

# Estimating the Return on Investment (ROI) for Instructional Improvement Efforts

Step-By-Step Tool Walk-Through



January 2019

Daniel Rossman  
Rayane Alamuddin  
Martin Kurzweil

Cover photo courtesy of ACE member institution Georgia State University.

Ithaka S+R provides research and strategic guidance to help the academic and cultural communities serve the public good and navigate economic, demographic, and technological change. Ithaka S+R is part of ITHAKA, a not-for-profit organization that works to advance and preserve knowledge and to improve teaching and learning through the use of digital technologies. Artstor, JSTOR, and Portico are also part of ITHAKA.

© 2019 ACE. Authors: Martin Kurzweil, Rayane Alamuddin, Daniel Rossman of Ithaka S+R. This work is licensed under a Creative Commons Attribution-NonCommercial 4.0 International License. Readers are welcome to reproduce and disseminate this document for non-commercial use. To view a copy of the license, please see <http://creativecommons.org/licenses/by-nc/4.0/>.

ITHAKA is interested in disseminating this brief as widely as possible. Please contact us with any questions about using the report: [research@ithaka.org](mailto:research@ithaka.org).

## STEP-BY-STEP TOOL WALK-THROUGH

The American Council on Education (ACE) and Ithaca S+R have partnered to develop a tool to assist institutional leaders in understanding more fully the potential ROI for specific types of instructional improvement reforms. This document provides a step-by-step walk-through of the ROI tool to help users complete the tool and understand how its backend functions and estimates a ROI. It includes screenshots from an example of the ROI tool in use (version 1.1), comprised of hypothetical values for fictitious Ithaca S+R College. For more information on the context and methodology used to develop the tool, please refer to the accompanying overview paper.<sup>1</sup>

### Step 1: Enter Institution Information

Use the dropdown menu to select your institution’s name, or type it as it appears in IPEDS, in cell C5. If your institution has completed the IPEDS 2015–16 Finance Survey, the selection will automatically populate three values in Step 5 of the Inputs tab (see Step 5 for more details). Next, use the dropdown menu to select whether your institution is public or private, which will populate the cost of recruiting a single undergraduate on the Formulas page with either \$536, for public, or \$2,357, for private.

<b><i>What is the name of your institution?</i></b>	
	Ithaca S+R College
<b><i>Is your institution public or private?</i></b>	
	Public

### Step 2: Select Instructional Improvement Effort of Interest

Select one of two instructional improvement efforts in cell C10: corequisite remediation redesign or blended introductory coursework redesign. If you’re interested in assessing an effort not captured by either of these options, select “other.” Your selection of one of the two specific efforts will automatically populate a general definition of the effort, common components of the most impactful efforts, and specific sets of questions aimed at collecting data about the institution. The selection also informs the anticipated post-redesign student course pass rate (see Step 4 for more details).

<b><i>What instructional improvement effort are you interested in implementing?</i></b>	
	Corequisite remediation redesign

1 Both the example version 1.1. of the “ROI tool in use” and the accompanying overview paper are available for download at <https://www.acenet.edu/news-room/Pages/Instructional-Improvement-ROI-Tool.aspx>.

### Step 3: Enter Institutional Course-Level Information

#### Step 3a: Enter institutional course-level information (pre-redesign)

Input the number of students enrolled in the pre-redesign course and the number of credit hours assigned to the course. Because corequisite remediation redesign involves redesigning two courses—a prerequisite course and subsequent college-level course—if you select that reform, you must answer the two additional questions under column E (those cells are intentionally left blank if you select blended introductory coursework redesign).

Next, provide the student pass rate of the course (before redesign), and the fall-to-fall retention rate of students who pass the course and the fall-to-fall retention rate of those who don't pass the course. If you select corequisite remediation redesign, also provide the following:

- The percentage of students who enroll in the prerequisite course and then pass the subsequent college-level course within one academic year.
- The fall-to-fall retention rate of students who pass BOTH the prerequisite course and subsequent college-level course within one academic year.
- The fall-to-fall retention rate of students who do not pass both courses within one academic year.

Please note that it is unlikely that your institution will have this information readily available; it is more likely you will need to consult your IR office to conduct analyses to answer these questions. If you are unable to procure the underlying data required for this analysis, we recommend that you enter your best estimates of the retention rates requested. Fall-to-fall retention rates can be estimated by using the first-year student retention rate as a starting point and projecting differences in retention between students who passed or did not pass the relevant course(s).

Finally, provide the number of total credits per academic year that a student needs to be enrolled in at your institution to be considered a full-time equivalent (FTE) undergraduate student. Also provide the number of total credits per academic year, on average, undergraduate students at your institution enroll in. At four-year institutions, the level of instructional activity indicating full-time equivalency for undergraduate students over one academic year is typically 30 credit hours under a semester calendar, and 45 credit hours under a quarter calendar. These data are requested in order to convert counts of students to FTE students, since institutional financial information are reported per FTE.

<b>Pre-Requisite Remedial Course Enrollment &amp; Credit Hours</b>	<b>Subsequent College-Level Course Enrollment &amp; Credit Hours</b>
How many students enroll in the prerequisite course that is being redesigned (all sections)?	Of the students who enroll in the prerequisite course, how many enroll in the subsequent college-level course within the same academic year?
1000	200
How many credits does a student earn if they pass the prerequisite course?	How many credits does a student earn if they pass the college-level course?
3	3
<b>Current Student Pass Rate and Retention Rates</b>	
Of those students who enroll in the prerequisite course, what percentage ultimately pass the college-level course within one academic year?	
25%	
What is the fall-to-fall retention rate of students who enroll in the prerequisite course and ultimately pass the college-level course within one academic year?	
80%	
What is the fall-to-fall retention rate of students who enroll in the prerequisite course and do not pass the college-level course within one academic year?	
50%	
<b>Instructional Activity</b>	
How many credits in total does a student need to be enrolled in at your institution within one academic year to be considered a full-time equivalent (FTE) undergraduate student?	
30	
How many credits in total, on average, do undergraduate students at your institution enroll in within one academic year?	
26	

These data points are requested for the following two reasons: to calculate the number of FTE students currently enrolled pre-redesign and of those students, the number of students and FTE students that are retained. To first calculate the number of FTE students currently enrolled, the tool adds the number of students enrolled in the prerequisite course multiplied by the number of credit hours assigned to that course ( $1,000 \times 3 = 3,000$ ), and the number of students enrolled in the subsequent college-level course multiplied by the number of credit hours assigned to that course ( $200 \times 3 = 600$ , i.e.,  $FTE = 3,000 + 600 = 3,600$ ). This is the number of total credit hours yielded by these two courses. The result is then divided by the number of credit hours that indicates full-time equivalency to calculate the total number of FTE students generated by the pre-redesign course ( $3,600 / 30 = 120$ ).

To calculate the number of students retained, the tool divides students into two groups: those who ultimately pass the college-level course within one academic year and those who do not. The tool multiplies the number of students enrolled in the prerequisite course, the percentage of the students who enroll in the prerequisite course who ultimately pass the college-level course within one academic year, and the fall-to-fall retention rate of those students ( $1,000 \times 0.25 \times 0.80 = 200$ ). The tool also multiplies the number of students enrolled in the prerequisite course, the percentage of the students

who enroll in the prerequisite course but do not pass the college-level course within one academic year, and the fall-to-fall retention rate of those students ( $1,000 \times (1-0.25) \times 0.50 = 375$ ).<sup>2</sup> The two totals are added to calculate the number of student bodies retained, fall-to-fall, from the pre-redesign course ( $200 + 375 = 575$ ). In order to convert the student bodies to FTE students, the tool multiplies the students retained and the number of credits a student typically enrolls in at the institution within one academic year, and then divides by the number of credit hours that indicates a full-time equivalent student ( $(575 * 26) / 30 = 498$ ).

### Step 3b: Enter institutional course-level information (redesigned course)

Input the number of credits a student will earn if they pass the redesigned course. Note that we do not ask how many students you anticipate enrolling in the redesigned course, mainly because, as the tool is currently structured, the only way to ensure an accurate comparison between pre- and post-redesign retention is to look at the same course enrollment across the two time periods. Therefore, if you are interested in estimating the ROI for a scaled-up version of the redesign (e.g., the redesigned course is meant to also attract and enroll a larger number of students than the pre-redesign course), then revise your answer to the first question in Step 3a to reflect the scale-up—how many students enroll in the prerequisite course that is being redesigned. Note that the additional costs and cost savings associated with implementing the reform will need to be revised accordingly, since you will need to estimate them based on a larger hypothesized student population in the pre-redesign condition than is actually true.

<b>Credit Hours: New, Redesigned Course</b>	
<i>How many credits will a student earn if they pass the redesigned corequisite course?</i>	
	5

These values are then used to calculate the number of FTE students enrolled in the redesigned course, using the same method as the one used to calculate FTE students pre-redesign ( $1,000 \times 5 / 30 = 166.67$ ).

### Step 4: Review Anticipated Post-Effort Student Course Pass Rates

Review the estimates for the anticipated new student course pass rates, and the number of additional students retained by the new student course pass rates, as a result of the successful implementation of the instructional improvement. In addition, you can add your own estimation to reflect your expectations or existing knowledge regarding implementing this type of effort, or to explore how different changes in pass rates impact the effort's ROI. If you select "Other," enter your own anticipated student pass rate, as the estimated new student pass rates will not be pre-populated.

<sup>2</sup> Student counts that are not integers are rounded down to the nearest whole number while FTE student totals are not.

<b>Estimated student pass rates for the new, redesigned course</b>	
<b>Estimated New Student Pass Rate</b>	
Lower Bound	Upper Bound
57%	65%
<b>Number of Additional Students Retained</b>	
Lower Bound	Upper Bound
96	120
<b>User's Anticipated Student Pass Rate [Optional]</b>	
50%	
<b>Number of Additional Students Retained [Optional]</b>	
75	

In order to predict the post-redesign course pass rates for each instructional improvement effort included in the tool, we first compiled all valid data points from the literature that provide a pre-effort and post-effort course pass rate.<sup>3</sup> Next, for each type of effort, we regressed the post-effort pass rates (y, or dependent variable) on the pre-effort pass rates (x, or independent variable) to form a “best fit line” that estimates the relationship between the pre-effort pass rates and post-effort pass rates. Rather than employ one single estimation, we use a range of slopes, based on the 50 percent confidence interval, to predict lower bound and upper bound estimations of the post-effort pass rate. We then use the pre-effort course pass rate provided by the user in Step 3 to predict the lower bound and upper bound post-effort course pass rates for the given institution.

It is important to note that a majority of the empirical studies on corequisite remediation looked at pre-requisite courses with poor pass rates and found a large, positive effect after the redesign. As a result, pre-requisite pass rates greater than 45 percent will yield a lower bound estimated student pass rate that is smaller than the initial rate. Therefore, for the most reasonable results assessing corequisite remediation, the percentage of students who enroll in the prerequisite courses that ultimately pass the college-level course within one academic year should be less than 45 percent. For blended introductory coursework redesign, that number is about 80 percent.

The regression of the corequisite remediation redesign post-effort pass rates on the pre-effort pass rates yields a constant, or y-intercept (b), of 0.586, a lower bound slope of -0.059 (m), and an upper bound slope of 0.265 (m). The pre-effort pass rate is 25 percent, or 0.25 (x). Using the equation of a line ( $y=mx+b$ ), we can solve for y.

$$\text{Lower bound estimate: } y = (-0.059)(0.25) + 0.586 = 0.57$$

$$\text{Upper bound estimate: } y = (0.265)(0.25) + 0.586 = 0.65$$

3 Tables 1 and 2 in Appendix A of the overview paper present each of these data points for each type of effort, and the sources of those data.



In other words, the lower bound estimated new student pass rate is 57 percent and the upper bound estimated student pass rate is 65 percent. To calculate the number of additional students retained, the tool first calculates the new total number of students retained. The tool replaces the 25 percent original course pass rate with the new estimated student pass rates and, using the same formula as before, calculates the number of students retained among the students who enroll in the prerequisite course and pass the college-level course within one academic year, and the number of students retained among the students who enroll in the prerequisite course and do not pass the college-level course within one academic year.

Lower bound:  $1,000 \times 0.57 \times 0.80 = 456$ ;  $1,000 \times (1-0.57) \times 0.50 = 215$ ;  $456 + 215 = 671$

Upper bound:  $1,000 \times 0.65 \times 0.80 = 520$ ;  $1,000 \times (1-0.65) \times 0.50 = 175$ ;  $520 + 175 = 695$

The tool then subtracts the number of students typically retained prior to the redesign to calculate the number of additional students retained.

Lower bound:  $671 - 575 = 96$

Upper bound:  $695 - 575 = 120$

If the user enters his or her own student pass rate, the tool employs the same method to calculate the number of additional students retained by that student course pass rate. In this example, the administrator entered 50 percent, which yielded 75 additional students retained.

### Step 5: Enter Institutional Financial Information

Enter the following institutional financial information for the student population that would be affected by the effort:

1. net tuition and fees revenue, per FTE
2. state and local appropriations, per FTE
3. education and related expenses, per FTE

Institutional-wide averages, collected from the IPEDS 2015–16 finance survey, are included for those institutions that completed and submitted that survey to IPEDS. If you would prefer, you can rely on those numbers instead. Those institutions that did not report such data to IPEDS must enter data in the student target population column, as the tool has no other source of financial information to incorporate in its calculations.



<b><i>Institution-Wide Averages</i></b>	<b><i>Target Student Population</i></b>
<i>Net tuition and fees revenue per FTE student in FY16</i>	<i>Net tuition and fees revenue per FTE student</i>
Data not reported to IPEDS	\$5,500.00
<i>State and local appropriations per FTE student in FY16</i>	<i>State and local appropriations per FTE student</i>
Data not reported to IPEDS	\$8,500.00
<i>Education and related expenses per FTE student in FY16</i>	<i>Education and related expenses per FTE student</i>
Data not reported to IPEDS	\$15,000.00

All finance-related measures are collected from the IPEDS 2015–16 Finance Survey, which represents the 2016 fiscal year. The remaining measure, 12-month full-time equivalent (FTE) enrollment, which includes undergraduates, graduates, and doctoral professional students, is collected from the IPEDS 2015–16 12-month Enrollment Survey.

Net tuition and fees revenue per FTE = (tuition and fees after deducting discounts and allowances - all institutional grants) / 12-month FTE enrollment

State and local appropriations per FTE = (state appropriations + local appropriations) / 12-month FTE enrollment

Education and related expenses per FTE (as defined by the Delta Cost Project) = (instruction + student services + (education\_share\*(academic support + institution support + operation/maintenance))) / 12-month FTE enrollment

Where education\_share = (instruction + student services) / (instruction + student services + research + public service)

Regardless of student outcomes, a change in the number of FTE students can have an impact on institutional finances. In this example, the number of FTE students grew from 120 to 166.67 by virtue of the course redesign itself (see Steps 3a and 3b above). Since the education and related expenses per FTE are greater than the sum of the tuition revenue and state and local appropriations per FTE at Ithaca S+R College, the growth in FTE leads to a financial loss. To calculate this, the tool multiplies the pre-effort FTE by the tuition revenue and adds that to the multiplication of the pre-effort FTE and state and local appropriations ((120 x \$5,500) + (120 x \$8,500) = \$1,680,000). Similarly, the tool multiplies the pre-effort FTE by the education-related costs (120 x \$15,000 = \$1,800,000). To calculate the net revenue, the tool subtracts the education-related costs from the tuition and appropriations total (\$1,680,000 - \$1,800,000 = -\$120,000). The tool calculates the net revenue based on the post-effort FTE (166.67) using the same method as above (\$2,333,333.33 - \$2,500,000 = -\$166,666.67), resulting in the following: -\$166,666.67 + \$120,000 = -\$46,666.67. This translates into a financial loss of \$46,666.67 due to growth in FTE.

**Step 6: Enter Effort-Related Costs and Cost Savings**

Answer three questions about additional initial one-time direct costs, additional average annual recurring costs, and average recurring annual cost savings. Each section provides common sources of such costs, as well as examples of outcomes that may lead to cost savings. Enter amounts by category; costs that are not captured by such categories should be summed and entered in the “all other” cell. It is important to note that these are initial and recurring costs associated with the reform that the institution would not otherwise incur.

<b><i>Additional initial one-time direct costs</i></b>
<b><i>What is the additional initial one-time direct cost to your institution, for each of these components, of designing and implementing corequisite remediation?</i></b>
<i>Release time for staff</i>
\$100,000.00
<i>Professional development</i>
\$100,000.00
<i>Equipment, including software</i>
\$40,000.00
<i>All other initial, one-time direct costs</i>
\$35,000.00
<b><i>Additional average annual recurring costs</i></b>
<b><i>What is the additional average annual recurring direct cost to your institution, for each of these components, that would not be otherwise incurred?</i></b>
<i>Release time for staff</i>
\$50,000.00
<i>Professional development</i>
\$40,000.00
<i>Equipment, including software</i>
\$10,000.00
<i>All other recurring direct costs</i>
\$40,000.00

The Ithaca S+R College administrator anticipates spending \$275,000 in initial one-time direct costs and \$140,000 in average annual recurring direct costs that they would not have otherwise spent if it were not for the effort. The sum of these two totals equals the additional cost of the effort (i.e., direct investment in the effort).

<b>Average recurring annual cost savings</b>	
<b>What is the average annual dollar amount, for each of these potential cost-saving components, that you anticipate no longer having to spend due to this effort?</b>	
<i>Elimination of course sections</i>	
	\$15,000.00
<i>Reduction in release time for staff</i>	
	\$0.00
<i>Reduction in staff salaries and benefits</i>	
	\$0.00
<i>All other cost savings</i>	
	\$20,000.00

According to this table, Ithaca S+R College will save, on average, \$35,000 per year due to the implementation of corequisite remediation redesign, irrespective of a change in student outcomes. Rather than be subtracted from the total additional cost, this total is added to the additional net revenue side of the equation.

### Step 7: Select Institution's Enrollment Strategy

Use the dropdown menu to select the answer that best describes how your institution would respond to the number of additional students retained, as noted in Step 4 (the tool provides the range to help think through this question).

- A. By enrolling fewer first-year students to fully offset the increase in the number of students retained, resulting in the same level of overall enrollment expected prior to the implementation of the effort
- B. By enrolling the same number of first-year students it would have enrolled regardless of the impact of the effort, thereby increasing its overall enrollment by the number of students additionally retained
- C. By enrolling fewer first-year students but not to completely offset the increase in the number of students retained, resulting in a slight increase in overall enrollment

If you select option C, you will be asked the following question:

- You have indicated that your institution would respond by enrolling fewer first-year students but not to completely offset the increase in retention. How many first-year students do you anticipate no longer enrolling because of this retention increase?

<i>To the best of your knowledge, how would your institution respond to a 96 to 120 student fall-to-fall retention increase, as a result of the remedial course redesign?</i>	
	<i>B</i>
<i>[intentionally blank]</i>	

As noted in Step 4, based on the information the user has provided, as well as the empirical literature, Ithaca S+R College could expect to enroll between 90 and 120 additional students the following year. Based on this information, the administrator believes that due to the relatively small increase in retention, Ithaca S+R College would enroll the same number of first-year students it would have enrolled regardless of the impact of the effort, thereby increasing its overall enrollment by the number of students additionally retained. As such, there is no follow-up question.

Because the institutional finances entered in Step 5 are in FTE, the number of additional students retained needs to be converted to FTE. Using the same formula as before, the 96 to 120 students retained are multiplied by the expected number of credit hours a student who requires remediation typically enrolls in, and the result is divided by the level of instructional activity that indicates FTE.

Lower bound:  $96 \times 26 / 30 = 83.2$

Upper bound:  $120 \times 26 / 30 = 104$

Since the administrator has indicated that the level at which the institution enrolls first-year students will not change, the institution will enroll between 83.2 and 104 additional FTE students. To calculate the additional tuition revenue generated by that retention, the tool multiplies each value by the average net tuition revenue per FTE that was entered in Step 5.

Lower bound:  $83.2 \times \$5,500 = \$457,600$

Upper bound:  $104 \times \$5,500 = \$572,000$

To calculate the additional appropriations generated by an increase in enrollment, the tool multiplies the same values by the state and local appropriations total per FTE that were entered in Step 5.

$$\text{Lower bound: } 83.2 \times \$8,500 = \$707,200$$

$$\text{Upper bound: } 104 \times \$8,500 = \$884,000$$

To calculate the additional cost incurred to educate the additional students enrolled, the same values are multiplied by the education and related expenses total entered in Step 5. That total is then multiplied by 0.70, since it takes fewer resources to educate additional students than it does the average student, producing the below formula.

$$\text{Lower bound: } 83.2 \times \$15,000 \times 0.70 = \$873,600$$

$$\text{Upper bound: } 104 \times \$15,000 \times 0.70 = \$1,092,000$$

Selecting either A or C indicates that the institution would enroll fewer first-year students than it otherwise would. This would result in cost savings because the institution would not have to spend as much on recruiting students. Choice A results in the largest decline in the number of first-year students, equaling the additional number of students retained. Note that this is not FTE students because recruitment of students is by bodies, not FTE, since an institution has no way of knowing how many credits a student will register for. To calculate the cost savings, the tool multiplies the number of additional students retained and the cost of recruiting a single undergraduate.

$$\text{Lower bound: } 96 \times \$536 = \$51,456$$

$$\text{Upper bound: } 120 \times \$536 = \$64,320$$

It then adds those totals to the average recurring annual cost savings entered in Step 6.

$$\text{Lower bound: } \$35,000 + \$51,456 = \$86,456$$

$$\text{Upper bound: } \$35,000 + \$64,320 = \$99,320$$

Choice C is a mix of both A and B. If C is selected, you will be asked to indicate how many first-year students you anticipate no longer enrolling because of the increase in retention. That number is multiplied by the cost of recruiting a single undergraduate and then added to the average recurring annual cost savings in Step 6 to find the total cost savings. In addition, the number of first-year students that you indicate not enrolling is also subtracted from the additional number of students retained to find the increase in enrollment the following year, which is then converted to FTE and the tool then follows the same steps as if you selected option B.

## Estimating the Return on Investment for Instructional Improvement Efforts

1 Year	3 Years	5 Years
<i>Estimated Additional Net Revenue (Lower Bound)</i>	<i>Estimated Additional Cumulative Net Revenue (Lower Bound)</i>	<i>Estimated Additional Cumulative Net Revenue (Lower Bound)</i>
\$279,533.33	\$838,600.00	\$1,397,666.67
<i>Estimated Additional Net Revenue (Upper Bound)</i>	<i>Estimated Additional Cumulative Net Revenue (Upper Bound)</i>	<i>Estimated Additional Cumulative Net Revenue (Upper Bound)</i>
\$352,333.33	\$1,057,000.00	\$1,761,666.67
<i>Estimated Additional Net Revenue (User-Inputted)</i>	<i>Estimated Additional Cumulative Net Revenue (User-Inputted)</i>	<i>Estimated Additional Cumulative Net Revenue (User-Inputted)</i>
\$215,833.33	\$647,500.00	\$1,709,166.67
<i>Estimated Additional Costs (Lower Bound)</i>	<i>Estimated Additional Cumulative Costs (Lower Bound)</i>	<i>Estimated Additional Cumulative Costs (Lower Bound)</i>
\$415,000.00	\$695,000.00	\$975,000.00
<i>Estimated Additional Costs (Upper Bound)</i>	<i>Estimated Additional Cumulative Costs (Upper Bound)</i>	<i>Estimated Additional Cumulative Costs (Upper Bound)</i>
\$415,000.00	\$695,000.00	\$975,000.00
<i>Estimated Additional Costs (User-Inputted)</i>	<i>Estimated Additional Cumulative Costs (User-Inputted)</i>	<i>Estimated Additional Cumulative Costs (User-Inputted)</i>
\$415,000.00	\$695,000.00	\$975,000.00
<i>Estimated ROI (Lower Bound)</i>	<i>Estimated ROI (Lower Bound)</i>	<i>Estimated ROI (Lower Bound)</i>
-32.64%	20.66%	43.35%
<i>Estimated ROI (Upper Bound)</i>	<i>Estimated ROI (Upper Bound)</i>	<i>Estimated ROI (Upper Bound)</i>
-15.10%	52.09%	80.68%
<i>Estimated ROI (User-Inputted)</i>	<i>Estimated ROI (User-Inputted)</i>	<i>Estimated ROI (User-Inputted)</i>
-47.99%	-6.83%	10.68%

### Estimated Returns

#### One Year After Implementation

To calculate the estimated additional net revenue, the tool adds up the following items:

Additional tuition revenue generated by the retention

Lower bound: \$457,600

Upper bound: \$572,000

Additional appropriations generated by the retention

Lower bound: \$707,200

Upper bound: \$884,000

Cost savings

Lower bound: \$35,000

Upper bound: \$35,000

Net revenue change generated from change in FTE

\$-46,666.67

And subtracts the following:

**Additional cost incurred by the retention**

Lower bound: \$873,600

Upper bound: \$1,092,000

This results in an estimated additional net revenue, after one year of implementation, between \$279,533.33 and \$352,333.33.

To calculate the estimated additional costs, the tool adds the following items:

**Additional initial one-time direct costs (\$275,000)**

**Additional average annual recurring costs (\$140,000)**

This results in estimated additional costs, after one year of implementation, of \$415,000.

To calculate the ROI, the tool subtracts the additional costs from the additional net revenue, and divides the result by the additional costs.

Lower bound:  $(\$279,533.33 - \$415,000) / \$415,000 = -32.64\%$

Upper bound:  $(\$352,333.33 - \$415,000) / \$415,000 = -15.10\%$

**Three and Five Years after Implementation**

To calculate the estimated additional cumulative net revenue three and five years after implementation, the tool multiplies each estimated additional net revenue, after one year of implementation, by three and five, respectively.

To calculate the estimated additional cumulative costs three and five years after implementation, the tool multiplies the additional average recurring costs, after one year of implementation, by three and five, respectively, and then adds the additional initial one-time direct costs.

The same method is used to estimate the ROI for the anticipated student pass rate that you have the option of entering.



**ACE**<sup>®</sup> American  
Council on  
Education<sup>®</sup>