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## Economic Evaluation of Teacher Induction Programs: A Toolkit How-to Guide

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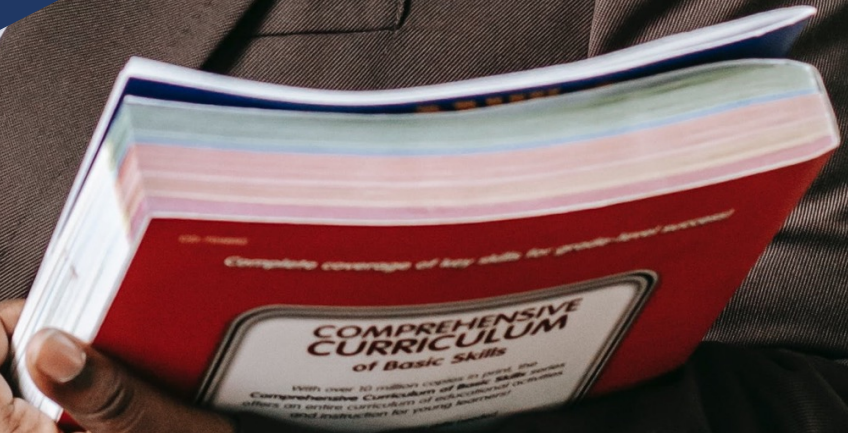
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# **ECONOMIC EVALUATION OF TEACHER INDUCTION PROGRAMS: A TOOLKIT HOW-TO GUIDE**

*a MERC research report*

# ABOUT THIS GUIDE

Research shows that teacher induction programs can be effective as measured by a number of outcomes. However, research also shows that teacher induction programs vary greatly from one district to another. Furthermore, there is no research that examines teacher induction programs with respect to costs and benefits. Educational leaders and stakeholders do not need to wait on formal institutional research to do such an economic evaluation.

This how-to guide, in combination with a [comprehensive report](#), the [Teacher Induction Program Cost Matrix](#) and the [Teacher Induction Program Benefit-Cost Workbook](#), comprises a toolkit designed to allow school and district leaders to conduct an economic evaluation of their teacher induction program.

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# CONTENTS

<b>INTRODUCTION</b>	<b>1</b>
<b>USING THE TEACHER INDUCTION PROGRAM ECONOMIC EVALUATION TOOLKIT</b>	<b>2</b>
<b>The Teacher Induction Program Ingredients Matrix</b>	<b>2</b>
Activities categories	3
Cost categories	3
<i>Figure 1. The Teacher Induction Program Ingredients Matrix</i>	4
<b>The Teacher Induction Program Benefit-Cost Workbook</b>	<b>5</b>
Costs	5
<i>Figure 2. Personnel on the Orientation Tab Example</i>	6
<i>Figure 3. Workbook Calculation Example</i>	7
<i>Figure 4. Cost Category of Equipment/Materials Example</i>	8
<i>Figure 5. Multiple School Years in the Workbook Example</i>	8
<i>Figure 6. Total Costs Tab Example</i>	9
Benefits	9
<i>Figure 7. Suburban District Benefits Tab Example</i>	12
Putting it all Together: The Benefits-Cost Analysis Tab	13
<b>STEPS FOR WORKING WITH THE TOOLKIT</b>	<b>13</b>
<b>REFERENCES</b>	<b>16</b>
<b>RESOURCES</b>	<b>18</b>

# INTRODUCTION

Supporting and retaining new teachers has been an ongoing challenge in education. [Ingersoll et al. \(2018\)](#) found that approximately 44% of new U.S. teachers leave the profession within the first five years. To improve new teacher retention, schools and districts have developed teacher induction programs. There is variability in those efforts, though they generally involve some combination of orientation, mentoring, professional development, and specialized observations. Additionally, some schools and districts might give new teachers reduced schedules or teaching loads as well as extra planning time.

Research has shown that these programs can be linked to better teaching and improved retention rates<sup>1</sup> as well as, in some cases, improved student achievement<sup>2</sup>. In addition to the studies evaluating the effectiveness of teacher induction programs, there has been much scholarship that attempts to estimate the financial costs of teacher turnover. The National Commission on Teaching & America's Future<sup>3</sup> estimated that nationally, \$7.34 billion are spent each year replacing teachers. They concluded that in urban districts, on average, individual schools spend \$70,000 per year on costs associated with turnover.

To date, no research has considered both costs and benefits of teacher induction programs. This is what economic evaluation in education tries to do. This how-to guide, in combination with a comprehensive report, the [Teacher Induction Program Cost Matrix](#) and the [Teacher Induction Program Benefit-Cost Workbook](#), comprises a toolkit designed to allow school and district leaders to conduct an economic evaluation of their teacher induction program. It affords decision makers an opportunity to examine the costs associated with teacher induction efforts as well as ways they might go about examining effectiveness, benefits or utility of those programs.

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<sup>1</sup> [Helms-Lorenz et al., \(2013\)](#); [Ingersoll & Strong, \(2011\)](#); [Rockoff, \(2008\)](#); [Ronfeldt & McQueen, \(2017\)](#); [Smith & Ingersoll, \(2004\)](#)

<sup>2</sup> [Ingersoll, \(2012\)](#); [Ingersoll & Strong, \(2011\)](#); [Schmidt et al., \(2017\)](#)

<sup>3</sup> [Barnes et al. \(2007\)](#)

# USING THE TEACHER INDUCTION PROGRAM ECONOMIC EVALUATION TOOLKIT

The Teacher Induction Program Economic Evaluation Toolkit was designed to assist school district leaders in conducting an economic evaluation of their teacher induction program; that is, to estimate both the costs and benefits of induction programs. The Toolkit consists of four parts:

- This how-to guide
- A full, technical report
- [The Teacher Induction Program Ingredients Matrix](#)
- [The Teacher Induction Program Benefit-Cost Workbook](#)

Ultimately, conducting an economic evaluation of an educational program involves figuring out costs and, potentially, benefits. The best way to estimate the costs of an educational intervention is referred to as the ingredients method. There are typically three steps involved in the ingredients method:

1. Identify and specify ingredients
2. Valuing and pricing ingredients
3. Calculating total cost and analyzing costs in such a way that the cost results relate to the theory of change for the relevant intervention

[The Teacher Induction Program Ingredients Matrix](#) is designed to assist in step one. Steps two and three can be carried out using the [Workbook](#). The rest of this document describes how to use those two parts of the Toolkit.

## The Teacher Induction Program Ingredients Matrix

The development of the [Matrix](#) (and the Toolkit) was based on multiple sources, including the literature on teacher induction programs, interviews with school district personnel from the MERC region, and the analytical framework used by Villar & Strong (2007). The former two sources are what yielded the categories of teacher induction activities that are built into the Toolkit. In other words, the **induction activities categories** are a distillation of activities typically found in comprehensive teacher induction programs and what interviewed school districts reported undertaking. The **cost categories** were determined by the analytical framework used by Villar & Strong (2007) as well as the principles of cost analysis described by Levin et al. (2018).

## Activities categories

- ORIENTATION - This could include professional development days prior to the school year led by district personnel for new teachers.
- MENTORING - This may include an experienced educator providing guidance and instruction to new educators during the first or first few years of their career.
- PROFESSIONAL DEVELOPMENT - This could include multiple training sessions throughout a school year led by experienced school personnel and specifically tailored to new teachers.
- OBSERVATIONS - This may include experienced educators observing lessons and giving feedback to new teachers throughout the school year, perhaps above and beyond what more veteran teachers get.
- ADDITIONAL INPUT CATEGORY - school districts might consider sets of activities other than the ones listed above as part of their teacher induction program. Including this in the [Matrix](#) and Toolkit provides some flexibility.

## Cost categories

- PERSONNEL - All district employees who dedicate any amount of time to a given teacher induction activity.
- FACILITIES - This could include rooms or buildings used during an orientation, for example.
- EQUIPMENT/ MATERIALS - This could account for writing materials or signage needed for training sessions.
- PROGRAM INPUTS - Other expenditures that are integral to the program objectives, such as professional development developed internally.
- CLIENT INPUTS\*\* - The contributions that new teachers and principals of new teachers offer in terms of their own time to coordinate and participate in the program.

**By combining the categories of activities and the categories of costs, the [Matrix](#) is formed.** In other words, the 5 induction activity categories are crossed with the 5 cost categories to generate a 5x5 [Matrix](#). Figure 1 below is a representation of the cost [Matrix](#). The categories of teacher induction program activities are in the rows of the [Matrix](#), and the cost categories are in the columns.

As stated above, the [Matrix](#) is designed for step one of the ingredients method. That is, for each teacher induction activity category in the [Matrix](#), users need to think about ALL of the ingredients in each of the cells. For example, starting at the top left, which personnel are involved in any new teacher orientation program, and to what degree? Then, moving to the

right on that same row, what facilities are used for any new teacher orientation program? Users should be as comprehensive as possible when listing the ingredients in each of the cells in the [Matrix](#). Failure to include any ingredient will result in teacher induction cost estimates that are too low.

Figure 1. *The Teacher Induction Program Ingredients Matrix*

	PERSONNEL	FACILITIES	EQUIPMENT/ MATERIALS	PROGRAM INPUTS*	CLIENT INPUTS**
ORIENTATION					
MENTORING					
PROFESSIONAL DEVELOPMENT					
OBSERVATIONS					
ADDITIONAL INPUT CATEGORY					

\*Program inputs refer to other expenditures that are integral to the program objectives, such as professional development (see e.g. mileage reimbursement).

\*\*Client inputs refer to the contributions that new teachers and principals of new teachers offer in terms of their own time to coordinate and participate in the program.

The Teacher Induction Program [Matrix](#) is a tool that can simply guide conversation among educational leaders and stakeholders to better understand the cohesiveness and comprehensiveness of their teacher induction programs. In other words, the [Matrix](#) suggests prompts such as: what is done in the name of teacher induction? Who is involved? How much do we invest in teacher induction? Is our approach internally coherent? Etc.

As part of the overall Teacher Induction Program Economic Evaluation Toolkit, though, the [Matrix](#) serves the purpose of collecting ingredient information for the [Teacher Induction Program Benefit-Cost Workbook](#).

## The Teacher Induction Program Benefit-Cost Workbook

The [Workbook](#), then, is a tool for educational administrators to do a cost analysis and/or benefit-cost analysis of their teacher induction programs. It's a flexible tool that can be used to do just a cost analysis or to figure out the benefits. Cost analysis is useful on its



own; information about costs can reveal a lot about a particular intervention. For example, to even think about costs of a teacher induction program forces educational leaders and stakeholders to examine everything that goes into the program; this sort of investigation can be quite revealing.

Or, in the [Workbook](#), cost information can be combined with estimates of benefits to do a modified benefit-cost (BC) analysis, one of the main forms of economic evaluation described by Levin et al. (2018). BC analysis examines policies or interventions according to the difference between their costs and **a monetized measure of their effects**. Because the outcomes are monetized, BC analysis, unlike cost-effectiveness analysis, can be used to compare programs with different goals or outcomes. It is also a particularly useful tool for doing an economic evaluation of something like teacher induction because teacher induction programs are multi-faceted; they have many parts (and lots of ingredients in cost analysis terms). If, ultimately, the costs of a program exceed the monetized outcome, any number of parts of the program (or ingredients) can be examined for possible reduction.

The [Workbook](#) is designed to help calculate the costs of the ingredients listed in the [Matrix](#) and to determine the benefits of the teacher induction program activities. The rest of this section describes how to use the [Workbook](#) to figure out costs and then benefits.

## Costs

When conducting economic evaluation in education, Levin et al (2018) emphasize the need to think in terms of opportunity costs or the value of the resources used to implement the program being evaluated. The cost is represented by all of the resources or ingredients required to replicate the program, no matter how they were financed or provided. Virtually all resources have a cost, even if they were provided in kind. Accordingly, the “cost” of pursuing the intervention is what we must give up by not using these resources in some other way<sup>4</sup>.

Costs should also be distinguished from what is included in a budget. A school district might have a budget for a particular program, but those budgets often do not include all of the costs. Facilities costs are a good example of this. The implementation of a program might require meetings. Those meetings require a meeting space. Typically, especially if the meeting space is district-owned or operated, the cost of those spaces are not included in the budget. But, those spaces could be used for something else; therefore, there are opportunity costs to consider. Similarly, budgets are not typically itemized to the level of the cost of an employee’s time on any one activity. For example, an assistant superintendent might spend part of their time developing a new teacher orientation

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<sup>4</sup> Levin et al, (2018)

program. The portion of their salary going towards that work is not typically included in a district budget.

Whereas the [Matrix](#) is designed to complete step one of the ingredients method (identify and specify ingredients), steps two (valuing and pricing ingredients) and three (calculating and analyzing costs) of the ingredients method are best done via the [Workbook](#).

There are tabs in the [Workbook](#) corresponding to each of the teacher induction program activities (the rows in the [Matrix](#)). And, each tab is broken down into the cost categories (the columns in the [Matrix](#)). The rows in each tab allow for entering specific ingredients under each category. So, for example, under Personnel on the Orientation tab (see Figure 2 below), there are multiple rows because there are likely multiple school and district personnel involved specifically in teacher induction program orientation activities.

**Therefore, the first step in using the [Workbook](#) is to transfer the ingredients from the [Matrix](#) to the relevant tabs in the [Workbook](#).**

Figure 2. Personnel on the Orientation Tab Example

	A	B	C	D	E
1		FISCAL YEAR 18-19			
2		SALARY	PERCENTAGE OF TIME	TOTAL COST	SALARY
3	PERSONNEL			0	
4	[District Administrator #1]			0	
5	[District Administrator #2]			0	
6	[Consultant / Speaker]			0	
7	[Administrative support]			0	
8	[Other]			0	
9	[Other]			0	
10	[Other]			0	
11	[Other]			0	
12	[Other]			0	
13	[Other]			0	

☰	INSTRUCTION	ORIENTATION ▾	MENTORING	PROFESSIONA	OBSERVATION	ADDITIONAL II	TOTAL COSTS	BENEFIT	+
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**Step two in using the [Workbook](#) is valuing and pricing the ingredients.** For the rows dedicated to personnel in each tab, the costs of the ingredients are determined by entering the individual's salary in one column and the percentage of time dedicated to the induction activity category. For example, if an assistant superintendent is charged with designing and implementing new teacher orientation, a portion of their salary is considered a cost. Therefore, their salary is entered into the appropriate column(s) and the percentage of their TOTAL time (in a given year) is also entered into the appropriate column(s).

In the example below in Figure 3, an Assistant Superintendent for Instruction, who earns an annual base salary of \$100,000 in 2018-19 is estimated to spend 10% of their work time in a

given year on a new teacher orientation program. The position is entered in Column A, Row 4. Their salary is entered in Column B, Row 4. And, .01 is entered in Column C, Row 4. The [Workbook](#) automatically calculates the total cost for that ingredient for that year as indicated in Column D, Row 4. Total personnel costs for orientation activities is also automatically calculated and can be seen in Column D, Row 4.

Figure 3. Workbook Calculation Example

	A	B	C	D
1		<b>FISCAL YEAR 18-19</b>		
2		<b>SALARY</b>	<b>PERCENTAGE OF TIME</b>	<b>TOTAL COST</b>
3	<b>PERSONNEL</b>			<b>\$10,000</b>
4	Assitant Superintendent for Instruction	\$100,000	0.1	\$10,000
5	[District Administrator #2]			0
6	[Consultant / Speaker]			0
7	[Administrative support]			0
8	[Other]			0
9	[Other]			0
10	[Other]			0
11	[Other]			0
12	[Other]			0
13	[Other]			0
14				

For non-personnel cost categories, the [Workbook](#) asks for units and unit cost. The example shown below in Figure 4 involves the valuing and pricing of costs for the cost category of equipment/materials and the induction activity of orientation. In this example, the district bought 10 boxes of donuts for new teacher orientation at \$25 per box. The district also used 5 reams of paper at the cost of \$50 per ream. For each ingredient in the cost categories, all the user has to do is enter the number of units and the cost per unit. The [Workbook](#) will automatically calculate the total costs.

Figure 4. Cost Category of Equipment/Materials Example

	A	B	C	D
1		<b>FISCAL YEAR 18-19</b>		
27		<b>COST PER UNIT</b>	<b># OF UNITS</b>	<b>TOTAL COST</b>
28	<b>EQUIPMENT/MATERIALS</b>			<b>500</b>
29	Boxes of donuts	25	10	250
30	Reams of paper	50	5	250
31	Swag			0
32	Awards (certificates/plaques)			0
33	Signage			0
34	Computers / technology			0
35	[Other]			0
36	[Other]			0
37				



This Total Costs tab becomes a useful resource for district administrators who want to see how much money was spent on teacher induction program activities disaggregated by cost category.

## Benefits

There is also a tab in the [Workbook](#) for estimating benefits for the purposes of benefit-cost analysis. Benefit-cost (BC) analysis examines policies or interventions according to the difference between their costs and **a monetized measure of their effects**. Whereas cost-effectiveness (CE) analysis uses a straight measure of effectiveness to generate a CE ratio, BC analysis turns the effectiveness measure into a monetary value and compares that to the costs<sup>5</sup>. Since the outcomes are monetized, BC analysis, unlike CE analysis, can be used to compare programs with different goals or outcomes. It is also a particularly useful tool for doing an economic evaluation of something like teacher induction because teacher induction programs are multi-faceted; they have many parts (and lots of ingredients in cost analysis terms). If, ultimately, the costs of a program exceed the monetized outcome, any number of parts of the program (or ingredients) can be examined for possible reduction.

In monetizing outcomes, the focus should be on **willingness to pay**. For the purposes of the [Workbook](#), willingness to pay is calculated as **the difference between an estimate of what teacher turnover would have cost absent a teacher induction program and an estimate of what teacher turnover actually cost the district**.

To help districts and stakeholders estimate costs of teacher turnover, The Learning Policy Institute created a [Teacher Turnover Cost Calculator](#) that takes into account various factors. The estimates built into the calculator are derived from averages across several studies<sup>6</sup> and are adjusted for inflation. The Calculator is intended to generate approximate plausible values to help districts and stakeholders to understand the costs of teacher turnover in their own contexts. By default the Calculator estimates that the cost to a rural district of teacher turnover is \$9,000 per teacher. In a suburban district, that estimate goes up to \$11,000 per teacher, and in an urban district, the estimated cost is \$21,000 per teacher.

To figure out the benefits of a teacher induction program, that is to monetize the value of teacher turnover, the LPI Teacher Turnover Cost Calculator is built into the [Teacher Induction Program Benefit-Cost Workbook](#), in the penultimate tab. The cost estimates can be adjusted in the Calculator. Along with the Calculator, the [Learning Policy Institute \(LPI\)](#) provides a [list of activities that are often associated with replacing a teacher](#), all of which

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<sup>5</sup> Levin et al., (2018)

<sup>6</sup> Shockley et al. (2006); [Barnes et al., \(2007\)](#); [Milanowski & Odden, \(2007\)](#)

have related financial and personnel costs. That list includes, among other things: Paying substitutes to cover for mid-year departures, conducting exit surveys; scheduling site visits and conducting interviews; conducting criminal background checks, credentialing checks, and reference checks; etc. By considering that list of activities, and others, local school administrators can adjust the cost estimates in the calculator.

It may seem odd to use estimates of the \*costs\* of new teacher turnover as estimates of the benefits of a teacher induction program. However, it is important to remember that, as mentioned earlier in this report, for the purposes of benefit-cost analysis, benefits are to be monetized under the conceptual framework of “willingness to pay.” If the main goal of teacher induction programs is to retain new teachers, any school division should be willing to pay what it would cost to have to replace new teachers who leave. Villar & Strong (2007) refer to the benefit as “**savings from reduced attrition.**”

To calculate savings from reduced attrition, Villar & Strong (2007) use a reference point to determine how beneficial the teacher induction program was. To do that, they pose a counterfactual question: “What would the attrition rate of new teachers be in the absence of the induction program?” (p. 9). Furthermore, they add, “Ideally, in order to address this question, either we would need to know something about past attrition rates, or we could compare the target group with a comparison group that does not receive the intervention” (p. 9). However, since the program was not newly developed nor was it only offered to some randomly selected group of new teachers, those were not feasible comparison rates. Therefore, instead of using those data, they use statewide attrition rates as the baseline to determine that, on average, teacher attrition in the district under study was about 2% better than the state average.

On the Benefits tab of the [Workbook](#), users are asked to input two sets of numbers and to use the LPI Calculator to estimate two sets of costs. The first set of numbers, entered in rows 2 and 3, are the actual number of NEW teachers hired in a given year and the number of those NEW teachers that returned to the district the next year. The user is then asked in row 6 to input those numbers into the LPI calculator, along with the appropriate settings in the calculator (e.g. is the district rural, suburban, or urban?), to generate the estimated cost of turnover. That estimated cost should be entered into row 6 for each given year.

Additionally, users need to calculate the costs of a hypothetical attrition rate. That is, they are asked to estimate a response to the question of “What would the attrition rate of new teachers be in the absence of the induction program?” Users might choose to input a rate based upon any of the following possibilities: statewide rate, rate of similar district(s), rate anticipated prior to the year, previous year’s rate, etc. In a district that has higher attrition rates than, say, the state average and also similarly situated districts, the best path forward

may be to simply guess at what the attrition rate of new teachers would have been in the total absence of a teacher induction program. In row 11, for each given year, the user should enter the number of NEW teachers estimated to have returned absent the teacher induction program. Then, that number should be used to generate a hypothetical estimated costs of turnover under the assumption of no teacher induction program. Like Villar & Strong, these hypothetical estimates could be based on statewide averages, averages of neighboring districts, averages of years prior to a new induction program, etc. Figure 7 below shows what the benefits tab might look like for a suburban district that retained 8 of their 10 new teachers but that, hypothetically, based on a state average of 60% retention of first year teachers, would have only retained 6 of those new teachers absent the teacher induction program.

The benefit of the teacher induction program is then automatically calculated as the difference between the hypothetical estimated cost of turnover and the estimated cost of turnover based on actual turnover data. Again, this seems like cost data, but it's actually an estimate of the willingness to pay for the induction program; it is the savings from reduced attrition and is, therefore, the estimated benefit of the program. This savings from reduced attrition is calculated automatically in row 17 of the benefits tab.

Figure 7. Suburban District Benefits Tab Example

	A	B	C	D	E
		FISCAL YEAR 18-19	FISCAL YEAR 19-20	FISCAL YEAR 20-21	FISCAL YEAR 21-22
1					
2	NUMBER OF NEW TEACHERS HIRED	10			
3	NUMBER OF NEW TEACHERS WHO RETURNED THE NEXT YEAR	8			
4	NEW TEACHER RETENTION PERCENTAGE	0.8			
5					
6	ACTUAL COST OF TEACHER TURNOVER. <a href="#">CLICK ON THIS LINK TO CALCULATE THE COST OF TEACHER TURNOVER</a> (make sure you are on the "Let Us Help You" Tab) and enter the estimated cost of turnover in the yellow cell(s) in this row	22,000			
7	NOTES				
8	(1) For any given year, "Total Number of Teachers" should be the total number of new teachers hired from row 2 above				
9	(2) For any given year, "Percent who left last year" should come from row 4 above				
10					
11	IN THE ABSENCE OF THE TEACHER INDUCTION PROGRAM, HOW MANY NEW TEACHERS WOULD HAVE RETURNED THE NEXT YEAR?	6			
12	HYPOTHETICAL COST OF TEACHER TURNOVER. <a href="#">CLICK ON THIS LINK TO CALCULATE THE COST OF TEACHER TURNOVER</a> (make sure you are on the "Let Us Help You" Tab) and enter the estimated cost of turnover in the yellow cell(s) in this row	44,000			
13	NOTES				
14	(1) For any given year, "Total Number of Teachers" should be the total number of new teachers hired from row 2 above				
15	(2) For any given year, "Percent who left last year" should come from row 11 above				
16					
17	SAVINGS FROM REDUCED ATTRITION	22,000	0	0	0
18					
19	OTHER BENEFITS				
20	Student learning gains	0	0	0	0
21	PD cost savings to new teachers	0	0	0	0
22	[additional benefit]	0	0	0	0
23	[additional benefit]	0	0	0	0
24	[additional benefit]	0	0	0	0
25	TOTAL ADDITIONAL BENEFITS	0	0	0	0
26					
27	TOTAL BENEFITS	22,000	0	0	0
28					

It is important to consider all possible benefits of teacher induction programs. For BC analysis, there are certainly multiple benefits to consider from a willingness to pay perspective. In their analysis of mentoring programs, Villar & Strong (2007) looked at benefits in two categories: "...returns on district investments to training and the lowered social costs of losing new teachers to the teaching profession" (p. 12). The former is further broken down into returns on district investments to training and returns on a culture of professional development. Rows 20-24 of the Benefits tab allow users to enter estimates of additional benefits. For example, teachers assigned as mentors certainly benefit from their role as mentors. One way to think of that benefit is in professional development terms. That is, the mentor teacher developed as a professional by serving as a mentor and likely did not require other formal professional development as a result. Those cost savings amount to a benefit of the teacher induction program.



## Putting it all Together: The Benefits-Cost Analysis Tab

The Benefits-Cost Analysis tab of the [Workbook](#) is where the data from the cost tabs and the benefits tab come together automatically to produce a benefits-cost ratio. Ideally, that ratio is greater than one. That is, we want to know that the benefits attributable to the teacher induction program are greater than the attributable costs. Villar & Strong's (2007) benefit-cost analysis of the mentoring program yielded a benefit-cost ratio of 1.66. In other words, as they wrote, "Assuming the costs of hiring a replacement represent 50% of a new teacher's salary, an investment in an intensive model of new teacher induction in a given district pays \$1.66 for every \$1 spent" (p. 16). That is evidence of a beneficial program considering both costs and benefits. In the example below, using the cost estimates described above, the Benefits-Cost Analysis tab shows a ratio of 2.10. In other words, every dollar invested in the teacher induction program paid \$2.10 to the district.

If the benefit-cost ratio is less than one, administrators and stakeholders might want to consider that they have overestimated costs or underestimated benefits (i.e. the program does not have a positive cost benefit). Savings from reduced attrition are certainly not the only benefits of teacher induction. In fact, Villar & Strong (2007) concluded that "[s]avings from new teacher attrition amount to only 17% of the total benefits the program yields." Thus, divisions using the [Workbook](#) may want to consider entering estimates for "Other Benefits" on the Benefits tab. Alternately, if after serious deliberation and consideration, it may be that costs need to be lowered. Then again, that same deliberation and consideration may lead administrators and stakeholders to conclude that additional inputs (and their associated costs) might boost retention higher at a greater relative weight. That is, there may be additional costs to incur that would ultimately prove so beneficial from a retention perspective, that the division would be willing to pay those costs moving forward.

## STEPS FOR WORKING WITH THE TOOLKIT

Stakeholders should use the Teacher Induction Economic Evaluation Toolkit in whatever ways best serve their goals. One school district might just use the [Matrix](#) to try to take account of what the district's teacher induction program looks like. Another district might also take the next step of attaching costs to the ingredients surfaced through the [Matrix](#) to estimate the costs of teacher induction. And, a third district might use the full suite of tools to do a full benefit-cost analysis. The steps listed below can be taken in smaller increments or to any degree stakeholders find valuable.

1. Review the [Teacher Induction Program Cost Workbook](#) to see where it might be valuable and what might be needed to complete it.
2. Work through the Teacher Induction Program Cost [Matrix](#) to identify the ingredients across all five induction program activities and all 5 cost categories. In the end, there should be 25 sets of ingredients.
3. Enter the ingredients from the [Matrix](#) into the relevant tabs, columns, and rows of the [Teacher Induction Program Cost Workbook](#). This can be done for one academic year or multiple academic years.
4. On each of the 5 cost category tabs in the [Workbook](#), estimate costs for each of the ingredients. For personnel, this involves entering the total salary of each staff member involved and the percentage of their time devoted to the activity. For the other cost categories, this involves estimating the number of units involved as well as the cost per unit.
5. On the Benefits tab, for any given fiscal year, enter the number of new teachers hired that year and the number of those teachers who returned to their same school the next year.
6. On the Benefits tab, enter the numbers generated in step 5 into the LPI Calculator to determine the cost of teacher turnover. Make sure to choose the appropriate district type in the calculator and to adjust estimates accordingly.
7. On the Benefits tab, use the LPI Calculator again to estimate the costs of a hypothetical retention rate absent the teacher induction program. Users might choose to input a rate based upon any of the following possibilities: statewide rate, rate of similar district(s), rate anticipated prior to the year, previous year's rate, etc.
8. On the Benefits tab, starting in row 20, enter the dollar values of additional benefits that flow from the teacher induction programs. These are estimates of things like professional development savings, improved school culture, etc.
9. Review all estimates on all of the cost category tabs and the benefits tab.
10. Note the Benefits-Cost ratio on The Benefits-Cost Analysis tab. This is where the data from the cost tabs and the benefits tab come together automatically.

Ideally, the B-C ratio is greater than one. That is, we want to know that the benefits attributable to the teacher induction program are greater than the attributable costs. For example, a B-C ratio of 1.5 can be interpreted to mean that, based on all the assumptions built into the cost and benefit estimates, an investment in the teacher induction program as designed pays \$1.50 for each \$1 spent.

The initial version of the [Teacher Induction Program Cost Workbook](#) is just that, initial. Future versions of the [Workbook](#) could include any number of improvements or updates. One notable limitation of the [Workbook](#) is that if it is used to estimate costs that extend

over 2 or more years, the analysis should consider inflation and discounting<sup>7</sup>. Adjusting for inflation means pegging price levels of ingredients to a single year. Levin et al. (2018) add that “...even for a single year program, if the prices used for ingredient valuation come from different sources, they may also need to be adjusted so that all prices are expressed in terms of the same year” (p. 94). Costs should also be discounted; that is, adjusted for their time value. “The basic idea is that costs occurring in the future are less of a burden than costs occurring in the present. Thus, we need to discount future costs to properly compare them with present costs<sup>8</sup>.” The initial version of the [Workbook](#) does not account for inflation and does no discounting.

Limitations notwithstanding, the Toolkit can be useful for school leaders and educational stakeholders who want to explore both the costs and benefits of their teacher induction programs. What follows is an enumerated list of tasks for working with the Toolkit.

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<sup>7</sup> Levin et al., (2018)

<sup>8</sup> Levin et al., (2018), p. 96

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