# Signal to Strategy

A field guide to engagement scoring, predictive modeling, and their use in adaptive enrollment management.

## Quickstart for scoring and modeling in Slate

Define the outcome or decision, such as application starts, outreach priorities, or yield planning. Select a manageable set of behaviors and decide how staff will use the result.

Prototype scoring formulas and weights in Excel. Use Slate configurable-join queries to aggregate behaviors where appropriate, and confirm how fields, imports, Deliver, and portals fit your instance's workflow.

Compare results with historical outcomes and look for gaps before automating. Set up a repeatable update process, document it, and use translation codes or plain-language labels where helpful. Start small, test assumptions, and avoid overfitting.

## Scoring / What engagement scoring is

Engagement scoring translates student behavior into a shared signal that helps teams prioritize, plan, and respond. It is not a measure of a student's worth, a prediction of outcomes, or a replacement for human judgment.

A useful score is designed around institutional values, access, and goals. Make the rubric explainable, open to questions, and adjustable.

## Scoring / Choosing behaviors

Start with one question: which actions suggest meaningful interest? Favor behaviors that involve choice, effort, or sustained engagement rather than simply counting everything available.

Attending a campus event, returning for events on different days, and starting an application may provide useful signals. Travel distance can add context, but does not isolate effort on its own. Access, resources, and other constraints can affect what a student is able to do.

Choose a manageable set of behaviors. Look for actions the student chooses, patterns over time, and signals relevant to your goals. More data does not automatically produce better insight.

## Scoring / Weights caps and rubrics

Document how the rubric assigns weights, caps repeated behaviors to limit inflation, and groups signals into subscores and totals. Use translation codes or plain-language labels so staff can interpret the result.

Opening an email, attending an event, and starting an application need not receive equal weight. Caps keep a single repeated behavior from dominating the score. Keep the first rubric simple enough to explain, test, and adjust.

## Scoring / Bonuses and balance

Students do not all engage in the same ways. Consider opportunity, access, and context when designing bonuses. Relevant context may include travel barriers, varied engagement types, timing, momentum, or sustained effort.

The aim is to avoid disadvantaging students through the design of the rubric, not to inflate scores. Document each bonus and its rationale, then check how the rubric behaves across relevant groups. Intentional design still needs validation.

## Scoring / Staff buy in

Involve the people who will use the score. Staff can explain which behaviors matter in practice, which do not, and what the data misses.

Explain how the score is built and why. Invite questions and make room for adjustment. A shared rubric should support staff judgment and give people a practical reason to trust and use it.

## Scoring / Validating in Excel

Before automating, apply the proposed rubric to historical data in Excel. Compare scores with actual outcomes such as applications, admissions, or enrollment. Look for useful signals rather than perfect agreement.

Ask whether higher engagement generally aligns with the outcomes of interest. Examine gaps, surprises, and unintended patterns. Adjust the rubric and test again. Historical alignment is a check on usefulness, not proof of future performance.

## Scoring / From score to strategy

Use scores to guide outreach priorities, targeted nudges, and staff focus. The number becomes useful when it helps the team choose a next step.

Scores inform decisions rather than making them. Keep priorities clear, review how staff use the result, and adjust when the score creates noise or becomes an ignored field. The goal is a repeatable practice that helps people act.

## Modeling / What predictive modeling is

Predictive modeling estimates the likelihood of a defined outcome. It answers how likely an outcome may be, not what will certainly happen.

Models can help teams plan, prioritize, and prepare when resources are limited. They do not replace professional judgment or determine a student's future.

## Modeling / Outcomes over opinions

Models learn from historical examples with known outcomes, such as whether a student applied, enrolled, or persisted. Define the outcome before deciding which data to use.

Engagement scoring summarizes selected behaviors. Predictive modeling estimates relationships between available inputs and an outcome. Those relationships do not by themselves establish cause and effect.

## Modeling / Probabilities not promises

A result such as 60%, 25%, or 82% represents an estimated likelihood. These numbers are examples, not measured performance claims.

Use probabilities to compare risk and opportunity and support priorities. Avoid treating them as guarantees about individuals. Clear explanation of uncertainty helps preserve trust.

## Modeling / How models work

Inputs can include behaviors, attributes, timing, and history. A model learns patterns in historical data and produces an estimate tied to a particular outcome.

Results depend on data quality, feature engineering, and how well historical records represent the records being scored. Models may detect patterns people miss, but complexity alone does not make a model useful.

You do not need to build every part of the model yourself to use it responsibly. You do need to understand its intended output, limitations, and place in the decision process.

## Modeling / Feature engineering

Counts alone rarely tell the full story. Useful features may describe time between actions, relationships between event behaviors, and sustained engagement.

Choose inputs that help answer the actual question. Features may suggest intent, but should not be treated as direct proof of a person's motivation. Review whether each feature adds useful information or noise.

## Modeling / Accuracy bias and guardrails

A model can appear accurate overall and still cause harm. Historical data reflects historical systems, including their limitations and inequities.

Review outputs, test performance across relevant subgroups, and set limits on use. Revisit those checks as data and circumstances change. Ethical review belongs in the work from the start.

## Modeling / When to model

Modeling may help with later-funnel planning, resource allocation, and forecasting when an estimated outcome is useful. A transparent scoring rubric may be sufficient for early engagement or exploration.

Choose the method that fits the decision and available evidence. A need for probability estimates does not remove the need for explanation, review, and appropriate safeguards.

## Modeling / From models to practice

Connect estimates to dashboards, translation codes, outreach, and other tools the team actually uses. Planning, targeting, and intervention design are possible applications.

Use the model where its output fits the strategy. Check trends against other evidence before committing to action. Clear interpretation and a defined workflow help turn an estimate into useful practice.

## Practice / Two tools one system

Engagement scores highlight selected behaviors; predictive models estimate likelihood. Use them together when they answer different parts of the same planning question. Both support decisions rather than replacing them.

## Practice / TARGET

Tuition Aid and Recruitment Goals Estimation Tool. Connect individual enrollment estimates to planning assumptions for class size, net tuition revenue, discount rate, and financial aid. Treat projections as assumptions to review, with boundaries for action rather than rigid rules.

## Practice / CRAFTing

Customized Recruitment Actions using Forecasting and Targeting. Use scoring and modeling to inform recruitment choices. Test segments, interventions, and tradeoffs, then adjust as evidence and circumstances change.

## Practice / NUDGE

Nurturing User Decisions with Guided Engagement. Connect insight to timely outreach. Consider engagement, estimated likelihood, and relevant model factors when shaping messages, while keeping student needs and judgment in the process.

## Practice / BEACON

Behavioral and Ecospherical Analytics for Conversion Optimization and Navigation. Use insight to guide messaging and marketing. Align communication with the audience and context rather than simply increasing its volume.

## Practice / GPS

Guided Prioritization Strategy. Use insight to decide where staff attention, time, travel, and outreach may be most useful. Review priorities so limited resources do not become an excuse to overlook students.

## Practice / SCOUT

Strategic Community Outreach and University Travel. Use feedback to adapt recruitment events, search efforts, and territories. Review what the strategy is learning and adjust deliberately.

## Practice / THRIVE

Targeted Human-centered Resources and Intervention for Vital Empowerment. Extend insight beyond admission into student support. Use risk and momentum as prompts for thoughtful intervention rather than fixed labels.

## Practice / Adaptive enrollment management

Tools are a starting point. Values, intent, and the way people use the results determine their contribution. Keep reviewing the work and refining it as needs change.