



The CCEE Heart Monitor

A New Integrated System for Monitoring Structural
and Process Quality in Early Education

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Our Field Has a Disconnected View of Quality

For decades, we have measured Child Care and Early Education (CCEE) quality using **separate and distinct tools**, creating a fragmented picture.

Structural Quality



Measured by licensing inspectors.
Focuses on health and safety compliance.

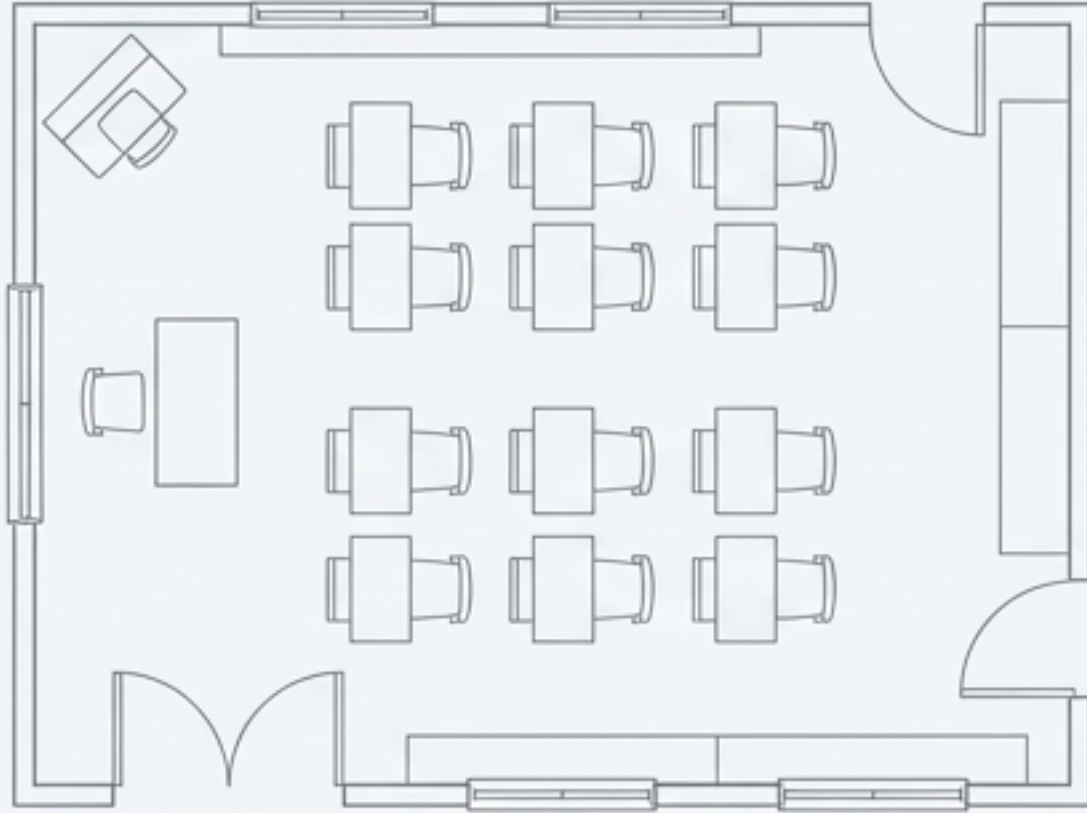


Process Quality



Measured by quality observers.
Focuses on the “magic” of interactions.

We Measure the Framework, But We Miss the Heartbeat



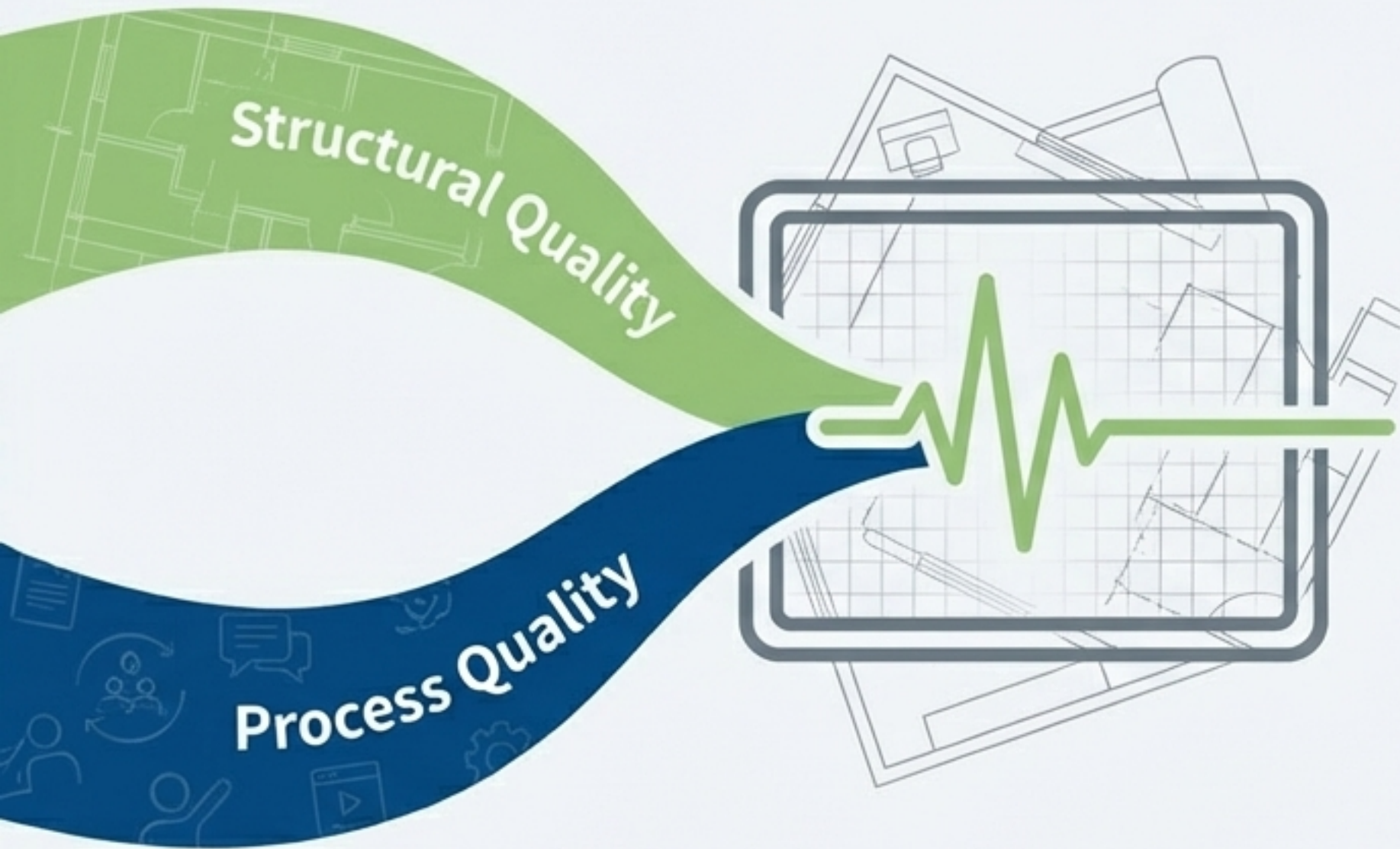
Structural quality—staff-child ratios, group sizes, safety rules—is the essential framework that protects children.



But process quality—the rich interactions between staff and children—is the ‘heart’ of the program. It’s the ‘dance’ where development truly happens.

“All the structural quality rules and regulations are important in protecting children and keeping them healthy but the interaction of child and adult is where the action occurs.”

The CCEE Heart Monitor: A Unified System to See Program Health



The CCEE Heart Monitor (CCEEHM) is a new integrated monitoring system that assesses both structural and process quality on one platform. It places the measurement of process quality squarely within the structural measurement strategy, providing a complete and dynamic picture of a program's health.

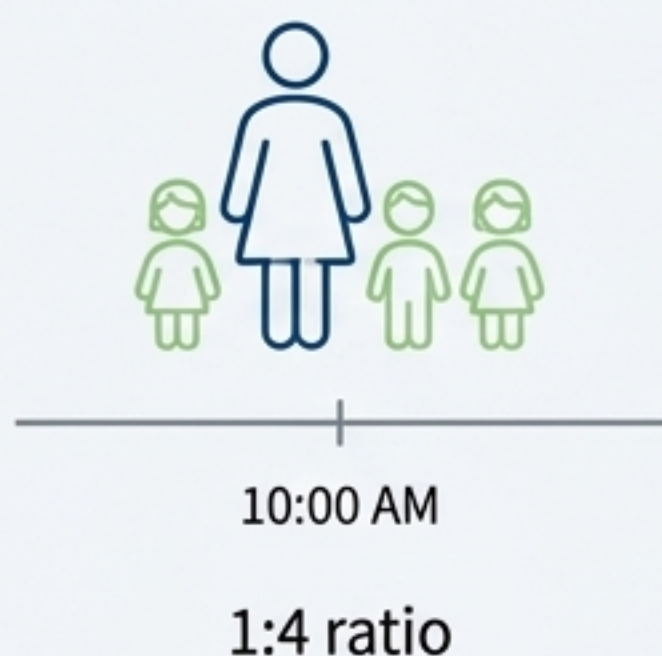
Key Features

- ✓ Integrates structural and process quality.
- ✓ Built on the Contact Hour (CH) metric and Key Indicator Methodology (KIM).
- ✓ Delivered through a user-friendly software application.
- ✓ For use by staff, licensors, and quality assessors.

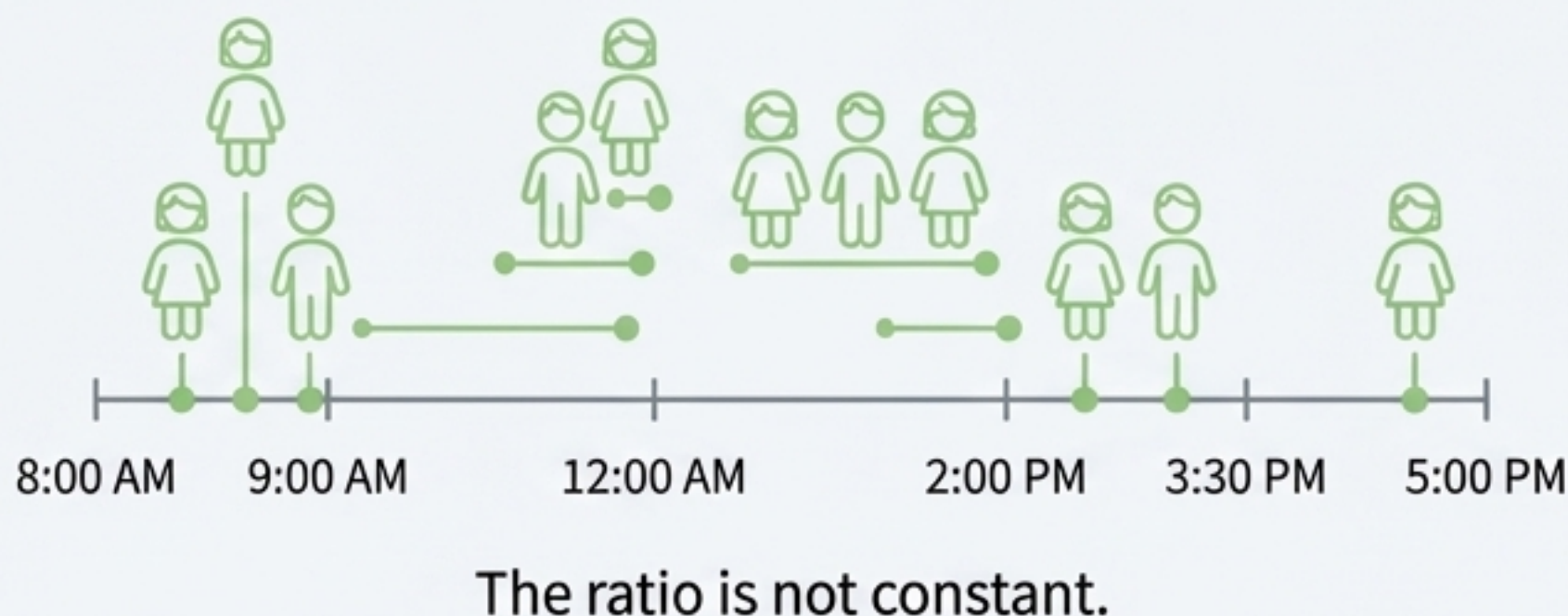
The Foundation: Replacing Static Ratios with the Dynamic Contact Hour (CH) Metric

Traditional adult-child ratios and group size measurements are static snapshots. The Contact Hour (CH) metric is a more effective and efficient measurement because it incorporates the dimension of **time**, capturing the flow of children and staff throughout the day.

Static Snapshot



Dynamic Flow



How it Works

The CH metric calculates the total exposure time of adults with children. A higher CH value can correlate with increased non-compliance with adult-child ratios.

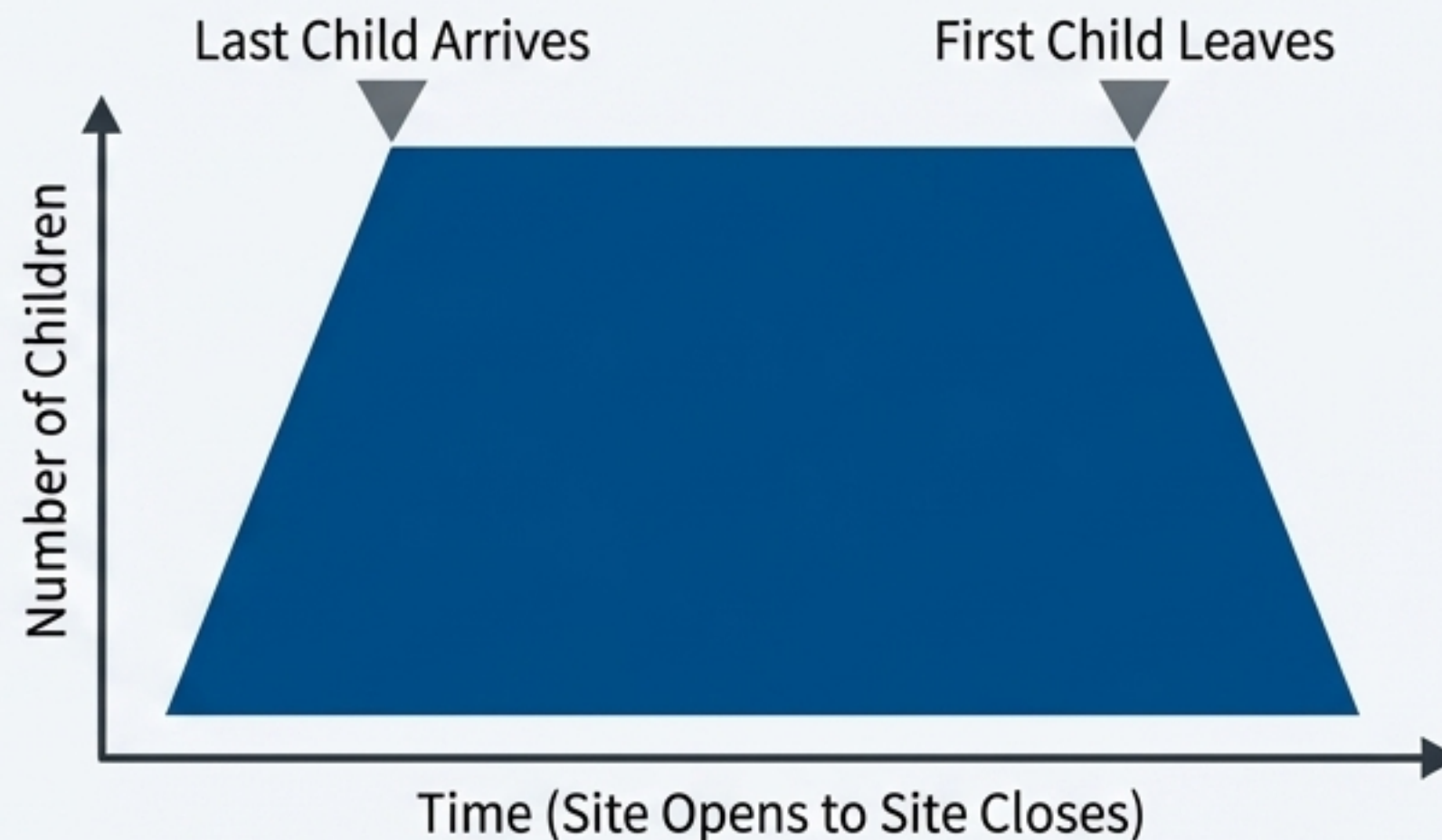
Calculating the Contact Hour is Simple

The entire CH calculation is based on the answers to six straightforward questions about a specific classroom or group.

The 6 Questions

1. First teaching staff arrival time?
2. Last teaching staff leave time?
3. Number of teaching/caregiving staff?
4. Number of children on maximum enrollment day?
5. Last child arrival time?
6. First child leave time?

The Trapezoidal Model



These 6 inputs create a model representing the daily density of the program. The area of this shape determines the Contact Hours and compliance with ratio standards.

The Shape of the Day Reveals Program Density and Compliance

The relationship between when children arrive and leave changes the shape of the CH model. Each shape tells a different story about the program's operation and compliance.



1. Triangle Shape: Lowest CH.

Unlikely scenario where full enrollment is a single point in time.



2. Trapezoid Shape: Most likely scenario.

Children gradually arrive and leave, with a period of full enrollment.



3. Square/Rectangle Shape: The efficiency benchmark.

All children arrive and leave at the same time.



4. Tall Rectangle Shape: High CH.

Indicates non-compliance with adult-child ratios and group size—the key issue the CH metric was designed to identify.

The “Heartbeat”: Measuring Process Quality with 10 Validated Indicators (PQI)



The Contact Hour metric provides the structural baseline. The Program Quality Indicators (PQI) measure the interactions, curriculum, and environment—the true ‘process quality.’ These 10 indicators were drawn from decades of key indicator studies and validated in a study in Saskatchewan.

Key Idea: The PQIs move the CCEEHM from an absolute value (in or out of compliance) to a relative one that captures the nuances of quality.

A Comprehensive Look at Program Quality

The 10 PQIs are grouped into three core domains of early childhood education quality.

Staffing & Program



- 1. ECE III Educators (AA/BA Level)
- 2. Stimulating and Dynamic Environment
- 3. Developmentally Appropriate Curriculum

Family & Community Partnership



- 4. Opportunities for Staff & Families to Engage
- 5. Regular Information on Child's Progress

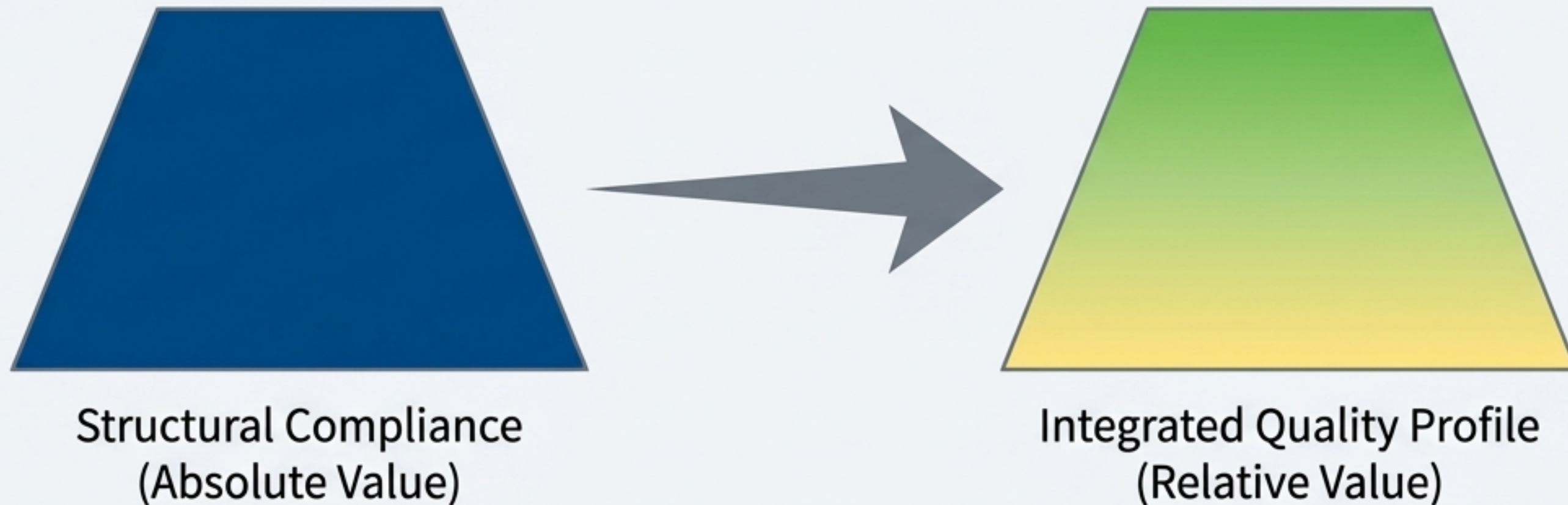
Classroom Interactions (Observation)



- 6. Encouraging Communication (Preschool)
- 7. Infant/Toddler Conversation & Questioning
- 8. Using Language for Reasoning Skills (Preschool)
- 9. Educators Listen Attentively
- 10. Educators Speak Warmly to Children

The Intersection: Creating a Complete Picture of Program Health

The CCEEHM integrates the structural CH metric with the process PQI scores. This transforms the compliance model. A program's CH trapezoid is no longer just a measure of capacity; it becomes a canvas filled with data on the quality of interactions happening every hour.



We can now see not only *if* a program is compliant with ratios, but *how* high-quality the interactions are within those hours.

The Future of Observation: Powering the PQI with Artificial Intelligence

To fill the CH model with rich PQI data would require thousands of human observations, which is unrealistic. AI makes this possible.

How it Works



Observation

Video cameras in classrooms allow AI to observe interactions continuously.



Training

The AI is trained on what constitutes various quality levels for each PQI, similar to training human observers for inter-rater reliability.



Analysis

The AI provides summary measurements on an hourly basis, feeding directly into the CCEEHM.

Key Benefits



Scalability: Allows for constant, comprehensive observation.



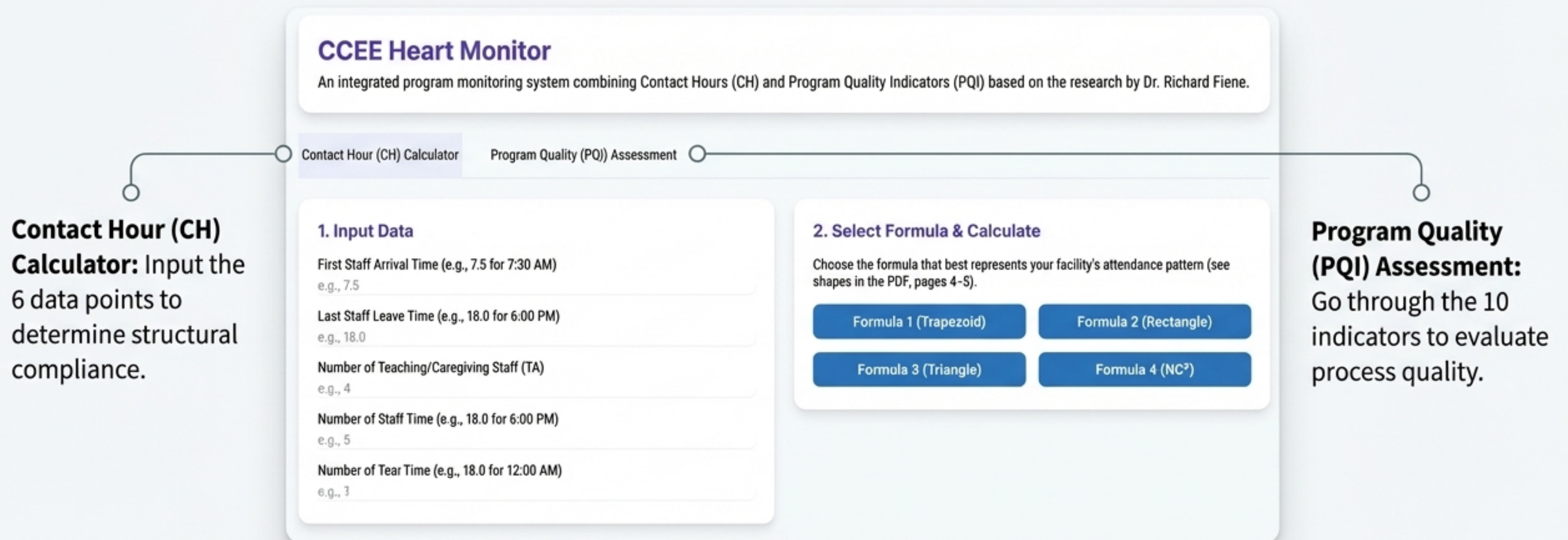
Objectivity: Reduces issues of human bias in observing and decision-making.



Consistency: AI observers have less 'drift' over time than human observers.

From Theory to Tool: The CCEE Heart Monitor App

The CCEE Heart Monitor is an intuitive software application that performs all scoring and calculations. Assessors can use it manually, or it can be integrated with AI observation systems. It provides real-time results for both the Contact Hour metric and the Program Quality Indicators.



A More Effective, Efficient, and Holistic Approach to Quality

The CCEEHM offers significant advantages over traditional, fragmented monitoring systems.



Unified

Provides a single, integrated view of structural and process quality.



Cost-Effective & Efficient

Based on the proven Key Indicator Methodology and delivered in a simple app.



Objective & Reliable

AI-powered observation enhances consistency and reduces bias.



Comprehensive

Delivers a true, holistic picture of a program's daily health and quality.

A New Paradigm for CCEE Monitoring and Improvement



The CCEE Heart Monitor is more than a new tool—it's a paradigm shift. By providing an integrated, dynamic, and nuanced view of program quality, it moves the field beyond simple compliance checking. It offers the data and insights necessary to support genuine, continuous quality improvement, ultimately helping us better understand and enhance the daily experiences of children.