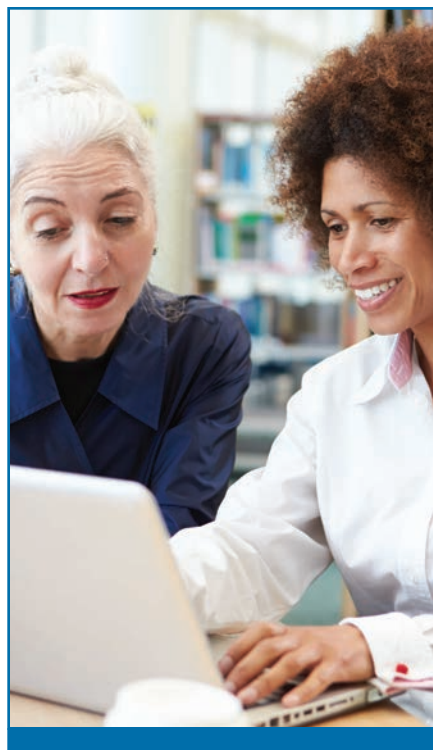


Logic Models for Selecting, Designing, and Implementing Evidence-Based School Leadership Interventions

Companion Guide to
School Leadership Interventions Under the Every Student Succeeds Act

LINDSAY DAUGHERTY, REBECCA HERMAN, AND FATIH UNLU



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Preface

The reauthorization of the U.S. Elementary and Secondary Education Act, referred to as the Every Student Succeeds Act (ESSA), emphasizes evidence-based initiatives while providing new flexibilities to states and districts with regard to the use of federal funds, including funds to promote effective school leadership. To support education decision makers, the RAND Corporation conducted a synthesis of the evidence base on school leadership interventions, *School Leadership Interventions Under the Every Student Succeeds Act: Evidence Review*. The current tool, *Logic Models for Selecting, Designing, and Implementing Evidence-Based School Leadership Interventions*, expands on the evidence review by describing each of the six types of school leadership interventions and unpacking the relationship between the intervention type and student outcomes, showing the key steps through logic model. It should serve as a useful tool to help state and district policymakers to design, implement, and evaluate evidence-based school leadership interventions.

The research required to develop both the review and the current tool was conducted by RAND Education, with support from the Wallace Foundation. We are grateful to staff of the Wallace Foundation who provided funding for the project and input on the report. Specifically, we appreciate the probing questions and insights from Ed Pauly, Jody Spiro, Jessica Schwartz, and Pam Mendels. The Wallace Foundation is committed to improving school leadership through better training, hiring, support, and evaluation of principals. For more than a decade, it has invested in research, initiatives, and evaluations to improve school and district leadership and contribute to an evidence base in this area. We also appreciate the thoughtful input from leadership experts and peer reviewers, including Gina Ikemoto, Jason Grissom, Susanna Loeb, Tracey Weinstein, Ayesha Hashim, Katie Drucker, Glenn Pethel, Mikel Royal, Marina Colfield, J Evelyn Bonner-Reed, Susan Gates, Stephani Wrabel, and Ben Master. Finally, we thank Chandra Garber, Rachel Ross, Emilio Chavez-Herrerias, Aziza Arifkhanova, and Andiy Bega for their help in creating this document.

Introduction

Why focus on school leadership?

Research indicates that principals play a critical role in the educational achievement of students (Branch, Hanushek, and Rivkin, 2012; Grissom, Kalogrides, and Loeb, 2015; Leithwood et al., 2004). Principals also play a role in driving key teacher outcomes (Boyd et al., 2011; Grissom, 2011; Ladd, 2011; Loeb, Kalogrides, and Bêteille, 2012). Based on this evidence, states and districts have made efforts to build leadership capacity, a key element of many educational reforms.

Whom is this guide for?

This guide is for state and district policymakers, as well as organizations involved in the design and delivery of leadership interventions.

Why use this guide?

The Every Student Succeeds Act (ESSA) provides avenues for funding leadership interventions, and ESSA requires that funded interventions be evidence-based.¹ According to ESSA, the minimum standards for an evidence-based intervention are that the intervention should be represented by a logic model, which (as defined in the U.S. Department of Education’s nonregulatory guidance to ESSA) presents “a well-specified conceptual framework that identifies key components of the proposed process, product, strategy, or practice (i.e., the active ‘ingredients’ that are hypothesized to be

critical to achieving the relevant outcomes) and describes the relationships among the key components and outcomes, theoretically and operationally” (U.S. Department of Education, 2016). This is not only the law; it also makes sense. To maximize the impact of educational investments, education policymakers should have a clear vision of how an investment is expected to change education practices and lead to better student outcomes. Unfortunately, until now, education policymakers have not had a resource that systematically shows the path from investment to impact for school leadership improvement interventions.

To support states and districts in identifying the evidence base for school leadership interventions, we have produced a series of logic models that present key components of six types of school leadership interventions, and the ways in which these components are expected to lead to better student outcomes. State and district education policymakers, as well as intervention designers and implementers, can use this guide to

- understand the theory behind various ways in which leadership intervention types work to improve student outcomes
- identify the key components of evidence-based programs to inform the design, adoption, or refinement of aligned interventions
- develop or refine logic models and evaluation measures.

What is in this guide?

This document presents a step-by-step guide for understanding how logic models work and how such models can describe common school leadership interventions to establish an evidence-based theory of change. The guide is organized into the following sections:

“Road Map” to Logic Model Components: We start with a “road map” that discusses the various aspects of a logic model and describes how the sections of the guide can be used to build logic models.

¹ ESSA defines four tiers of evidence, in order of rigor, for judging whether an activity is evidence-based. While the first three tiers describe required levels of evidence for impact, tier IV instead requires a research-based rationale that the intervention will have the desired impact, coupled with ongoing evaluation of the intervention to build an evidence base on the impact of that intervention. The companion report to this tool, *School Leadership Interventions Under the Every Student Succeeds Act: Evidence Review: Updated and Expanded*, provides a more thorough discussion of ESSA requirements and a detailed review of studies and programs that currently meet these evidence requirements.

Six Types of Leadership Interventions and the Problems They Address:

Next, we briefly review six common types of school leadership interventions: principal preparation programs; strategic staff management (recruitment, selection, and placement); professional learning; leader evaluation; working conditions; and school improvement. We also describe the problem each intervention type intends to address. This is an important step, as different types of school leadership interventions address different challenges, and selecting the right intervention will depend on where in the educational system problems are arising.

The Link from Leadership Interventions to Student Outcomes: In this section, we provide an illustration of the way that leadership interventions commonly work to improve outcomes, specifically principal competencies, school-level outcomes, and finally student outcomes.

Logic Models: The next section presents individual logic models for each of the six intervention types, with a focus on activities and outputs. We describe promising practices and provide samples of indicators that can be used to evaluate whether interventions are being implemented as planned.

A Word About Resources: Finally, we address the issue of what resources may be needed for leadership interventions. In environments where resources are particularly constrained, it may be useful to identify available resources before selecting an intervention or developing a logic model to guide your approach.

Methods for creating logic models

To develop the six logic models, we used program documentation and research literature for specific leadership intervention programs to identify or develop program-specific logic models, and then aggregated these program-specific

logic models into logic models that describe the range of programs under an intervention type. We used the following four-step process:

- 1) *Identified programs for each intervention type:* First, we identified a set of programs we could analyze to build the logic models. We started with the list of programs that met ESSA evidence standards in Herman et al. (2017). We supplemented these programs with others highlighted in reviews of promising leadership programs (e.g., George W. Bush Institute), as well as those recommended by a panel of 12 experts, including six RAND researchers and six external experts in leadership. To include an intervention's information in this process, we required at least one peer-reviewed study with positive outcomes and/or public documentation of evidence-based theory.² We did not aim to identify every evidence-based program for our six intervention types, but we did aim to identify a sufficient number of programs to capture the range of approaches in an area. For example, we wanted to ensure that we had a variety of providers represented for principal preparation programs, including university providers, university/district partnerships, and alternative providers. We classified our lists of programs according to these key characteristics and continued to add programs until we had at least two programs of each preidentified category. The table on page 6 summarizes the total number of programs identified by intervention type.³

² We did not limit this analysis to the interventions found to meet ESSA evidence standards in *School Leadership Interventions Under the Every Student Succeeds Act*. Some programs did not have visual logic models that allowed them to meet Tier IV evidence standards, but did have sufficient description of theory in program documentation to create a logic model. It was important to cast a broad net so we would not systematically exclude promising types of interventions that have not yet been proven.

³ Many of the programs reviewed were implemented and evaluated in large urban school districts, and generalizability of these evidence-based practices to other settings is unknown. Further, information on the study settings and the target setting for interventions was not always available. Users should consider, as much as possible, whether a given intervention is well suited for and effective in a context like their own.

- 2) *Collected or developed program-specific logic models:* We searched public documentation to describe programs and develop program-specific logic models, including research studies, program websites, user manuals, and other public documentation available online. Programs without sufficient information to develop logic models were excluded. Total counts of logic models included 29 for principal preparation; 11 for professional learning; eight each for leader evaluation, working conditions, and school improvement; and three for strategic staff management.
- 3) *Aggregated program-specific logic models:* We identified the features of logic models across programs and determined which components were found across all programs and which components were found only in

some programs. We gathered additional information on implementation, outputs, and outcome measures to add detail to the logic models.

- 4) *Gathered expert feedback and refined logic models:* Internal leadership experts provided feedback on several drafts of each logic model, and the logic models were refined in response to this feedback.

Most of the information in the document comes from analysis of program data, with a few exceptions. RAND largely generated the sample output measures and resource questions, as opposed to drawing them from program materials.

Programs Reviewed by Intervention Type

	RAND ESSA Report	Other Literature	Expert Recommendation	Total
Principal preparation programs	9	7	13	29
Strategic staff management	2	1	0	3
Professional learning	5	2	4	11
Leader evaluation systems	2	4	2	8
Working conditions	3	4	1	8
School improvement	2	0	6	8

“Road Map” to Logic Model Components

On this page, we provide a “road map” to the different parts of a logic model, including what information we have developed for each component and how that information can be used to build or refine your own logic model.

Problem Statement

“What issue am I addressing?”

In this document, we describe each of our six intervention types according to the problem they aim to address (see pages 9 and 10).

How to use it: Use these problem statements to help you focus on logic models related to the types of interventions that most directly apply to your needs and priorities.

Resources

“What do I need?”

In this document, we identify a list of resource types and some questions about needed resources for states and districts to consider asking (see pages 36 and 37).

How to use it: When identifying an intervention and the primary activities, use our guiding questions to identify resources. *If sufficient resources are not available, consider other intervention types.*

Activities

“What do I do?”

In the logic models, we identify activities associated with each of the six categories of leadership interventions and report additional detail on how specific interventions we reviewed undertake these activities (see pages 12 to 35).

How to use it: Determine whether your current or future intervention has the activities commonly found in evidence-based programs.

Outputs

“What happens immediately?”

In the logic models, we identify outputs—or the immediate things that should happen if the intervention is implemented effectively—for each of the six intervention categories, and indicate possible indicators that can be used to measure implementation success (see pages 12 to 35).

How to use it: Identify the key outputs that you might want to examine and measure to determine whether the intervention is being implemented properly.

Outcomes

“What are my goals?”

In this document, we identify a number of common short-, medium-, and long-term outcomes for school leadership interventions (see page 11).

How to use it: Understand how leadership interventions work to achieve improved outcomes for students, identify the principal competencies the current or future intervention aims to affect, and align the design of the intervention with outcomes.

Additional considerations in using this guide

Logic modeling often works best when done backward. Many logic model guides suggest starting logic models at the end (outcomes) and moving backward (to resources), so we suggest using a similar approach.⁴ After identifying which intervention type(s) are best suited for the needs of your state or district, start by identifying the ultimate outcomes you aim to affect. Then identify which intermediate- and short-term outcomes are required to achieve the longer-term impacts. Next determine the primary activities that the intervention will consist of, and the immediate outputs associated with those activities. Finally, list the resources needed to carry out the activities, and determine whether these resources can be mobilized to ensure successful implementation.

Logic models may be integrated when describing interventions that include more than one intervention type. While we present separate logic models for each of our six intervention types, some interventions combine aspects from multiple intervention types into one integrated and coordinated

set of reforms. For these types of interventions, states and districts may find it useful to create an integrated logic model that covers the full range of intervention components to ensure that implementation and evaluation are coordinated across the full intervention. There may also be benefits to fleshing out the specifics of the reforms through separate logic models for intervention subcomponents. For example, the Wallace Pipeline Project requires districts to reform aspects of principal preparation, strategic staffing, and leader evaluation. In designing a logic model for this type of multifaceted reform, one might first develop individual logic models for each of the three subcomponents, to fully unpack the model change process, and then eventually aggregate them into one large, integrated logic model to promote continuity across the full initiative. Alternatively, the integrated logic model could be developed first, followed by creation of more-detailed breakouts of the three subcomponents as needed.

Logic models should not be static. As the outcomes of interest shift and the intervention activities are refined, the logic model should be updated to reflect the current state of the interventions.

⁴ Logic model design guidance in this document was informed by other logic model resources, including Funnell and Rogers, 2011; Wyatt Knowlton and Phillips, 2013; McLaughlin and Jordan, 1999; and Shakman and Rodriguez, 2015.

Understanding Different Leadership Intervention Types

Next we describe six types of leadership interventions. We define leadership interventions broadly to include any deliberate effort to systematically improve leadership capacity in schools by altering programs, practices, or policies. Interventions can include specialized programs that target certain groups of principals or districtwide/statewide practices that affect all principals. Interventions can be developed in-house by states and districts, purchased from external organizations, or developed collaboratively. Choosing the right intervention type(s) includes understanding where the challenges are in the current pipeline and state/district environment, identifying the areas of the pipeline and environment where policymakers have the leverage to make change, and ensuring that the intervention can be designed and implemented to meet the goals of the state/district. In some cases, multiple intervention types may be combined, to be implemented together (see previous section).

Principal Preparation Programs

Problem: Many states and districts struggle with a shortage of new principals who possess competencies needed for effective leadership. While attending training programs, principal candidates often do not receive academic coursework and clinical experiences that adequately prepare them for leadership positions in real life. After graduation, new principals often do not receive sufficient support and mentoring tailored to their individual needs to guide them in the first few years in leadership positions.

Intervention: Principal preparation programs aim to prepare current and aspiring educators to become principals through training that combines high-quality classroom instruction and some type of school-based internship. These programs can lead to an advanced degree or certification. They may be provided by universities, districts, or independent organizations, or some combination of the three.

Strategic Staff Management (Recruitment, Selection, and Placement)

Problem: Many states and districts struggle to hire leaders who possess the competencies needed for effective leadership. In addition, school leaders may not be assigned to schools in an optimal way. High-needs schools, in particular, struggle to attract and retain effective leaders and replace ineffective leaders.

Intervention: Strategic staff management includes activities to improve recruitment and selection processes and the assignment of principals to schools. Recruitment and retention interventions may include, for example, communication strategies to broaden the candidate pool or specialized processes and tools to screen and evaluate candidates (e.g., performance-based interview tasks). Interventions may also attempt to place effective principals into specific schools (based on need or on principal-school match) and/or replace ineffective principals.

Professional Learning

Problem: The ongoing training, support, and professional development offered to principals may fail to meet the needs of all principals, especially early-career principals and those placed in the most challenging schools. The amount of professional learning offered may be insufficient, the content of professional learning may not necessarily be aligned with principal or school needs, and/or the delivery of content may not be effective.

Intervention: Professional learning interventions aim to provide to principals more effective support that is closely aligned with principal needs. Professional learning can include workshops (single sessions or a series), professional learning communities, and coaching/mentoring. These opportunities may be available throughout a principal's career, although they often are most intensive early in his or her career.

Leader Evaluation Systems

Problem: Districts often have limited information on the competencies and effectiveness of their school leaders, and principals often receive inadequate feedback on their abilities and progress. This can limit the ability of individual leaders to engage in professional growth and limit the ability of districts to assess leadership capacity and target efforts to improve capacity through other leadership interventions.

Intervention: Leader evaluation systems are a set of processes, tools, and metrics designed to evaluate principals' strengths and needs—for either accountability or developmental purposes. In theory and policy, these systems should be aligned with rigorous leadership standards (e.g., state standards or the Professional Standards for Educational Leaders [National Policy Board for Educational Administration, 2015]); draw on multiple perspectives (e.g., the principal's supervisor, teachers); and incorporate different types of evidence (e.g., student-achievement data, observations, surveys).

Working Conditions

Problem: Potentially effective principals may not be achieving their full potential due to unclear expectations, lack of incentives, limited autonomy, bureaucratic central office processes, or insufficient support from supervisors and other departments.

Intervention: The intervention aims to affect one or more aspects of the school leaders' working conditions. Examples include—but are not limited to—providing incentives to recruit and retain school leaders, autonomy so leaders can make decisions typically made at the district level, redesign of principal supervisor roles to be more supportive of principals, and shifts in central office structures, processes, and culture in support of principals.

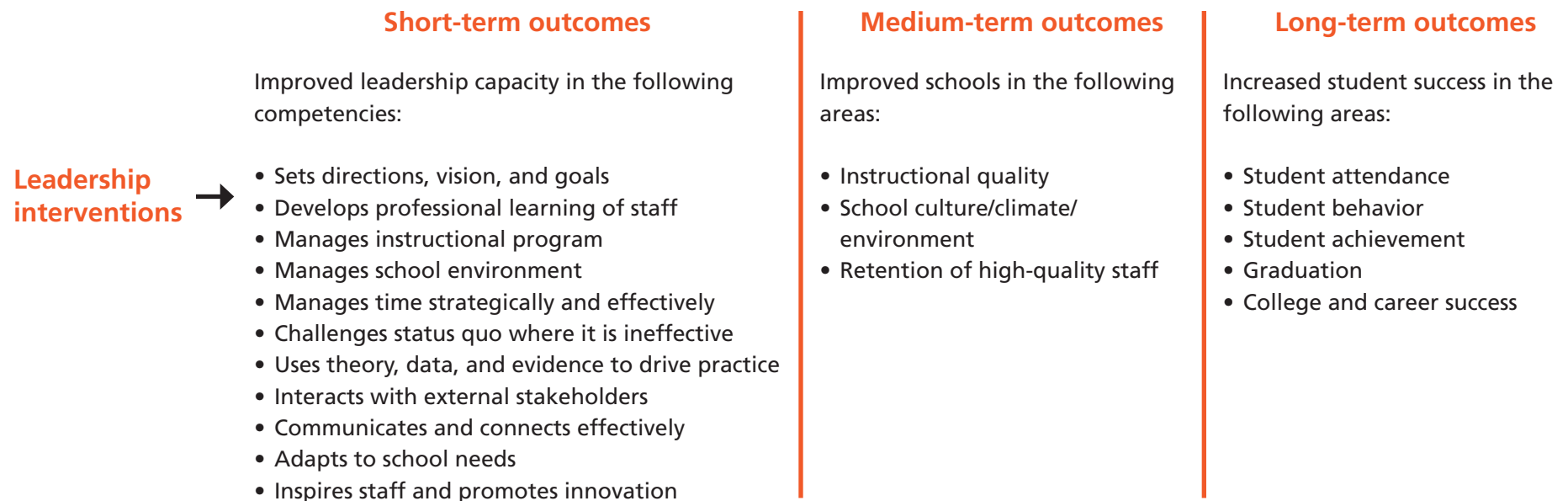
School Improvement

Problem: School turnaround research repeatedly shows that an effective principal is at the core of every successful school turnaround; however, not every principal is well equipped to effectively lead such an effort.

Intervention: School improvement models aim to improve low-performing schools through multiple components (e.g., changes to the curriculum, instruction, staffing, management). Many models include school leadership as one of these components. The school leadership component may include extensive principal professional development, changing the role of the principal to focus more on instruction, replacing the principal, granting the principal greater control over school decisions, and many other strategies explored under the other types of school leadership interventions. The unique element of this type of intervention is that the school leadership piece is integrated into a larger, schoolwide set of reforms and cannot be examined in isolation.

The Link Between Leadership Interventions and Student Outcomes

Leadership interventions use different strategies to achieve a common set of outcomes.⁵ While the ultimate goals of leadership interventions are to improve student outcomes, leaders must first improve the schools. Leadership interventions work to improve schools and students by improving the competencies of principals within schools. Principal competencies are a combination of the skills and abilities of principals and their behaviors, including where they focus time and effort. While this is not an exhaustive list, we provide examples of the outcomes mentioned by evidence-based leadership programs here.



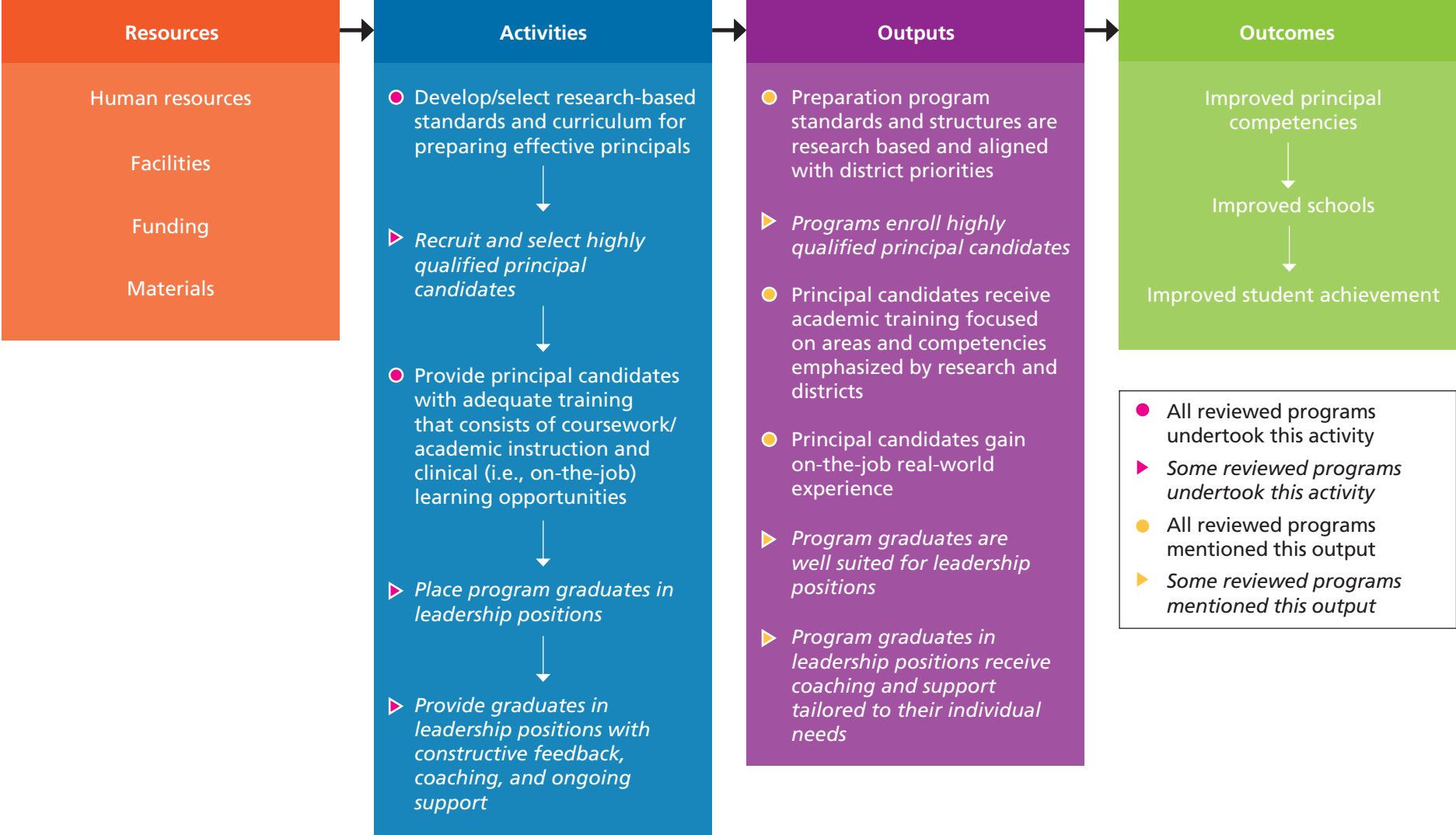
⁵ Leadership interventions may aim to increase the impact of an individual principal (e.g., targeted professional development) or of the principal pipeline across a district or state (e.g., improving the percentage of principals who master competencies). At the program/district/state level, leadership interventions may aim to improve the distribution of outcomes, such as ensuring that certain schools are staffed with principals who have mastered competencies, and achieving greater equity in outcomes for students.

Logic Model—Principal Preparation Programs

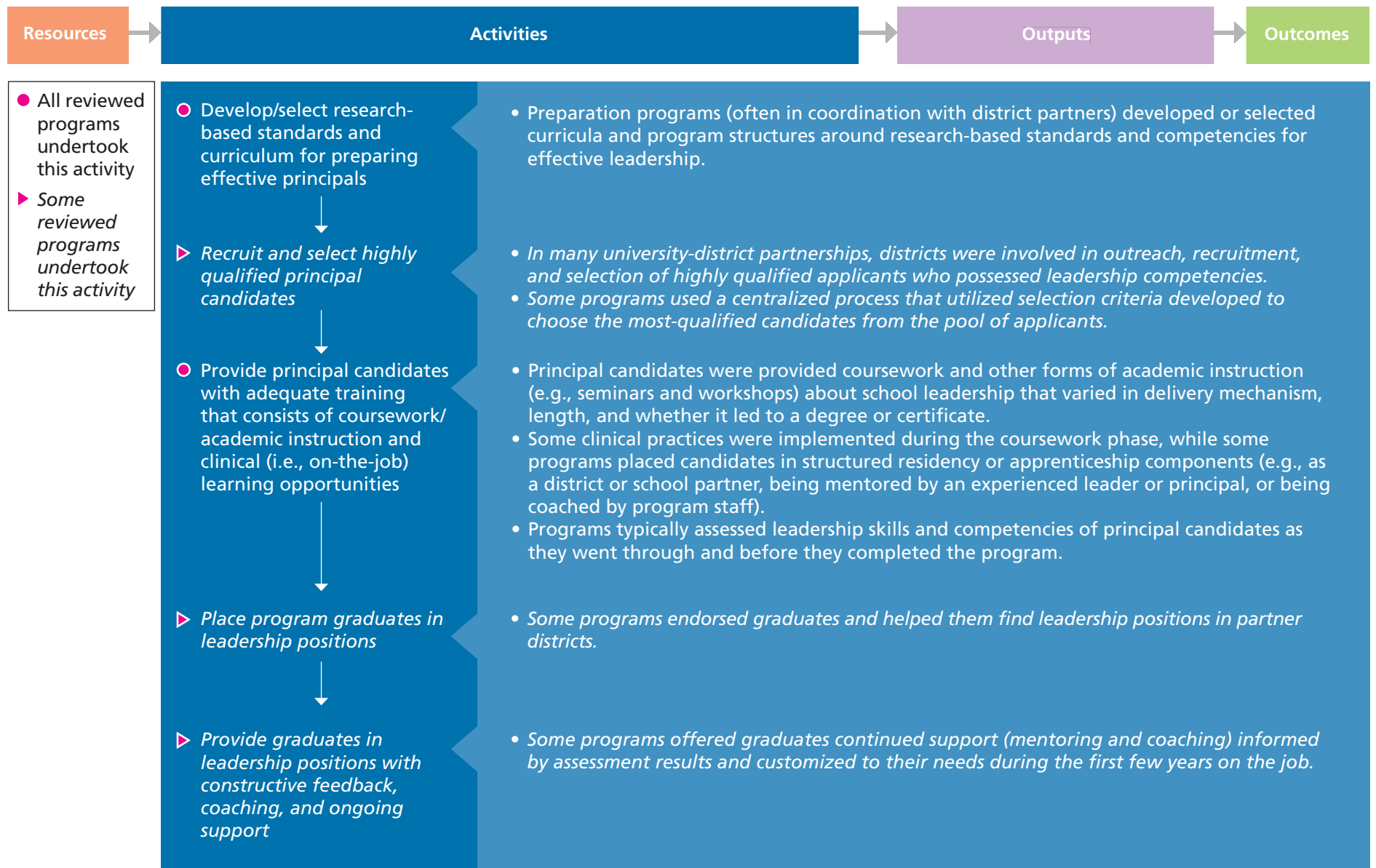


Logic Model—Principal Preparation Programs

The problem: Many states and districts struggle with the shortage of new principals who possess competencies needed for effective leadership. While attending training programs, principal candidates often do not receive academic coursework and clinical experiences that adequately prepare them for leadership positions in real life. After graduation, new principals often do not receive sufficient support and mentoring tailored to their individual needs to guide them in the first few years in leadership positions.



Logic model—Principal preparation programs: Details on activities reviewed in evidence-based programs



Logic model—Principal preparation programs: Sample indicators to track progress on outputs

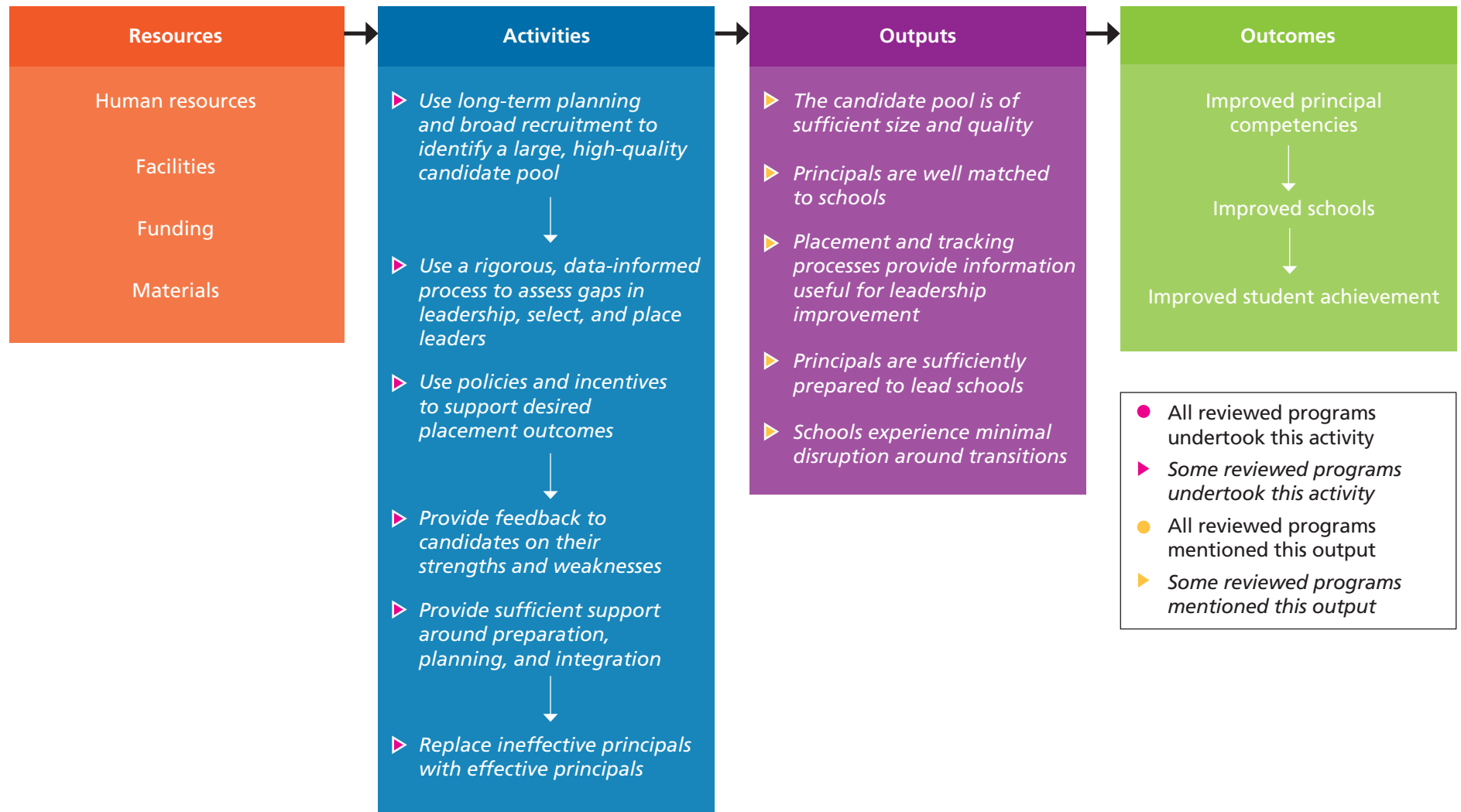


Logic Model—Strategic Staff Management (Recruitment, Selection, and Placement)

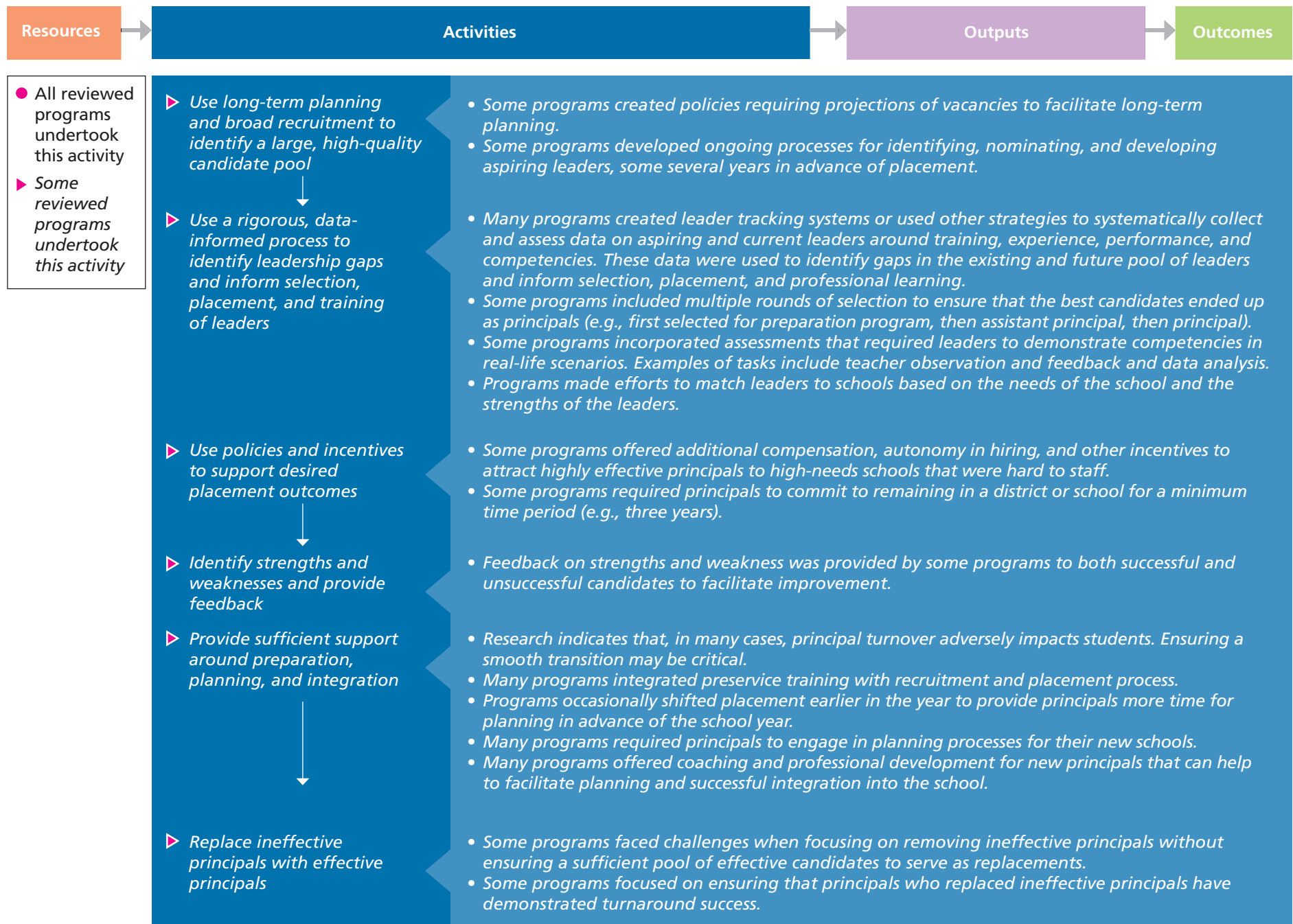


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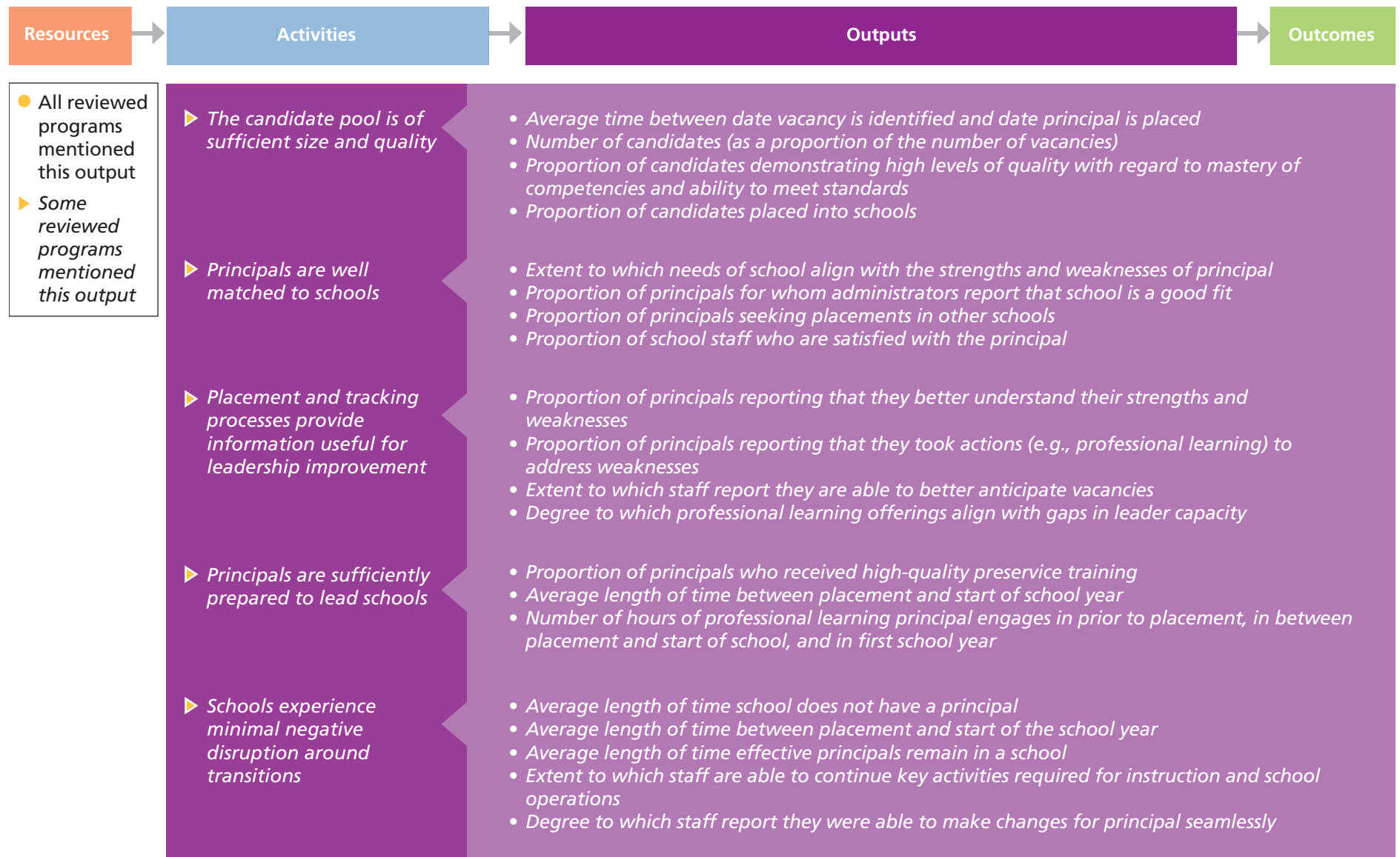
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Logic model—Strategic staff management: Details on activities reviewed in evidence-based programs



Logic model—Strategic staff management: Sample indicators to track progress on outputs

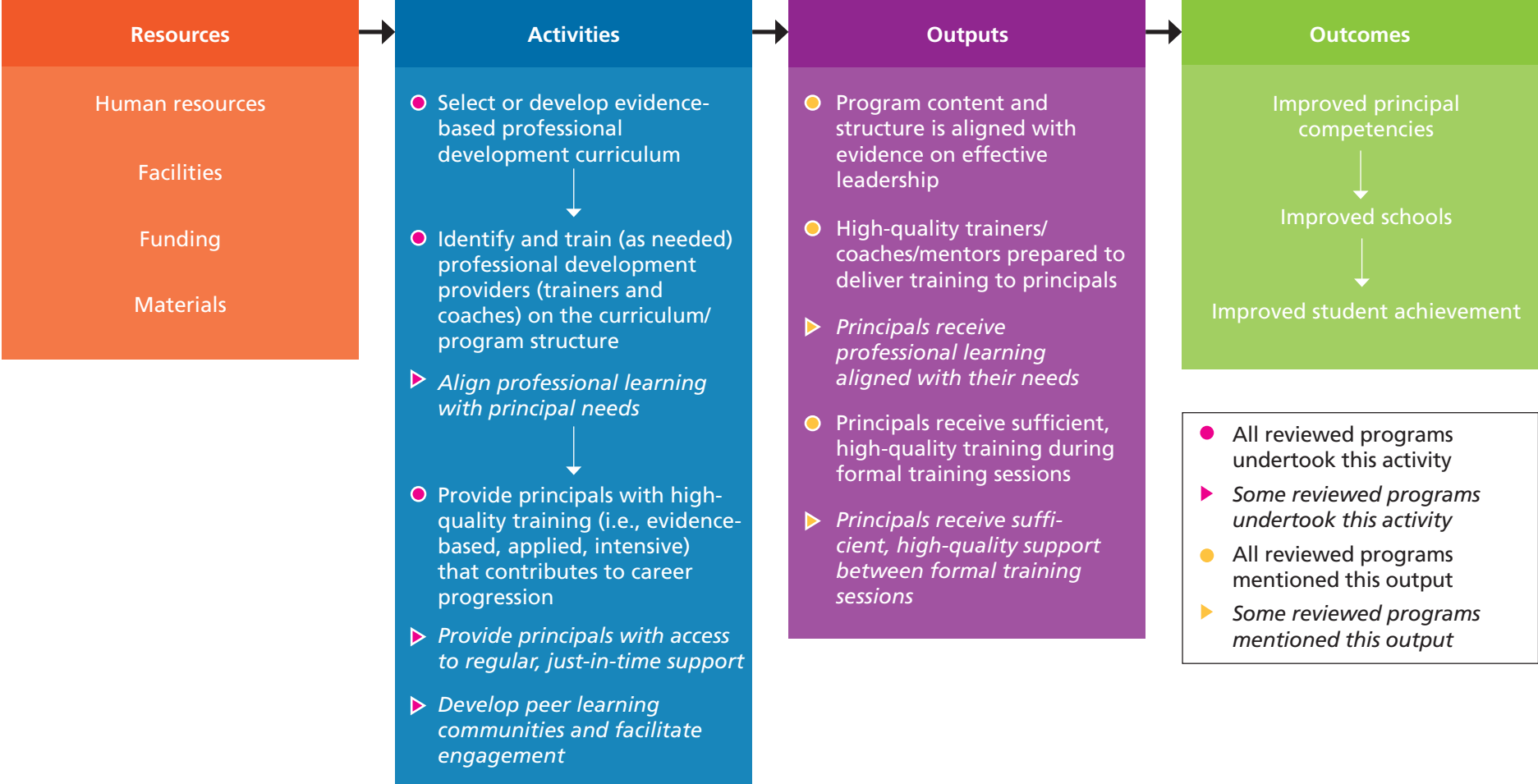


Logic Model—Professional Learning

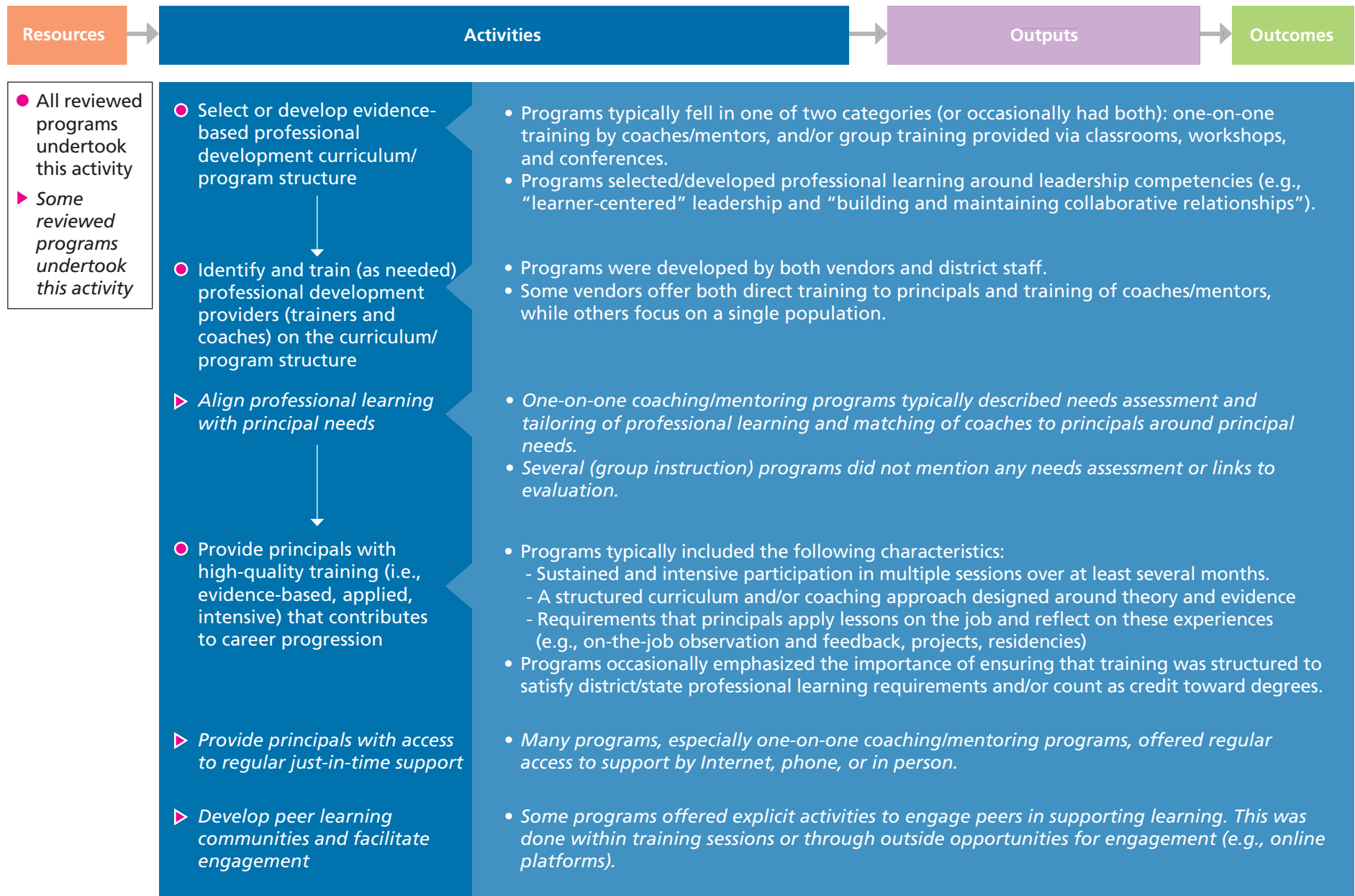


Logic Model—Professional Learning

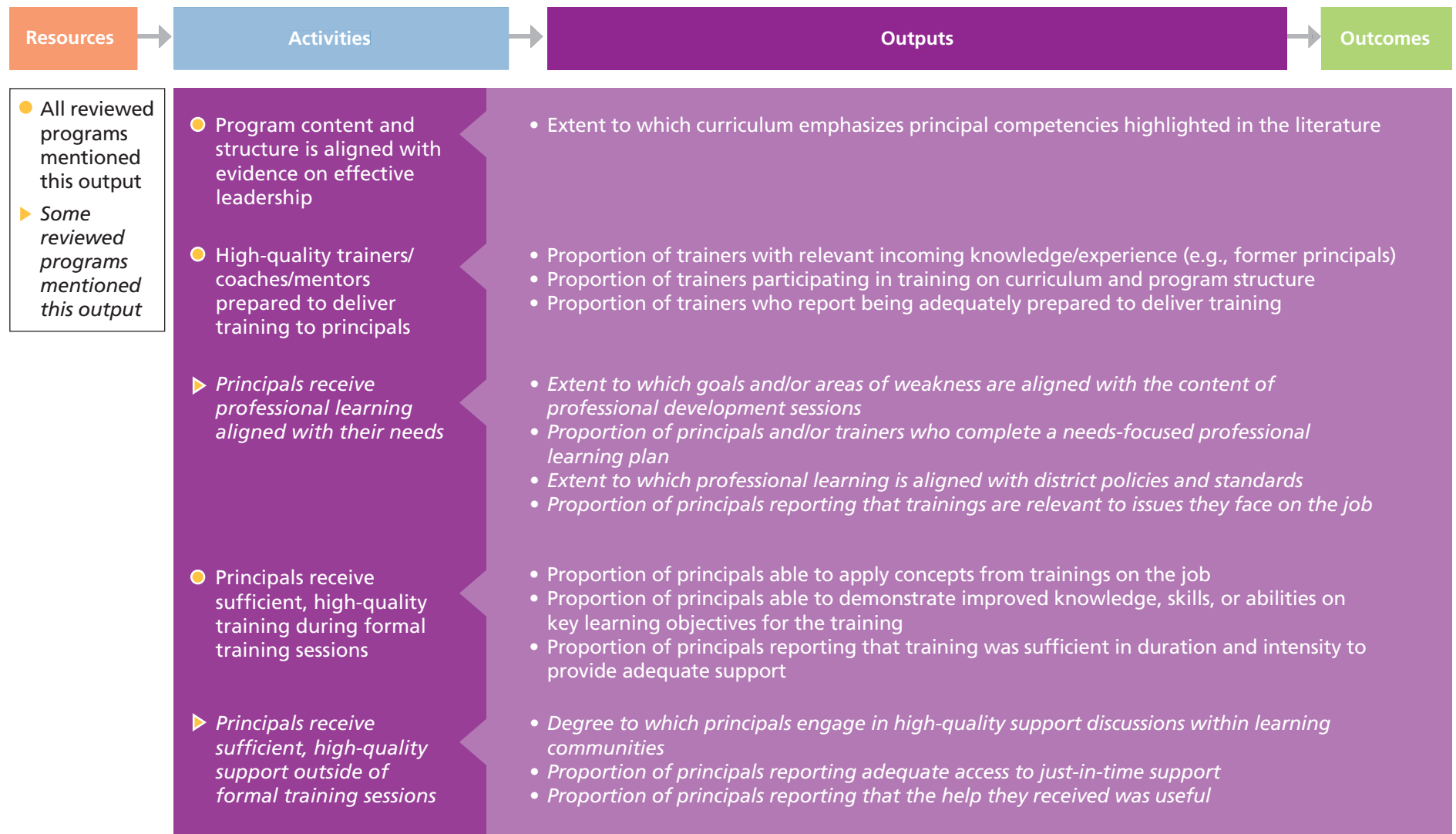
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Logic model—Professional learning: Details on activities reviewed in evidence-based programs



Logic model—Professional learning: Sample indicators to track progress on outputs

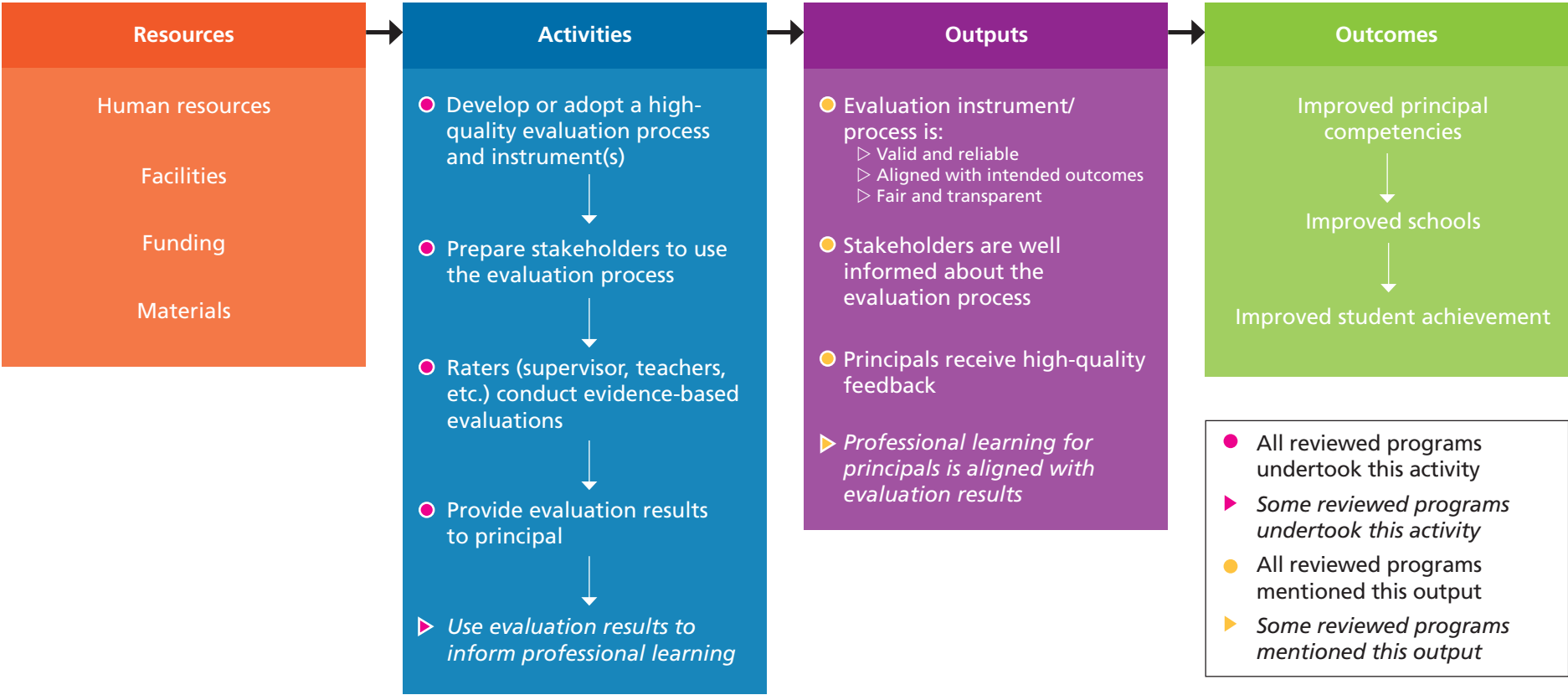


Logic Model—Leader Evaluation Systems

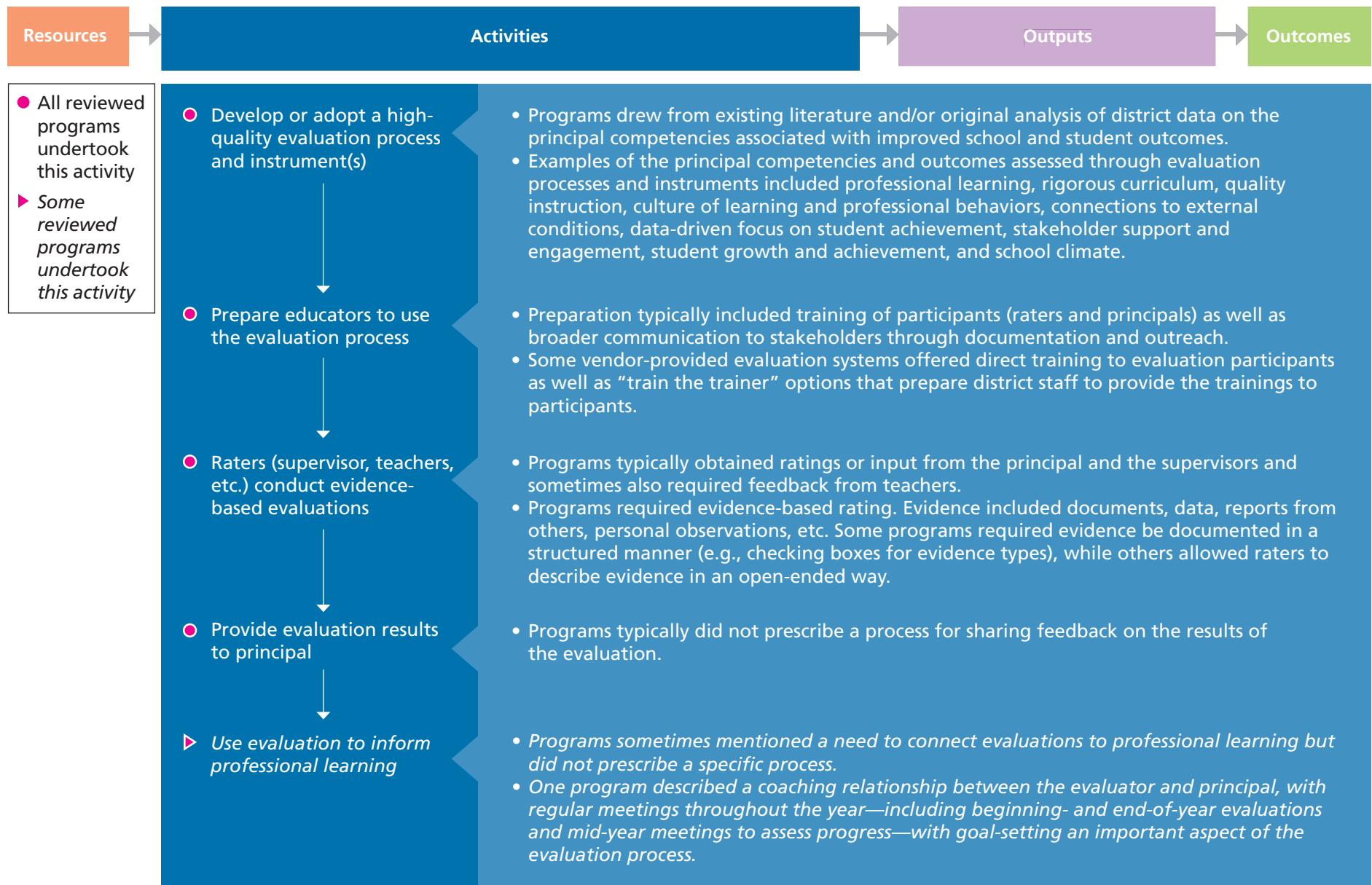


Logic Model—Leader Evaluation Systems

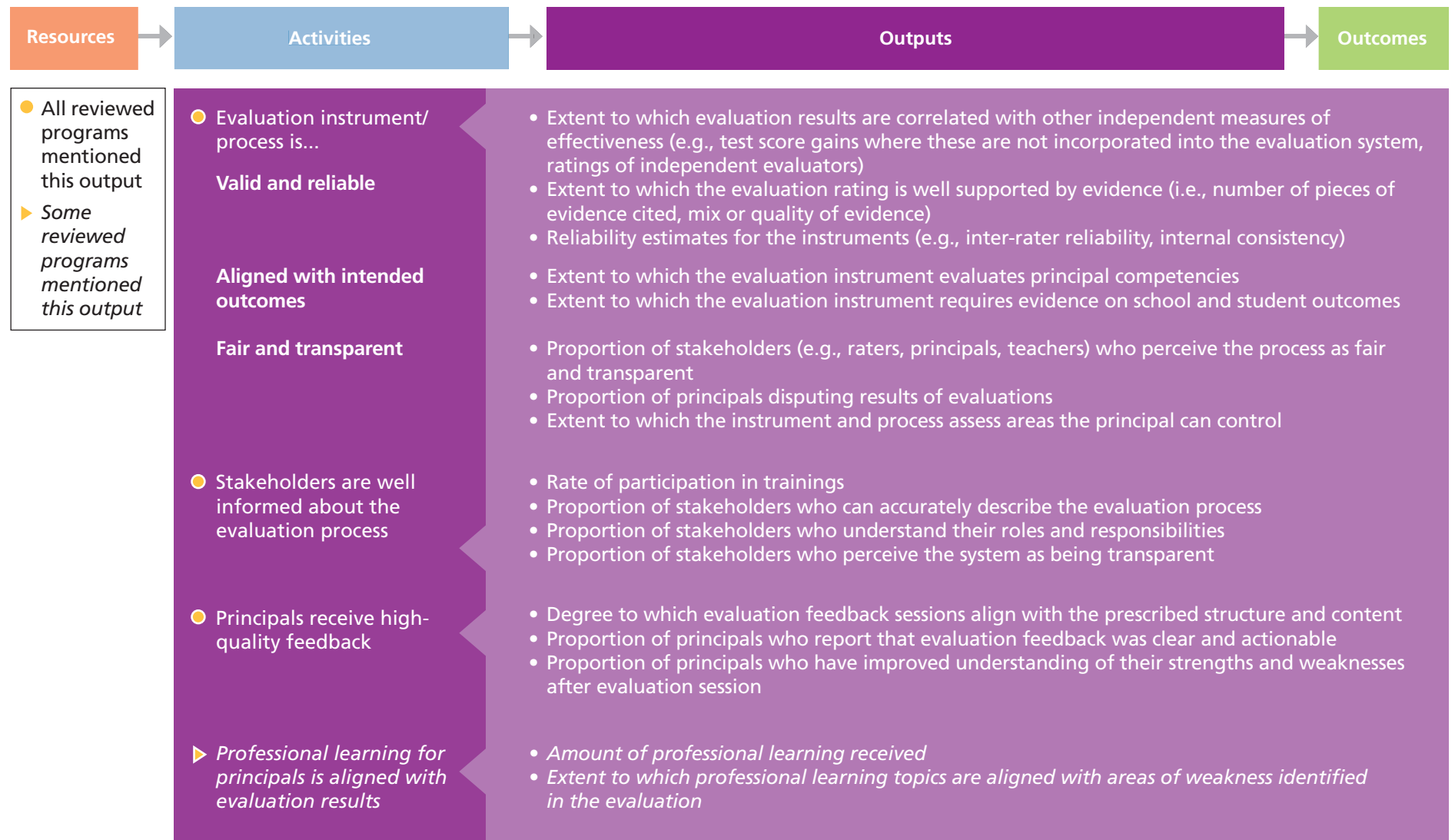
The problem: Districts often have limited information on the competencies and effectiveness of their school leaders, and principals often receive inadequate feedback on their abilities and progress. This can limit the ability of individual leaders to engage in professional growth and limit the ability of districts to assess leadership capacity and target efforts to improve capacity through other leadership interventions.



Logic model—Leader evaluation systems: Details on activities reviewed in evidence-based programs



Logic model—Leader evaluation systems: Sample indicators to track progress on outputs

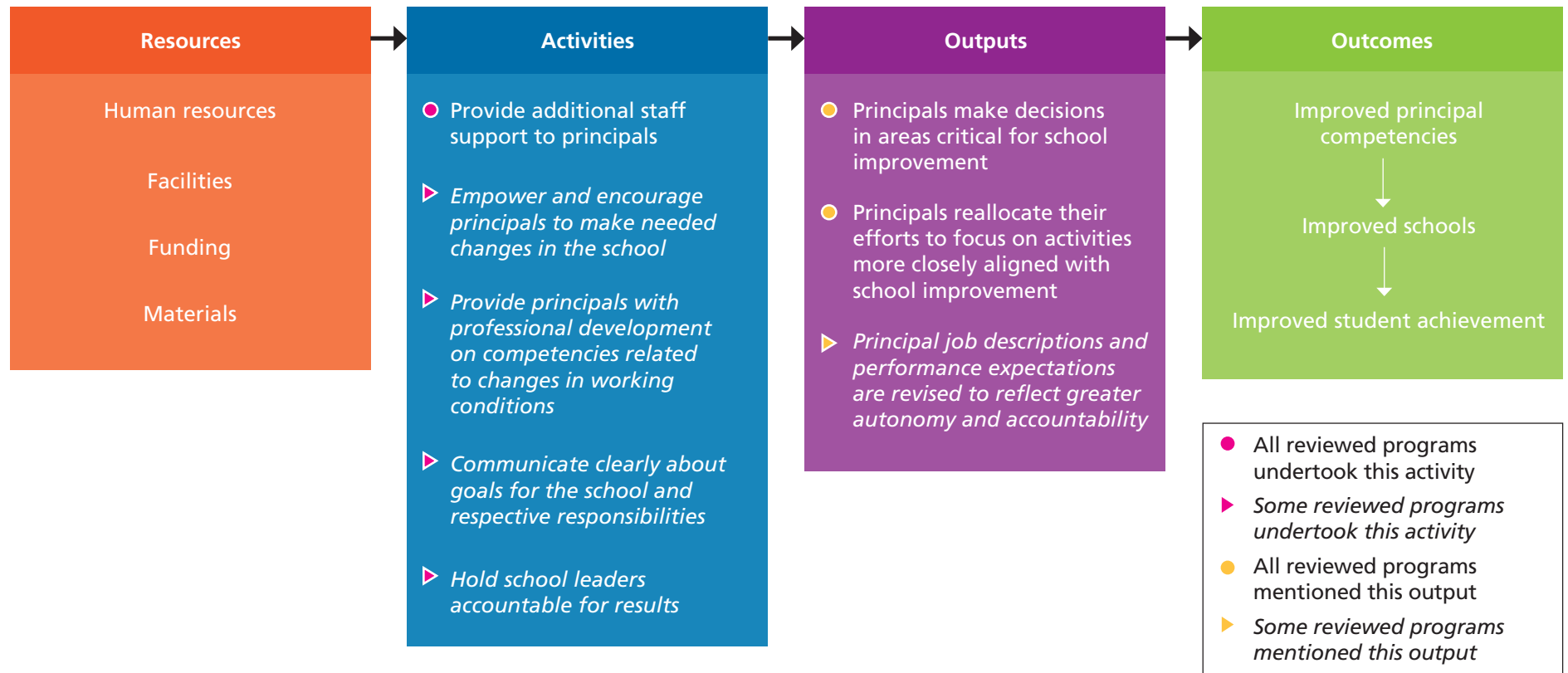


Logic Model—Working Conditions

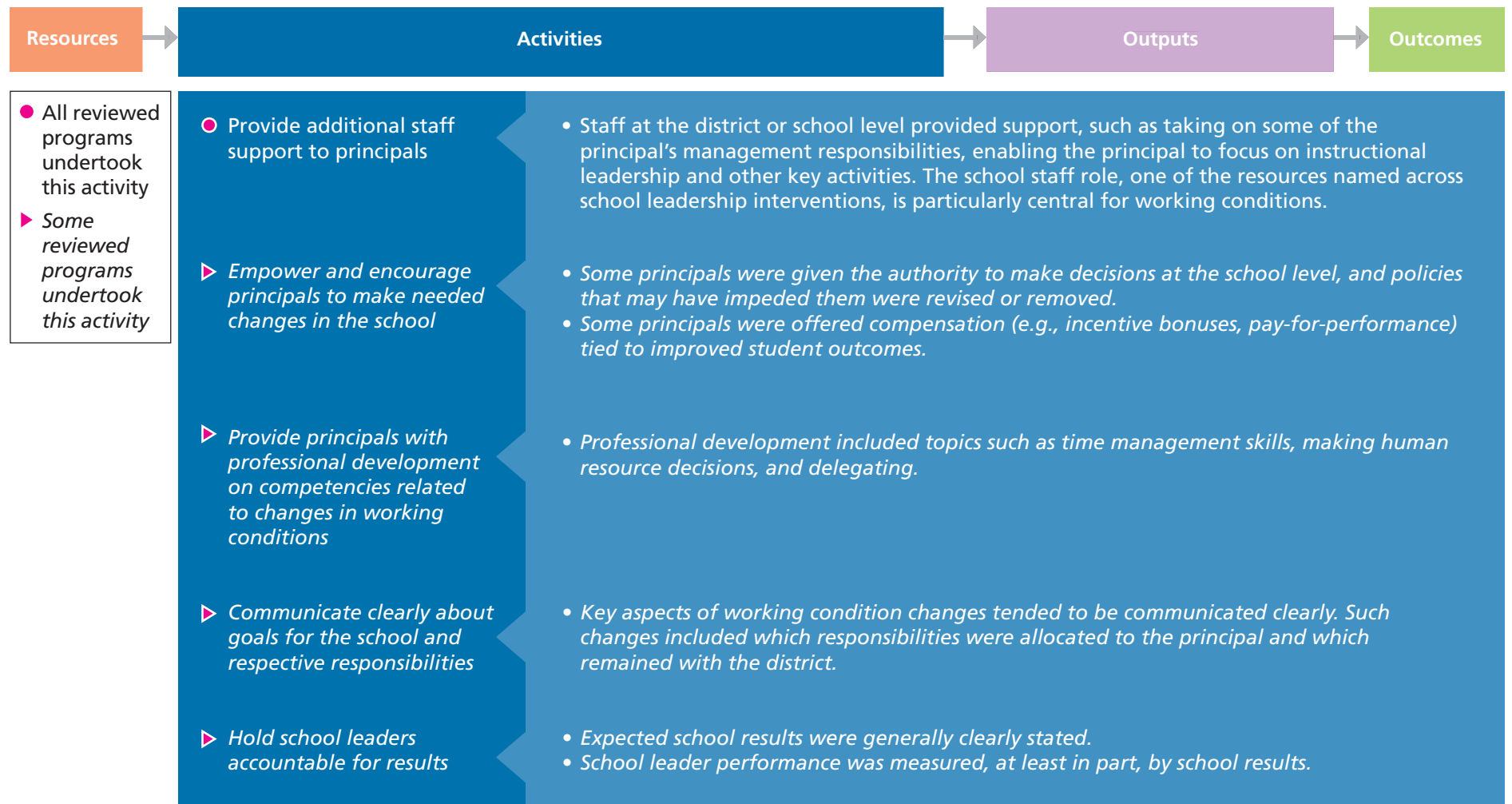


Logic Model—Working Conditions

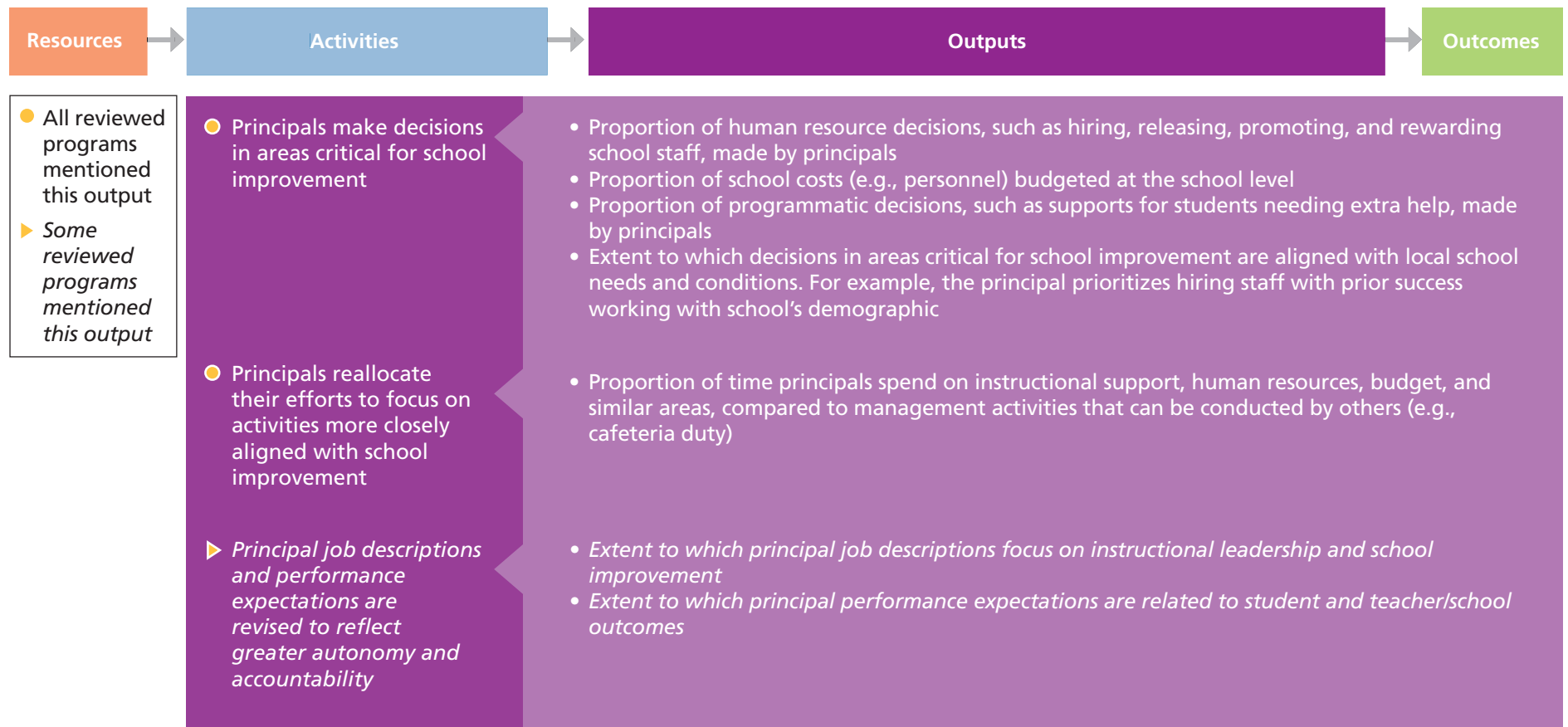
The problem: Potentially effective principals may not be achieving their full potential due to unclear expectations, lack of incentives, limited autonomy, bureaucratic central office processes, or insufficient support from supervisors and other departments.



Logic model—Working conditions: Details on activities reviewed in evidence-based programs



Logic model—Working conditions: Sample indicators to track progress on outputs

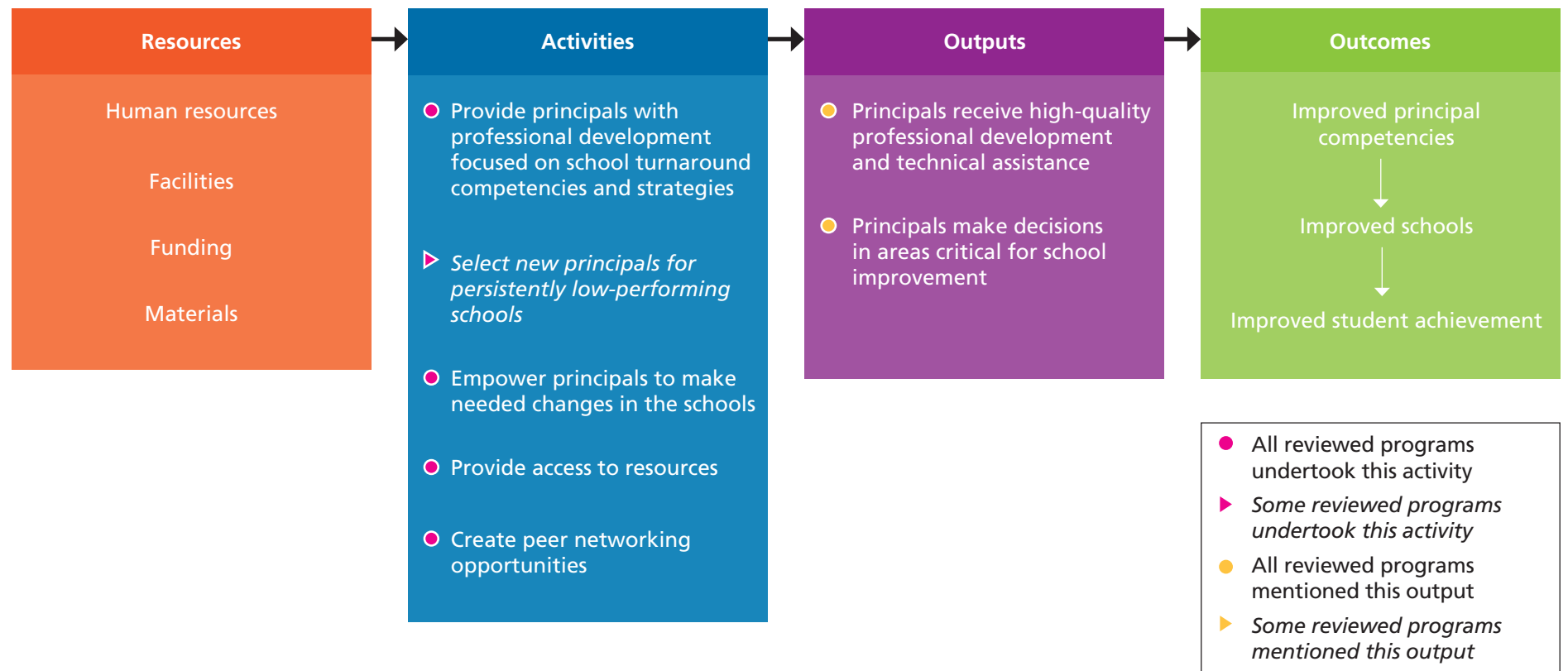


Logic Model—School Improvement

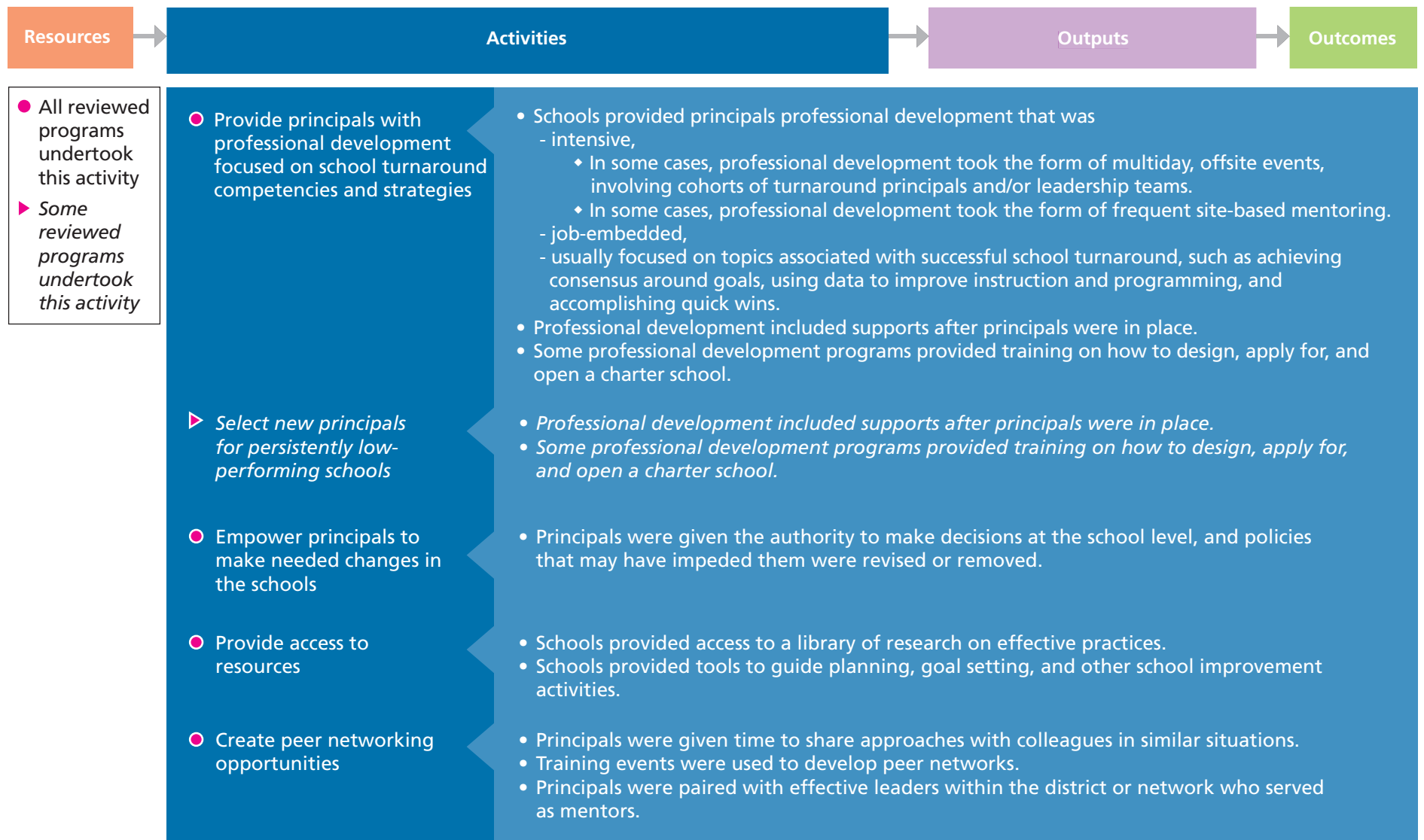


Logic Model—School Improvement

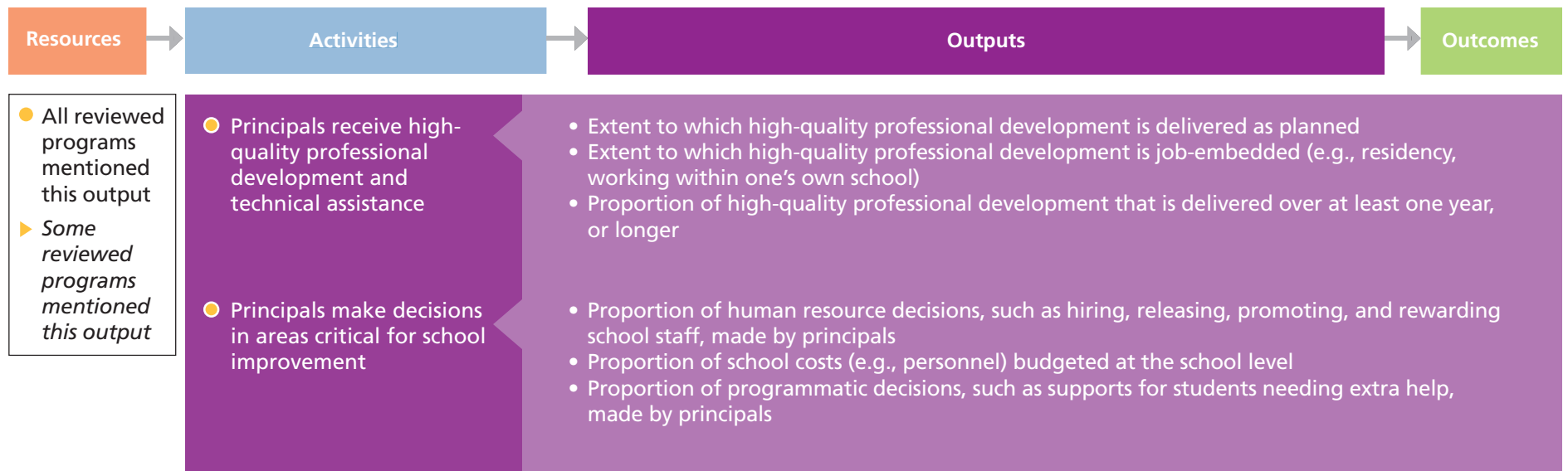
The problem: School turnaround research repeatedly shows that an effective principal is at the core of every successful school turnaround; however, not every principal is well equipped to effectively lead such an effort.



Logic model—School improvement: Details on activities reviewed in evidence-based programs



Logic model—School improvement: Sample indicators to track progress on outputs



Considering Resources

Before selecting a school leadership intervention, states and districts should identify the resources needed for successful implementation and determine whether the intervention is feasible, given constraints on available resources. In addition to identifying resources that support implementation, it can be useful to capture other aspects of the state or district context that might hinder the intervention. Given that the programs reviewed did not provide sufficient information on resources, we instead suggest a set of questions that programs might ask themselves as a first step to identifying the resources required for the logic model and program implementation.

Human resources

- Who is receiving the intervention?
 - Is the intervention for aspiring principals, new principals, and/or experienced principals?
 - Does the intervention involve other members of the leadership team?
 - What types of schools will the leaders serve in, and what will their constraints be on participation in the intervention?
 - What are the incoming competencies of leaders served by the intervention?
- Who is responsible for providing the intervention?
 - Who is directly involved in the intervention activities, and where will these staff members come from?
 - If an intervention is adopted from a vendor, what role does the vendor play in supporting the intervention?
- Who else might affect the implementation and effectiveness of the intervention?
 - Who inside of the education system (e.g., teachers, students) might be important?
 - What external partners might be important?

- How much time is needed from each of the individuals involved? Is additional staff required?
- How will stakeholders involved in the intervention communicate and interact?
 - Should committees or boards be convened to oversee design, implementation, and/or evaluation?
 - How will participants interact with each other and intervention staff, and to what degree should this be formally laid out under the intervention?
 - Are there existing barriers to intervention-related interactions to consider?
- What are the constraints on human resources available in the state or district?
 - How much existing capacity is available among current employees?
 - What are the processes and restrictions around hiring new staff?
 - Is there a population of individuals ready to participate in the intervention?
 - Are there barriers to external partnerships?

*What human resources are needed to implement the intervention?
Are those human resources available?*

Facilities

- Where will the intervention activities take place?
 - Does the intervention require technology, software, or online components?
 - Are there other physical supplies or equipment required for the intervention?
- What are the constraints on facilities in the state or district?

*What facilities are needed to implement the intervention?
Are those facilities available?*

Funding

- What are the estimated costs to support the intervention at various stages (i.e., development, ongoing implementation, evaluation, and adjustment)?
- Who will provide direct funding for the intervention, and through what mechanisms?
- Who will provide in-kind donations for the intervention, and through what mechanisms?
- What are the constraints on funding and in-kind donations in the state or district?

What financial resources are needed to implement the intervention? Are those financial resources available?

Materials

- What other materials are needed to support the intervention?
 - Do any of the intervention activities require physical or digital materials?
 - Are there other physical or digital materials required to inform stakeholders about the intervention?
 - Are there any constraints on the production or distribution of physical or digital materials?

What materials are needed to implement the intervention? Are those materials available?

Data

- What data are needed to support the intervention?
 - Are there existing data that can inform planning?
 - What data need to be used to support implementation?
 - What data need to be collected to assess implementation and impact?
 - What are the constraints around collecting, storing, or using data?

What data are needed to implement the intervention? Are those data available?

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The reauthorization of the U.S. Elementary and Secondary Education Act, referred to as the Every Student Succeeds Act (ESSA), emphasizes evidence-based initiatives while providing new flexibilities to states and districts with regard to the use of federal funds, including funds to promote effective school leadership. In response, state and district policymakers are engaged in efforts to design, implement, and evaluate evidence-based school leadership interventions. This guide describes six types of school leadership interventions: principal preparation programs, strategic staff management (recruitment, selection and placement), professional learning, leader evaluation systems, working conditions, and school improvement. The guide summarizes common components of evidence-based interventions and unpacks the relationships between the intervention activities and student outcomes. It also provides guidance on creating logic models.

The guide expands on RAND's 2017 synthesis of the evidence base on school leadership interventions, *School Leadership Interventions Under the Every Student Succeeds Act: Evidence Review: Updated and Expanded*.



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