to Direct Information Flow. Another option is to use a server that directs the flow of information from one source to another.
4. Dataless Architecture. This approach to integrating data from various systems is largely untested in education but is being used in other fields. Instead of moving data, this approach requires the use of applications to pull up data as needed.

Who Is the Teacher (of Record)?

A critical aspect of measuring teacher effectiveness and then translating those measures into compensation is linking teachers to students. As part of the linking process, LEAs need to define and determine the teacher of record, the educator receiving full or partial credit for a student's learning in a particular subject (Battelle for Kids, 2009).[1] This step helps ensure that data are accurate and useful. That being said, determining who is responsible for a student's learning can be more challenging than one might initially expect. Often, students interact with multiple teachers in any given day (Valli, Croninger, & Walters, 2007). For example, a student may have a class in which two teachers team teach most of the day, and then the student may switch to another teacher for mathematics. During reading instruction, a special educator or reading specialist may pull the student out of the classroom for supplemental instruction or push into the classroom to provide instructional support.

Changes made to schedules and class lists throughout the year may further complicate the linkage of teachers to students. For example, a school may use flexible grouping to ensure that students receive developmentally appropriate instruction, but this can make determining the teacher of record complicated. In addition, student mobility across schools also can complicate the linkage of teachers and students. In these cases, multiple decision rules are needed. Figure 1 contains lists of scenarios for LEAs to consider as they design alternative compensation systems and determine how to link teachers to students. These lists are not exhaustive and may not apply to all LEAs; rather, the lists are intended to spur thinking about how LEAs will fairly assign teachers to students.

When setting data collection and verification processes, LEAs will need to balance between overly simplistic configurations and overly burdensome data entry requirements. A verification process for determining teachers of record that is insufficiently rigorous may result in false assumptions about a teacher's effectiveness and lead to declining support for alternative compensation. If teachers do not understand the measures used to determine their compensation and if teachers do not have confidence in the ability of the measures to capture their individual contributions to student learning, support for alternative compensation systems may become threatened. Conversely, a highly complex process can require too many resources (both financial resources and time) and can confuse educators.

[1] The Teacher Student Data Link Project discusses the CELT framework's definitional template of teacher of record, which may be useful to consider. In the definition below, LEAs will want to determine the appropriate words given their context that would fit into each phrase in quotes:

> A teacher of record is an "educator" who is responsible for a "specified proportion" of a student's "learning activities" that are within a "subject or course" and are aligned to "performance measures." (Teacher Student Data Link Project, 2012)

A recent study of Teacher Incentive Fund (TIF) grantees found that they differed greatly in their approaches to linking teachers to students. Some grantees created attribution applications that assigned each individual student to teachers in percentage increments. Other grantees used teacher committees to document teaching configurations, such as coteaching arrangements, and some relied on principals to document which teachers are responsible for each student (Watson, Witham, & St. Louis, 2010).

Figure 1. Unique Classroom Configurations to Consider When Determining the Teacher of Record

Daily Interactions Between Teachers and Students

1. Coteaching
   a. Two instructors teach all students.
   b. One instructor works with all students, and the other instructor provides support to a predetermined list of students.
   c. One instructor works with half the students, and the other instructor works with the other half of the students.
   d. Two instructors provide instruction to flexible groups based upon the unit and lesson.
2. Additional instructional support
   a. A reading specialist provides additional fluency instruction to struggling readers.
   b. A gifted and talented instructor pulls students out of the classroom one day a week and provides reading and mathematics instruction that extends the usual curriculum.
3. For the unit on the Renaissance, the English and social studies teachers teach a cross-curricular unit.

Yearlong Interactions Between Teachers and Students

1. Every marking period, students are reassigned to classes based upon their performance and developmental needs.
2. A student drops out of a high school class in October.
3. Three students in a class move to another district midyear.
4. Two students join the class in February.
5. Based upon the recommendations of a teacher team, a student moves to a new class in January.
6. A teacher goes on maternity leave for six weeks, and a long-term substitute teacher assumes her responsibilities.
7. A teacher leaves suddenly, and administrators distribute the students across the remaining teachers rather than hire a long-term substitute or replacement teacher.
8. A teacher is chronically absent; consequently, a fellow team member often substitute teaches the students.

How Do We Verify That Information Is Accurate?

Although teacher-student linkage determines how teachers will be assigned students, rosters represent the application of teacher-student linkages. Rosters, the formal lists that assign students to teachers of record, are often determined using point-in-time data. In other words, the students in a class during a set point of time (such as the third week in September) are assigned to a given teacher. However, as noted previously, class configurations often change. Teachers leave; students leave; students are regrouped or receive additional supports. Thus, LEAs need to develop processes for verifying that the data used to inform alternative compensation are accurate.

LEAs should aim to create updating and verification processes that gather sufficient data without overburdening educators. For example, monthly updates to rosters may provide great detail, but they may also unduly burden local LEAs in the data management required for operation. An alternative is a transactional system that enables teachers or data managers to assign students to different teachers on an as-needed basis (Battelle for Kids, 2009). After updating and verification processes are delineated, the processes should be clearly communicated to educators, because educators are more likely to trust the program's outcome measures if they know they have input on data quality (Watson, Graham, & Thorn, 2012).

Verifying data can be an important step both in ensuring data is accurate and in maintaining stakeholder support. However, it is imperative that LEAs confirm information in a way that does not violate the privacy of employees or students. For example, after realizing a lack of coordination across central office data systems, one TIF grantee asked teacher liaisons to gather hard copies of certification and employment information from staff. This practice was problematic and quickly stopped because some thought it was inappropriate for teachers to be collecting such sensitive data about their peers (Malen et al., 2011). Rather than collect sensitive data in paper-and-pencil form, use of an online data system can enable educators to review their personal information (e.g., certification information, address, years of experience) and rosters in a convenient and secure way.

Watson et al. (2012) describe a model roster verification process in which administrators and teachers confirm or modify classroom assignments using a Web-based application. First, administrators conduct an initial review of rosters looking mainly for course-level discrepancies. For example, the principal would make sure that all teachers have students assigned to them and check that no groups of students are unassigned to a teacher. Second, a teacher reviews the rosters to confirm course assignments, the content area of the course, the length of the course, and applicable teacher team assignments. Finally, administrators conduct a review of roster changes, resolve any conflicts, and then account for any remaining unassigned students. This process should take about five hours for a principal to complete and about 10 to 20 minutes for each teacher to complete.

In another paper, Graham, Watson, and Thorn (2012) describe a promising practice that uses other data sources, such as student learning objectives, formative and interim assessment data, and data from gradebooks or other performance-tracking systems to serve as an alternative form of roster verification. These data have already been collected and can be efficiently used to help

ensure that rosters are up-to-date and accurate. Many assessment systems capture who assigns or administers assessments and the subject area of the assessment. Thus, looking at who took a given formative assessment can provide information about the class roster, the subject area of the teacher's course, course assignments, and, in some cases, the presence of shared instruction. Using these data sources, however, has its own limitations. Most important, these data sources only signal discrepancies in data; additional action is needed to update or verify data in data systems used for the compensation system.

Payroll

Although little research and few examples exist in this area, LEAs will want to consider how new compensation systems will impact the role of the payroll administrators. These administrators are charged with calculating how much compensation educators will receive. Because new compensation systems can require fundamental shifts in payroll practices to effectively implement the new system, careful consideration of how to support payroll administrators is warranted.

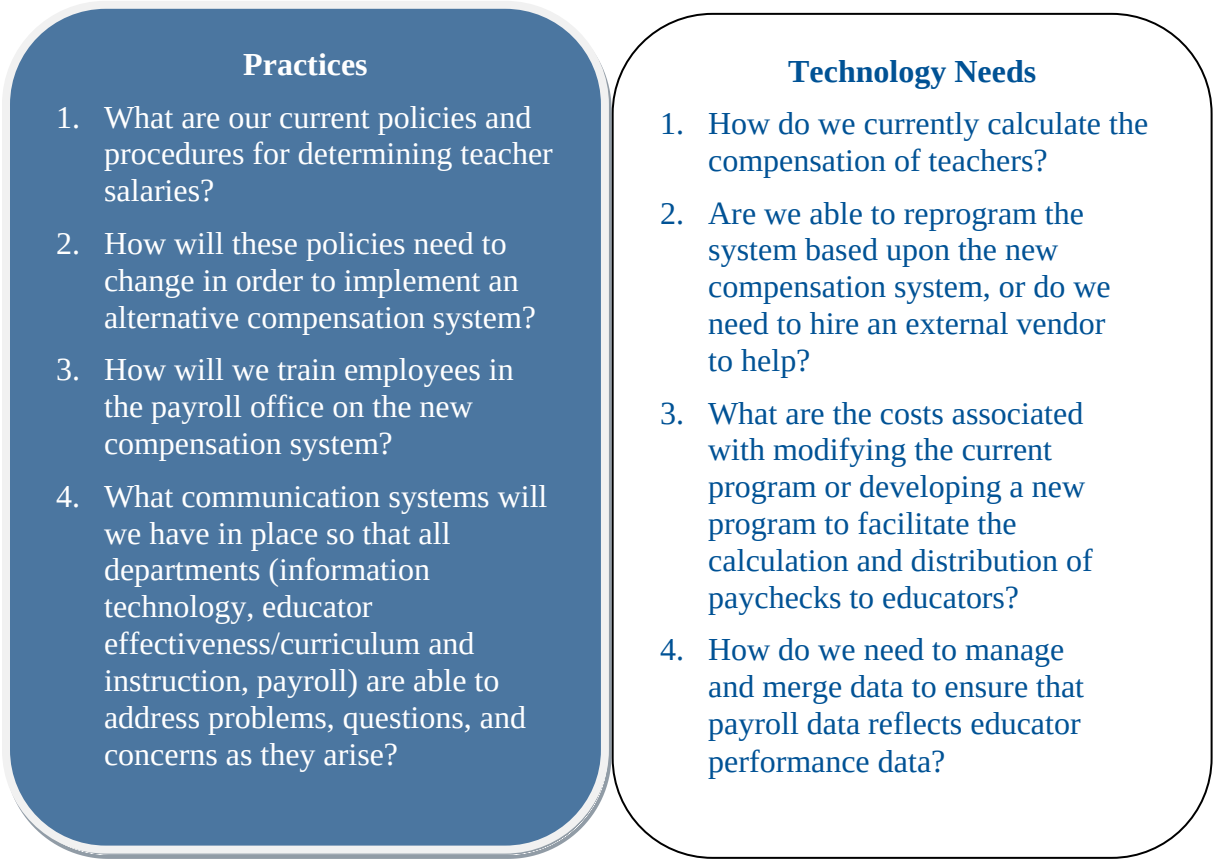
Payroll administrators will need extensive training in the new compensation system. They will need to understand how much to pay teachers, when to pay them, and how to look for and resolve potential glitches. New payroll procedures may need to be developed, and new technology may be needed to calculate teachers' payments. For example, Denver Public Schools developed a salary calculator. This tool enabled payroll staff to determine the amount of compensation teachers were to receive in a given month based upon his or her position(s), school assignment(s), and eligibility for monetary incentives. Initially, the calculator's functionality was dependent upon manual input from staff; over time, the district created a more automated system that was able to retrieve information needed to calculate pay from various databases (Proctor, Walters, Reichardt, Goldhaber, & Walch, 2011).

Including time in the distribution timeline for quality control before distribution of payments also may be necessary. For example, after the district experienced data management issues during the first year of implementation of its Teacher Incentive Fund program, program staff and district officials from Prince George's County Public Schools in Maryland, met with two representatives from the teacher's union on a weekly basis prior to distributing compensation to ensure that all calculations were correct (Malen et al., 2011). In addition to providing internal checks, LEAs may want to enable teachers and administrators to review their changes in compensation each summer prior to the new school year. This review process serves as a quality check to ensure that information entered into the payroll system is accurate and reflective of the teacher's evaluation.

Clear communication regarding paychecks is also important. LEAs need to ensure that teachers and administrators understand their eligibility for compensation, the compensation they should expect to receive, and when they will receive their compensation. Otherwise, teachers may become frustrated or confused with the payroll process. In Prince George's County teachers expressed frustration about the lack of communication from the district regarding when they would receive their incentive payouts (Malen, 2011). In Denver Public Schools, teachers reported being confused about their paycheck stubs and the labels for various component labels, especially since their compensation varied month to month. Teachers requested clearer explanations of paycheck information (Proctor et al., 2011).

Figure 2 provides guiding questions for LEAs to think about as they consider how alternative compensation will impact their payroll processes.

Figure 2. Guiding Questions for Assessing Current Payroll Practices and Future Needs



Conclusion

To effectively implement alternative compensation systems, LEAs need sufficient capacity to meet the data, technology, and payroll needs associated with the new systems. Current data systems, information technology, and payroll practices may be able to support the proposed changes in practice. If not, additional investments may be required.

Conducting a needs assessment early on can help LEAs anticipate potential administrative challenges associated with the new compensation system. In addition to the questions provided in this document, Appendix A offers a list of guiding questions to help LEAs identify their current capabilities and anticipate their future needs. In addition, LEAs should involve stakeholders from the district's data office, information technology department, and payroll offices during the planning stages to develop common understanding of needs moving forward. Early and ongoing collaboration between different district offices can help support the transition from an old compensation structure to a new alternative compensation system.

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Appendix A: Guiding Questions for LEAs[2]

Questions Pertaining to Data and Information Technology

1. Have we included information technology staff in our planning to date? If not, will district leaders support the creation of cross-functional teams?
2. What data do we currently collect, and what additional data are needed?
3. Where are the data currently stored?
4. Do we have processes already developed to merge data from multiple systems, or do we need to develop them?
5. Where will we store data used to inform compensation?
6. How will we enable users to access data that is relevant to their needs?
7. Do we have a data dictionary in place that contains information about the data; their relationship to other data; and their origin, usage, and format?
8. Are data available at the appropriate level of specificity?
9. Can we link teachers to students?
10. Do we have rules or guidelines for linking teachers to students in unique circumstances, such as team teaching, regrouping, push-in/pull-out instruction, or student mobility?
11. Have we tested the data quality system prior to implementation?
12. Do we have sufficient quality controls and verification processes that educators trust the system to deliver fair and accurate results?
13. Have we allocated time to review data, perform quality checks, and address issues prior to issuing paychecks to educators?
14. Will we have the flexibility to revise our data systems as needed, or will we have to go through a vendor?
15. Do we have the capacity to collect and analyze all the data, or will we need to contract out some of these tasks?

Questions Specific to Defining Teacher of Record

1. What should the specified proportion (or minimum threshold) of instruction time be to qualify an individual as a teacher of record for the subject/course?
2. Should the measure be classroom instruction time in days or percentages?
3. How does this proportion change if multiple teachers are tracked as the teacher of record for each student?
4. What if no teacher is responsible for more than the specified proportion for a student?

Source: Data Quality Campaign, 2010

[2] Some of the questions that appear here are modified from the implementation checklist published by the Center for Educator Compensation Reform (2011).

Questions Pertaining to Payroll

1. Have members of the payroll office been included in conversations about alternative compensation to date? If not, will district leaders support the creation of cross-functional teams?
2. What are the relevant deadlines, timelines, and schedules related to the current payroll system?
3. How is the current payroll system structured?
4. How will the new alternative compensation system differ from the current system?
5. Will current technology accommodate this new payroll structure, or will we need to develop a new automated system?
6. Does the alternative compensation system require more calculations or attention to detail? Will we need additional staff, either full-time or temporary, to assist with payroll?
7. What process does payroll currently follow when the office notices a discrepancy or issue?
8. What feedback loops and communication structures will we need to ensure the accurate calculation and dissemination of payment?
9. What information will the payroll office need about the alternative compensation system?
10. How will we train staff members in the payroll office on the new system?
11. Who will be responsible for developing any new procedures associated with payroll?

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