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## Compensation Structures and System Design

### Step System, Banding, and Broadbanding

A step system increases salary in fixed increments based on years of experience, often with additional lanes for degree attainment. A banded system, by contrast, places employees within salary ranges defined by minimums and maximums, allowing for more flexibility in placement. Broadbanding extends this concept further by widening those ranges, sometimes collapsing multiple bands into one large range.

In theory, these systems represent very different approaches to compensation. In practice, many of them behave similarly. Even in banded or broadband systems, placement within the range is often driven primarily by experience. The terminology changes, but the underlying structure frequently remains intact.

### Range, Midpoint, and Range Spread

A salary range defines the minimum and maximum pay for a role or band. The midpoint represents the center of that range and is often used as a target for a fully proficient employee. Range spread describes the percentage difference between the minimum and maximum, indicating how much growth is expected within a role.

These concepts form the backbone of banded systems. When actively managed, they provide a clear framework for progression and differentiation. When left unmanaged, they tend to lose meaning as employees cluster unpredictably within the range.

### Range Penetration and Compa-Ratio

Range penetration measures where an employee's salary falls between the minimum and maximum of a range, expressed as a percentage. Compa-ratio compares an employee's salary directly to the midpoint, with 1.0 indicating alignment with the midpoint.

These tools are widely used in banded systems to assess positioning. They offer a quick way to understand whether an employee is early, mid, or late in their progression. However, they are only useful if the underlying ranges and midpoints are actively maintained.

### Progression and Overlap

Progression describes how employees move through a salary range over time, whether based on experience, performance, or a combination of both. Overlap occurs when adjacent salary bands intersect, allowing experienced employees in one band to earn more than less experienced employees in the next.

Both concepts are intentional features of banded systems. Progression provides a path for growth, while overlap introduces flexibility. Without clear guidelines, however, both can contribute to confusion and inconsistency.

## **Market and Equity Concepts**

### **Market Positioning and Cohort Benchmarking**

Market positioning refers to where a school's salaries fall relative to external benchmarks, often expressed as a percentile. Cohort benchmarking compares salaries against a defined peer group, such as regional schools or national datasets.

These concepts help schools understand competitiveness. They also introduce complexity, as different cohorts can produce very different conclusions. A school may appear well-positioned in one comparison and under-market in another.

### **Internal Equity and Compression**

Internal equity refers to the fairness of salary relationships within a school, particularly among employees with similar roles and experience. Compression occurs when salary differences between experience levels are smaller than expected, often most visible in mid-career ranges.

These issues tend to emerge over time rather than by design. They reflect the cumulative impact of decisions made under different conditions and priorities. Addressing them requires both analysis and intentional correction.

### **Compression Ratio**

Compression ratio, sometimes referred to as range spread in practice, measures the relationship between the lowest and highest salaries within a role or group. It provides a quick sense of how tightly salaries are clustered.

This metric helps quantify what is often felt intuitively. A low ratio signals compression, while a higher ratio indicates greater differentiation across experience levels.

## **Data and Analytical Concepts**

### **Regression Analysis and R-Squared ( $R^2$ )**

Regression analysis is a statistical method used to understand how different factors influence salary. In compensation studies, it is typically used to measure how much of salary variation is explained by variables such as years of experience, degree attainment, or role. R-squared measures how well the model explains that variation, with higher values indicating stronger alignment.

Together, these tools move analysis beyond anecdote. They provide a clear view of what is actually driving pay and how consistent the system is in practice.

### **Statistical Significance**

Statistical significance assesses whether a relationship observed in the data is likely to be real rather than due to chance. In compensation analysis, it is often used to evaluate whether factors such as degree or gender have a meaningful impact on salary.

A factor may appear important, but without statistical significance, it cannot be reliably distinguished from noise. This distinction is critical when interpreting results and making decisions.

### **Predicted Salary, Actual Salary, and Outliers**

Predicted salary is what a model estimates an employee should earn based on factors such as experience and degree. Actual salary is what the employee is paid. The difference between the two highlights gaps in the system. Outliers are cases where this gap is especially large.

These concepts are essential for diagnosing system behavior. They reveal where compensation aligns with expectations and where it has drifted due to exceptions or historical decisions.

### **Normalization (FTE Normalization)**

Normalization adjusts salaries to a common basis, typically a full-time equivalent of 1.0 FTE. This allows for accurate comparisons across employees who may have different workloads or contract structures.

Without normalization, analysis can be misleading. It ensures that differences in salary reflect actual pay levels rather than differences in hours or assignments.

## **Advanced Patterns and System Behavior**

### **Piecewise Structure**

A piecewise structure describes a compensation system that behaves differently across segments of experience. For example, salaries may grow quickly early in a career, flatten in mid-career, and then increase again later.

These patterns are rarely designed intentionally. They emerge over time as adjustments are layered onto an existing structure. Recognizing them helps explain why certain parts of the salary scale feel inconsistent or compressed.

### **Heteroscedasticity**

Heteroscedasticity refers to a pattern in which salary variability changes across experience levels. Early-career salaries are often tightly clustered, while later-career salaries show greater spread.

This pattern is common in independent school compensation systems. It reflects the increasing influence of individual decisions, role changes, and market adjustments over time. It also highlights where a system is most consistent and where it becomes more flexible or unpredictable.

### **Drift**

Drift describes the gradual movement of a compensation system away from its original design. Over time, individual decisions, market pressures, and internal adjustments create deviations from the intended structure.

Drift is almost inevitable without regular review. It explains why systems that once appeared clean and consistent become more complex and harder to interpret.