

COST ANALYSIS AND 2024 IES RFAs

August 29, 2023

Welcome! We will start shortly.

**Please feel free to submit
questions via the chat while you
wait.**

1



Agenda for Session

- Welcome
- Overview of the CAP Project and team introductions
- IES requirements and recommendations for NCER and NCSER RFAs
- Overview of cost analysis (CA) and cost-effectiveness analysis (CEA)
- Recommendations on how to respond to the RFA
- Questions and Answers

 CAP Project

JAUNELLE

“Good afternoon and thank you for joining us. Before we begin, we ask everyone to please mute your microphone until the Q&A. If you have a question before then, please use the chat to share it with everyone. We will try to answer a few questions from the chat as we go along.

Welcome. I am Jaunelle Pratt-Williams from NORC at the University of Chicago where I am a Senior Research Scientist, and I was the co-PI for the CAP Project. The main goals for today are to provide some guidance and allow you to ask questions as you plan for a cost analysis or cost-effectiveness analysis in your grant application. We will briefly spend some time introducing the team and provide an overview of resources from the CAP Project. We will share the RFA requirements and recommendations, an overview of economic evaluations, and provide suggestions on how to respond to the RFA. We will share CAP Project resources along the way that can help you plan and conduct your analysis. We will use the Q&A time to answer questions starting with the questions you submitted in advance.”



The CAP Project Team for Today



Fiona Hollands
EdResearcher



Jaunelle Pratt-Williams
NORC at the University of Chicago



Rob Shand
American University



Katherine (Katie) Taylor
NCSER
IES

JAUNELLE

Talking points: “We have a few members from the CAP Project team here today and we each will introduce ourselves. As I mentioned, I am Jaunelle Pratt-Williams and I will pass it over to Fiona.” ... *each person introducing themselves up to Rob.*

“We are grateful to also have Katie Taylor, a Program Officer at the *National Center for Special Education Research*, join us today to answer specific questions about the RFAs and expectations for the cost analysis and cost effectiveness analysis.”



The Cost Analysis in Practice (CAP) Project



- Three-year initiative funded by IES (2020-2023).
- Provided free, on-demand tools, guidance, and technical assistance to researchers and practitioners who are planning or conducting economic evaluations.
- More Information and resources at <https://capproject.org/>.

JAUNELLE

The Cost Analysis in Practice (CAP) Project was a three-year initiative funded by the Institute of Education Sciences, U.S. Department of Education. A key goal for the project was to support IES applicants and grantees in meeting one of the 9 SEER standards: analyzing interventions costs. We provided free, on-demand tools, guidance, and technical assistance to researchers and practitioners who were planning or conducting economic evaluations. The project website capproject.org remains active and is where you can find more information and resources...

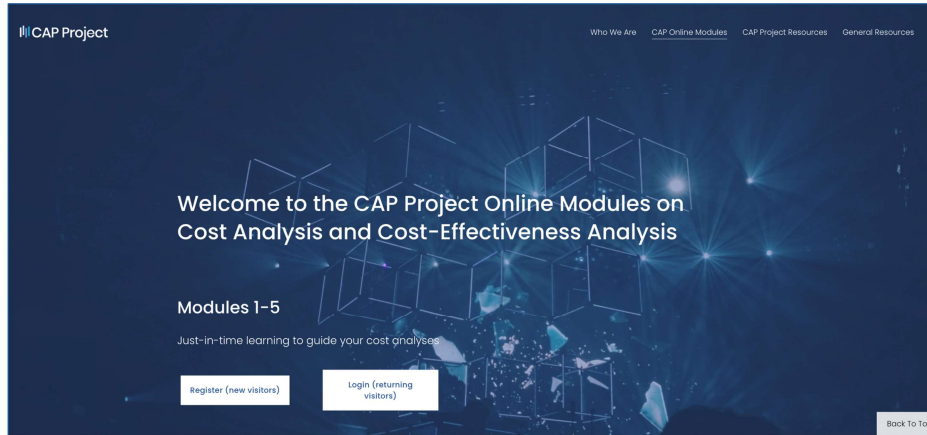


CAP Project Online Modules



JAUNELLE

...such as our Online Modules, which provide an overview of economic evaluations, how to carry out each stage of a cost analysis, and how to use the CAP Project resources. Each module includes a series of short videos by topic.



JAUNELLE

Module 1 provides an introduction to cost analysis and Module 2 covers designing a cost analysis, which should be helpful to you at the proposal stage. Modules 3-5 cover data collection, analysis and reporting, which will be useful when you are funded.

Inside IES Research Blog

- <https://ies.ed.gov/blogs/research/post/ha-ve-a-cost-analysis-to-plan-or-execute-we-have-a-module-for-that>

Have a Cost Analysis to Plan or Execute? We Have a Module for That

July 25, 2023 | Blog Editor | NCER



This blog is part of a guest series by the Cost Analysis in Practice (CAP) project team.

Analyzing an intervention's costs is one of IES's nine SEER principles. Cost analysis is not just about the dollar value of an intervention; it provides key information to education decision-makers about the personnel, materials, facilities, and other inputs needed to implement an intervention or

JAUNELLE

Check out the IES blog from the CAP Project to learn more about specific videos that could help at this stage and to read more about the content in the 5 modules.



Cap Project Resources

||| CAP Project

Who We Are CAP Online Modules **CAP Project Resources** General Resources

CAP Project Resources

These resources were initially developed under the [CAP Project grant](#) (May 2020 - April 2023) and are currently maintained by [EdResearcher](#).

Need help deciding what kind of economic evaluation to do? Watch this short video from the CAP Project Online Modules which narrates you through a decision flowchart to help you land on the best option for answering your research questions.

Decision Flowchart Video

JAUNELLE

On the website, you can also access the CAP Project Resources page where you will find...



Resources to Get Started

Getting Started with Cost Analysis

CAP Project Cost Analysis Standards
Guidelines for designing and conducting cost analyses of educational programs.
Guidelines

CAP Project Infographic
This infographic provides an overview of what the CAP Project is, a visual summary of the steps in a cost analysis and links to a number of resources to get you started towards designing and conducting a cost analysis yourself.
Infographic

Introduction to Cost Analysis Video
In this video, Dr. Rob Shand of the CAP Project provides an overview of cost analysis, why it is useful, and the different types of cost analysis. He also uses an example of digital math tools to demonstrate the difference between expenditures and economic costs.
Watch Video

Cost Analysis FAQs
A compilation of responses to the most common cost analysis questions the CAP Project Help Desk has been asked to date. If your question isn't answered here, submit your own request here.
FAQs

Inside ES: CAP Project Blog Posts
Researchers at the CAP Project are guest writing a series of ES blog posts about the practical details of economic evaluation. Read the blogs here.
Blog Posts

CASP Standards Template
The CASP Standards Rubric helps cost analysts and reviewers of journal manuscripts/grant proposals/study reports meet the [Standards for the Economic Evaluation of Educational and Social Programs](#).
CASP Standards Template

Planning your Cost Analysis

Cost Analysis Requirements in ES 2023 RFA
This chart summarizes CAP Project's interpretation of what ES 2023 RFA are requiring in terms of cost analysis and CEA.
Requirements

Checklist for Cost Analysis Plans
Use this checklist to guide your cost analysis plans. It is designed to help users plan high quality cost analyses of educational programs/interventions.
Checklist

Timeline for Cost and Cost-Effectiveness Analysis
This timeline outlines all activities involved in ensuring cost and cost-effectiveness analyses concurrently with impact studies.
Timeline

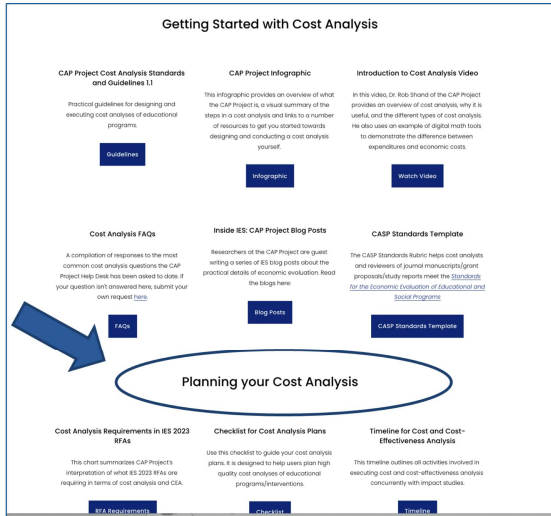
- Templates, guidance and resources at <https://capproject.org/>

JAUNELLE

...templates, guidance, and other resources for getting started with cost analysis,



Resources for Planning



- Templates, guidance and resources at <https://capproject.org/>

JAUNELLE

“...and for planning, executing, and reporting your cost analysis. As I mentioned, we will highlight some of these tools today throughout the session.”



IES COST ANALYSIS AND COST-EFFECTIVENESS ANALYSIS REQUIREMENTS AND RECOMMENDATIONS

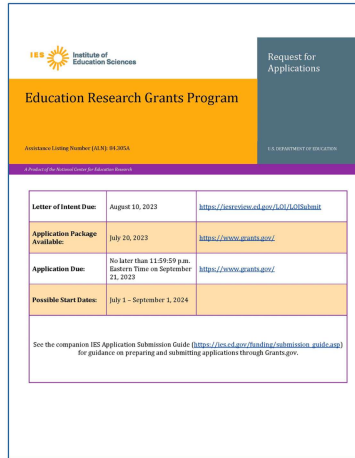
||| CAP Project

JAUNELLE

Before we move on, Rob are there any questions in the chat?

Now, Katie will share requirements for cost analysis or cost-effectiveness analysis and recommendations from IES for strong applications. Rob and I will follow with an overview of economic evaluations before Fiona shares suggestions on how to respond to the RFA.

Considerations for the 84.305A RFA and 84.324A RFA



IES Institute of Education Sciences
Request for Applications

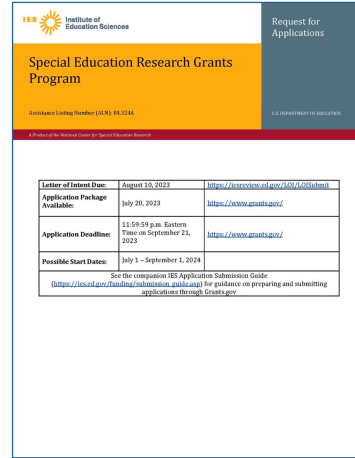
Education Research Grants Program

Assistance Listing Number (ALN): 84.305A
U.S. DEPARTMENT OF EDUCATION

A Product of the National Center for Special Education Research

Letter of Intent Due:	August 10, 2023	https://www.ies.ed.gov/FOUO/OSIS/submit
Application Package Available:	July 20, 2023	https://www.grants.gov/
Application Due:	No later than 11:59:59 p.m. Eastern Time on September 21, 2023	https://www.grants.gov/
Possible Start Dates:	July 1 - September 1, 2024	

See the companion IES Application Submission Guide (https://ies.ed.gov/funding/submission_guide.asp) for guidance on preparing and submitting applications through Grants.gov.



IES Institute of Education Sciences
Request for Applications

Special Education Research Grants Program

Assistance Listing Number (ALN): 84.324A
U.S. DEPARTMENT OF EDUCATION

A Product of the National Center for Special Education Research

Letter of Intent Due:	August 10, 2023	https://www.ies.ed.gov/FOUO/OSIS/submit
Application Package Available:	July 20, 2023	https://www.grants.gov/
Application Deadline:	11:59:59 p.m. Eastern Time on September 21, 2023	https://www.grants.gov/
Possible Start Dates:	July 1 - September 1, 2024	

See the companion IES Application Submission Guide (https://ies.ed.gov/funding/submission_guide.asp) for guidance on preparing and submitting applications through Grants.gov.

KATIE



Measurement (84.305A & 84.324A)

Requirement: None

Recommendation: You are encouraged to develop a cost analysis plan that describes how you will estimate the costs to implement the fully developed and/or validated assessment.

- If you include a cost analysis plan, describe your plan to determine the quantity, quality, and value of all resources needed to implement the assessment as intended given the implementation context (setting, education personnel, and target population).
- The RFA lists key information that should be included in the plan.

KATIE



Exploration (84.305A & 84.324A)

Requirement: None

Recommendation: None. There is no reference to cost analysis beyond the mention of SEER.

KATIE



Development and Innovation (84.305A & 84.324A)

Requirement: Describe a plan to determine the costs to implement the fully developed intervention in the context of the pilot study.

Recommendation: Describe your plan to collect data on and estimate the costs of resources needed to implement the intervention in your study.

- The RFA lists key information that should be included in the plan.

KATIE



Impact (84.305A & 84.324A)

Requirement: In your research plan, you must describe your

- Cost analysis plan or a rationale for why a cost analysis cannot be done
- Cost-effectiveness analysis plan or a rationale for why a cost-effectiveness analysis cannot be done

Recommendation:

Cost analysis - Describe your plan to collect data on and estimate the costs of resources needed to implement the intervention in your study.

- For follow-up studies, if a rigorous cost analysis has already been completed for the same program, practice, or policy in a similar context, you may rely on that cost analysis. In such a case, provide the findings of the previous cost analysis and show that it applies to the same intervention and context you propose examining for follow-up impacts.

The RFA lists key information that should be included in the plan.

KATIE



Impact (84.305A & 84.324A) continued

Recommendation:

Cost-effectiveness - Describe how you will combine cost data with impact data to create a cost-effectiveness ratio in order to provide information about the costs to achieve a particular impact when using a particular program, practice, or policy.

- CEA is required only for the primary learner outcome(s).

The RFA lists key information that should be included in the plan.

KATIE



WHAT IS COST ANALYSIS (CA) AND COST-EFFECTIVENESS ANALYSIS (CEA)?

||| CAP Project

JAUNELLE TO PAUSE US WITH ANY QUESTIONS/CLARIFICATIONS THAT NEED ADDRESSING RIGHT AWAY, THEN TEES UP ROB.

ROB

“Thank you, Katie and Jaunelle. With the RFA requirements in mind, let’s briefly discuss ‘what is a cost analysis and a cost-effectiveness analysis’.”



What is Cost Analysis?

- A form of economic evaluation
- Type, quantity, and value of all resources used to achieve or replicate a measured effect or outcome
- Applied to educational programs or interventions, it identifies resources needed for implementation
 - [Ingredients method \(introduced by Henry Levin, 1975\)](#)

ROB

“A cost analysis is a form of economic evaluation in which you carefully document the type, quantity, and value of all resources needed to achieve or replicate a measured effect or outcome.

In education research, we often evaluate specific programs or interventions that are intended to produce improvements in student or teacher outcomes. Relevant cost analyses would identify what new and existing resources are needed to implement the program or intervention in order to produce those outcomes.

The established way of ascertaining the costs of an educational program is the ingredients method, developed by Henry Levin in 1975. The basic idea is to identify every resource or “ingredient” needed to implement a program, figure out how much you need of each one, and place a dollar value on it. “



Ingredients Method: Categories of Resources

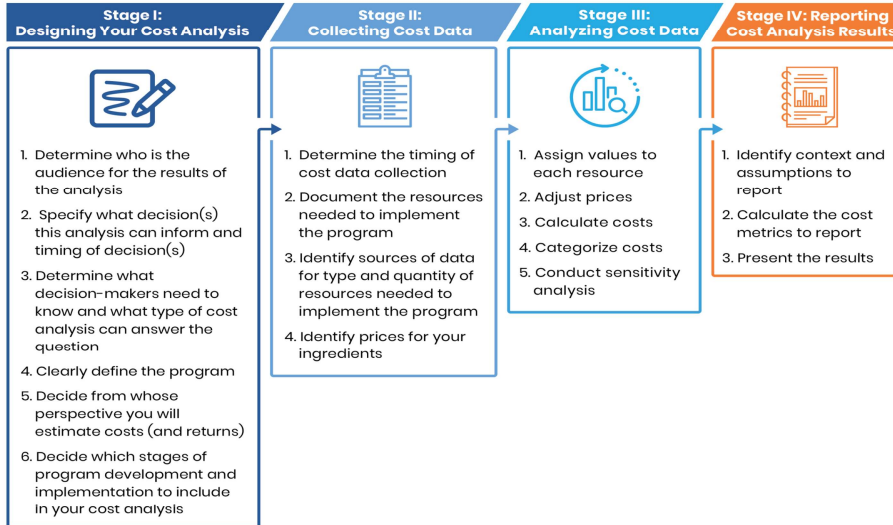


ROB

“The ingredients needed to implement educational programs can be categorized as personnel, which often comprises 80% or more of the costs of educational programs, facilities, materials, and other inputs such as transportation. “



Stages of a Cost Analysis



ROB

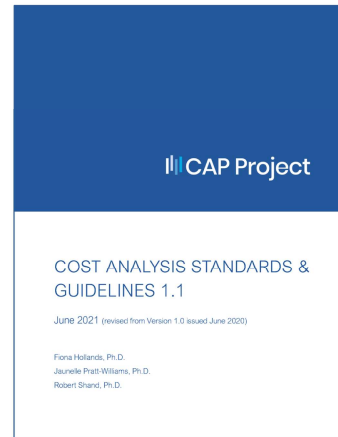
“This graphic captures the 4 stages of a cost analysis. You can find these stages and a detailed description ...”

CAP Project Cost Analysis Standards and Guidelines 1.1



- Practical guidelines for designing and executing cost analyses of educational programs
- <https://capproject.org/resources>

 CAP Project

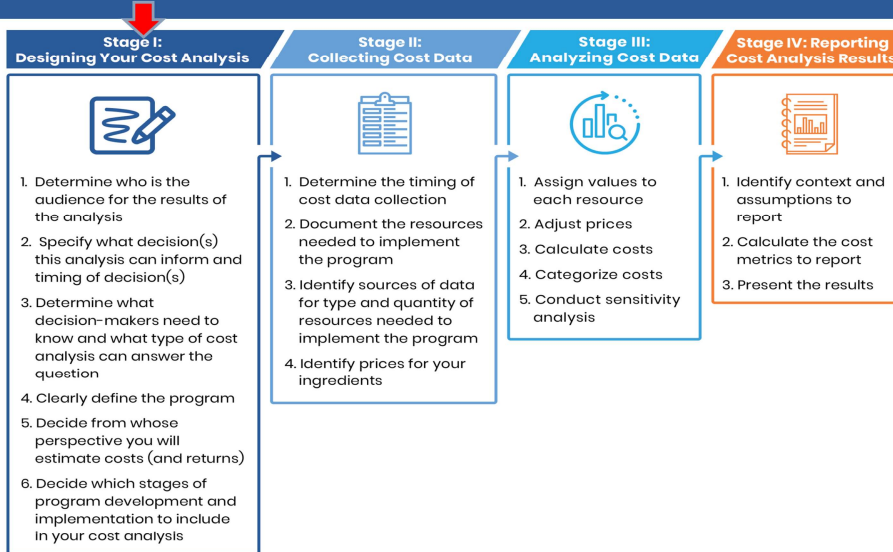


Rob

“... in the CAP Project Guidelines on the CAP Project resources page.”



Stages of a Cost Analysis

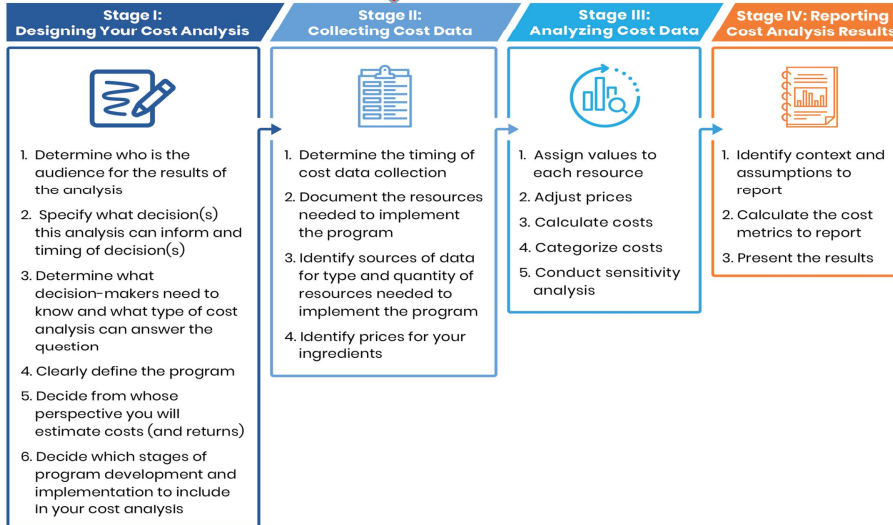


ROB

“Stage 1 is Designing your Cost Analysis”



Stages of a Cost Analysis

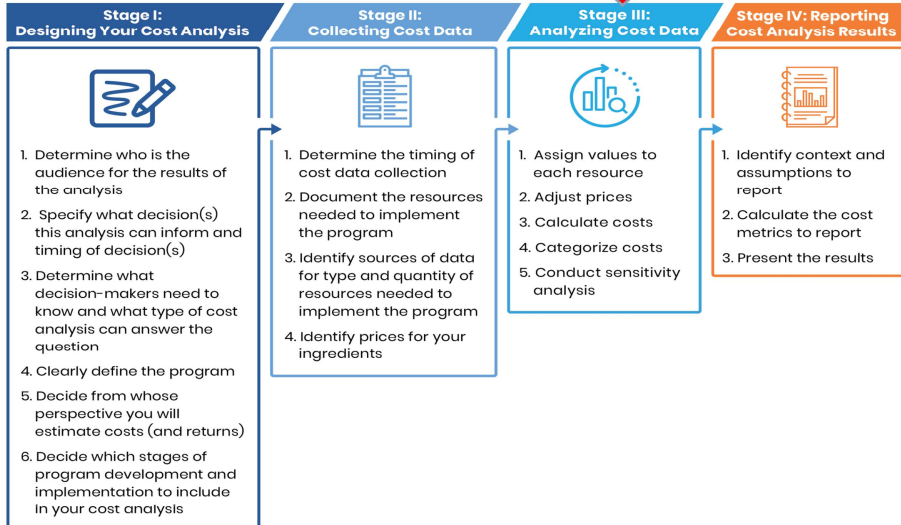


Rob

“Stage 2 is Collecting Cost Data”



Stages of a Cost Analysis

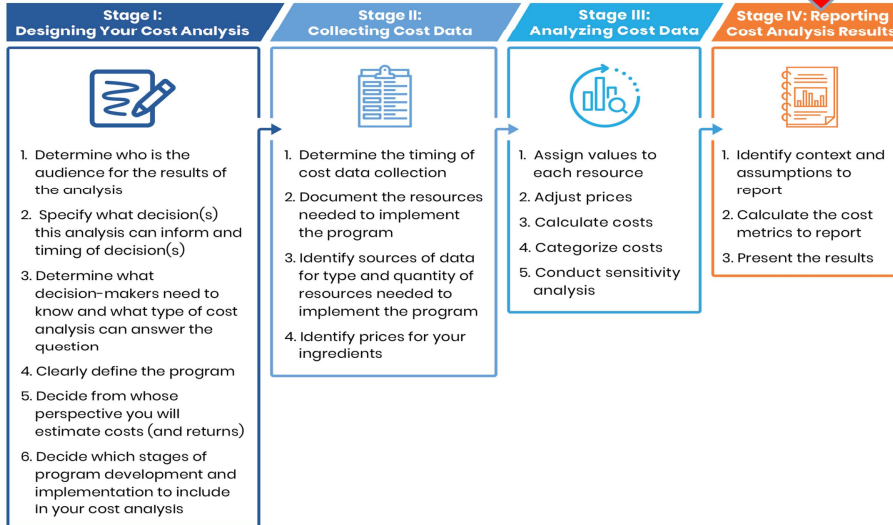


Rob

“Stage 3 is Analyzing Cost Data, and”



Stages of a Cost Analysis



Rob

“And Stage 4 is Reporting Cost Analysis Results.”



Stage 1: Designing a CA/CEA

- Key considerations for the design stage:
 - The study motivation and context
 - Descriptive information to clearly define the program and how it should be implemented
 - The plan for your study

|||CAP Project

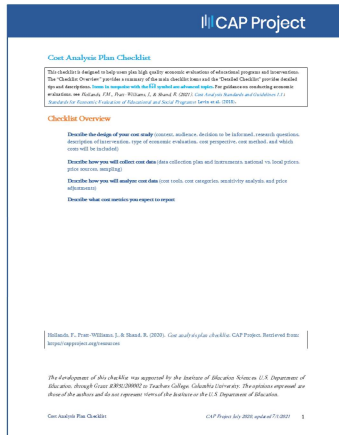
Rob

“As Jaunelle noted, CAP Project’s Online Module 2 focuses on designing a cost analysis and provides a lot of guidance about this stage. Some of the key considerations are

1. Study motivation and context which includes identifying the research question, the type of economic evaluation, the audience, timing of the analysis which often is concurrently with implementation for IES funded grants, and the perspective for the analysis, or whose costs to include.
2. Descriptive information to clearly define the program and how it should be implemented
3. The plan for your study such as specifying *how you will collect data, when, and from where, and how you will analyze the data and report results.*

Videos 2 and 3 in Module 2 focus on these three topics.”

Checklist for Cost Analysis Plans



CAP Project

Rob

“To help with Stage 1, Designing a Cost Analysis, the CAP Project created a checklist for cost analysis plans which aims to ensure you have thought about all important study design issues.”

Checklist and Timeline for Cost Analysis Plans

||| CAP Project

Cost Analysis Plan Checklist

This checklist is designed to help you plan high quality economic evaluation of educational program and interventions. The Checklist Overview provides resources of the cost analysis tool. The Checklist Overview provides detailed information on activities, tasks, timelines, and deliverables. The checklist is designed to be used in conjunction with the CAP Project website. The checklist is designed to be used in conjunction with the CAP Project website.

Checklist Overview

Describe the design of your cost analysis instrument, including decisions to be followed, research questions, description of data collection, type of economic evaluation, cost perspective, cost method, and which cost will be included.

Describe how you will collect cost data (from collecting plan and instruments, national vs. local prices, price review, sampling).

Describe how you will analyze cost data (cost tools, cost categorization, analysis by activity and price adjustment).

Describe what cost centers you expect to report.

Hollands, F., Pate-Williams, J., & Bland, S. (2020). Cost analysis plan checklist. CAP Project. Retrieved from <https://capproject.org/resources>

The development of this checklist was supported by the Institute of Education Sciences, U.S. Department of Education, through Grant #IERS0000100 to Teachers College, Columbia University. The opinions expressed are those of the authors and do not represent views of the Institute or the U.S. Department of Education.

Cost Analysis Plan Checklist CAP Project July 2020 updated 7/1/2022 1

||| CAP Project

TIMELINE OF ACTIVITIES FOR COST ANALYSIS

This document provides guidance to applicants for the sequencing of activities required to conduct a cost analysis or cost effectiveness analysis (CEA). The timeline is designed for a 3-year study such as an RCT efficacy or effectiveness program in which a cost analysis or CEA is conducted concurrently with the impact study of the intervention(s) being evaluated. It assumes that three cohorts of participants are tracked each for one year during Year 0 of the program. Year 0 is spent planning and recruiting. Year 1 is spent on analysis, reporting and dissemination. The timeline also assumes that separate research teams will conduct implementation, activity, evaluation of implementation and impact, and cost analysis/CEA. Accordingly, coordination between the teams is built in. Cost analysis should align these guidelines as needed if the same personnel are conducting multiple aspects of the work. If the project is shorter, longer or more cohorts are tracked and if the cost analysis is prospective or retrospective rather than concurrent with the impact analysis for the RCT, consult technical assistance about cost analysis and CEA, submit a request to CAP Project team.

Year 1: Planning and design of data collection instruments

1. Engage Participants in IRB application, data sharing agreement, kick off and monthly knowledge meetings, set up secure data systems (e.g., SharePoint).
2. Establish a quarterly cost analysis meeting with the implementation team and other evaluation teams.
3. Review any existing cost analysis and cost centers for the same or similar interventions to inform cost analysis strategy.
4. Design time logs for the implementation team and any other project personnel who participate in any activity requiring implementation activities. (When there is high quantity).
5. Review descriptions of the intervention(s) being studied from past implementation studies, prior project reports, websites, etc. to gather details of implementation requirements.
6. Create a cost analysis worksheet and begin populating spreadsheets with an initial list of expenditures required to implement the program (personnel time, materials, equipment, facilities, etc.) Organize by cost analysis by component or activity (e.g., training, teaching, etc.) to ensure consistency in relevant for the study design and research questions.
7. Establish a "top priorities" table to ensure readiness for important assumptions and data values that you may need to change and to which formulas can be linked, e.g., interest rate used, discount rate, number of years over which to follow up, timing and execution, number of participants in each arm which overhead costs should be split.

Hollands, F., Pate-Williams, J., Bland, S., Rabove, A., & Bredakis, D. (2020). Timeline of activities for cost analysis. CAP Project. <https://capproject.org/resources>

||| CAP Project

Rob

“And a timeline of cost analysis activities that helps you plan what you’ll need to do and when, and how to align that with an impact study if you’re doing a CEA.

Now, Jaunelle will share a bit about stage 2.”



Stage 2: Collecting Cost Data

Data	Example
Type	Title/position, special qualifications, brands, etc.
Quantity	Number of staff, students, laptops, classrooms etc.
Percentage of use	Full time (100%), half-time (50%), percentage of time a computer lab is used
Price	Salary, value of time, price for equipment etc.

|||CAP Project

Jaunelle

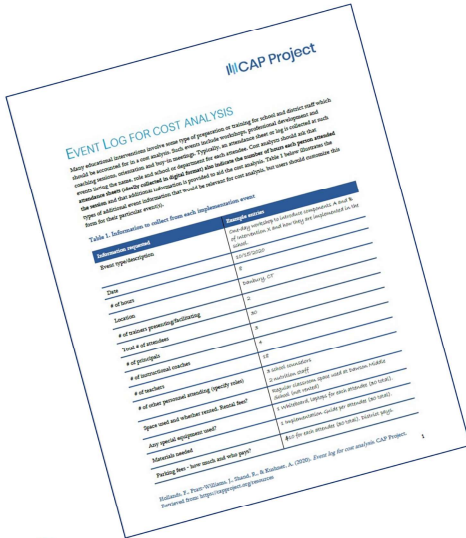
“When collecting data during stage 2, there are four main pieces of information you will need for each ingredient: type, quantity, percentage of use, and price.

Examples of “type” are things like personnel titles and positions, any special qualifications for the personnel role, and brands of materials.

Quantity can be the number of staff, students, the number of laptops required, number of classrooms and the square footage.

Percentage of use is the amount of time the ingredient is used for the intervention or instrument you are studying. For example, a staff member may dedicate 100% of their work hours to the intervention. Or a computer lab may be used 50% of the time it is normally available for the intervention.

Price can be salaries or hourly wages, the value of the time say for volunteers, the price of a computer and so on.”



Jaunelle

“To help you collect the cost data, the CAP Project provides resources such as this event log,”



CAP Project Data Collection Resources

CAP Project

EVENT LOG FOR COST ANALYSIS

Identify educational experiences involving some type of preparation or training for subject and discuss staff which should be considered for a cost analysis. This event includes: workshop, professional development and training sessions, conferences and webinars. Typically, an instructor leads or facilitates a subject or a workshop or training session. The event, site and activity are reported for each session. Cost analysis should not include activities such as: routine classroom instruction, individualized instruction, or activities that are not directly related to the CAP project. Table 1 provides the information that should be collected for each session. Table 1 is provided for use by the CAP project. The cost analysis should be completed for each session. The cost analysis should be completed for each session. The cost analysis should be completed for each session.

Table 1. Information to collect from each implementation event.

Information Request	Example answer
Event description	Workshop on using a computer program. A cost analysis was completed for the event.
Date	10/15/2010
# of hours	1
Location	Building 10
# of subject personnel facilitating	2
# of other personnel	1
# of participants	10
# of instructional credits	10
# of teachers	1 (subject facilitator)
# of other personnel assisting (specify roles)	1 (subject facilitator) used as session leader
Event cost and whether revised. Revised how?	Subject cost covered by school (see attached)
Any special equipment used?	Computer, projector, overhead projector, etc.
Materials provided	Handouts, etc.
Personnel used - name, title and role?	See the attached spreadsheet. See the attached spreadsheet.

Hollands, F., Pratt-Williams, J., Shand, R., & Kozlowski, A. (2010). Event Log for cost analysis. CAP Project. Retrieved from: [http://capproject.org/resources](#)

CAP Project Simple Time Logs for Teaching Personnel
 Hollands, F., Pratt-Williams, J., Shand, R., & Kozlowski, A. (2010). Time Logs

These templates are provided by CAP Project as examples of how to collect data on time use for personnel.

- To customize them for your own project:
1. Select the preferred log below based on whether you want activities listed horizontally or vertically. Log 1 is about each activity.
 2. Enter a short descriptor for each activity for which you need to gather time use. For example, if you are not document their time, you might include activities such as:
 Support classroom teacher with whole class reading instruction
 Pull-out intervention lessons with individual students
 In-class reading with small groups
 Preparing/teaching IEP's
 Conferencing with parents
 Meetings with other teaching staff
 Other (attach daily notes file.)
 3. Save as a Google Sheet or Excel, or create an online survey to share with the personnel from whom you
 4. Copy the weekly log for as many weeks as you need and enter the relevant dates.
 5. Share the Google Sheet, online survey link, or Excel file with the relevant personnel and set up daily or weekly
 6. Review the data periodically to look for any problems, such as too many or too few hours being reported etc.

Weekly Time Log 1

2010	Date	Activity 1	Notes	Activity 2	Notes
Day	Time	hrs		hrs	
Monday	1	0		0	
Tuesday	2	0		0	
Wednesday	3	0		0	
Thursday	4	0		0	
Friday	5	0		0	
Saturday	6	0		0	
Sunday	7	0		0	
Total		0		0	

Weekly Time Log 2

Jan 2010	HOURS SPENT ON ACTIVITY EACH				
	61	62	63	64	65
Activity 1					
Activity 2					
Activity 3					
Activity 4					
Activity 5					
Activity 6					



Jaunelle

“... time logs”,



CAP Project Data Collection Resources

EVENT LOG FOR COST ANALYSIS

Identify educational experiences involving some type of preparation or training for school and district staff which should be recorded for a cost analysis. This event log includes individual professional development and training sessions, conferences and webinars supported for each activity. Cost analysis should not include activities during the same site visit which are reported in the CAP Project data collection tool. Table 1 provides the number of activities planned for each activity. Table 2 provides the number of activities planned for each activity. Table 3 provides the number of activities planned for each activity. Table 4 provides the number of activities planned for each activity.

Table 1. Information to collect from each implementation event

Information Request	Example Answer
Event description	Implementing new literacy intervention program
Date	10/15/2020
# of hours	1.5
Location	Classroom
# of sessions/ongoing/one-time	1
# of attendees	5
# of groups	1
# of instructional coaches	1
# of teachers	4
# of other personnel assisting (specify roles)	1 (paraprofessional)
# of other personnel assisting (specify roles)	1 (teacher assistant)
Spice used and whether revised. Revised how?	Yes, revised lesson plan
Any special equipment used?	None
Materials provided	None
Participating sites - Name, grade and who was?	None

Hollands, F., Pratt-Williams, J., Shand, R., & Kozlowski, A. (2020). Event log for cost analysis. CAP Project. Retrieved from <https://capproject.org/resources>

CAP Project Simple Time Logs for Teaching Personnel
Hollands, F., Pratt-Williams, J., Shand, R., & Kozlowski, A. (2020). Time logs

These templates are provided by CAP Project as examples of how to collect data on time use for personnel.

To customize them for your own project:

1. Select the preferred log below based on whether you want activities listed horizontally or vertically. Log 1 is about each activity.
2. Enter a short descriptor for each activity for which you need to gather time use. For example, if you are not documenting their time, you might include activities such as:
Support classroom teacher with whole class reading instruction
Pull-out intervention lessons with individual students
In-class reading with small groups
Preparing/teaching IEPs
Conferencing with parents
Meetings with other teaching staff
Other (specify daily column #1-3)
3. Save as a Google Sheet or Excel, or create an online survey to share with the personnel from whom you are collecting their time.
4. Copy the weekly log for as many weeks as you need and enter the relevant dates.
5. Share the Google Sheet, online survey link, or Excel file with the relevant personnel and ask for daily or weekly data.
6. Review the data periodically to look for any problems, such as too many or too few hours being reported etc.

Weekly Time Log 1

2020	Date	Activity 1	Notes	Activity 2	Notes
Day	Time	hrs		hrs	
	Monday	1	0	0	
	Tuesday	2	0	0	
	Wednesday	3	0	0	
	Thursday	4	0	0	
	Friday	5	0	0	
	Saturday	6	0	0	
	Sunday	7	0	0	
	Other	8			

Weekly Time Log 2

2020	HOURS SPENT ON ACTIVITY EACH				
Jan	61	62	63	64	65
Activity 1					
Activity 2					
Activity 3					
Activity 4					
Activity 5					
Activity 6					

TEMPLATE FOR COST ANALYSIS INTERVIEW PROTOCOL

September 2020

Fiona Hollands, Ph.D.
Janelle Pratt-Williams, Ph.D.
Robert Shand, Ph.D.

The development of this tool was supported by the Institute of Education Sciences, U.S. Department of Education, through IED#100002 to Teachers College, Columbia University. The quotes represent the views of the authors and do not represent views of the Institute or the U.S. Department of Education.

Jaunelle

“... and an interview template.”



CAP Project Cost Analysis Templates

Ready-to-Use Templates

The semi-automated Excel templates below will assist you in conducting a cost analysis of an education program. They will serve as your data entry and analysis tools, calculating adjustments needed and providing summary metrics such as total costs, average costs per site and per program participant, and incremental costs. They are designed to allow cost estimates for treatment and control conditions in the same template. They also report a variety of cost breakdowns including costs by site, by resource category, by start-up or ongoing phase, and by fixed/variable/lumpy quantities. Click on the button below for a chart of similarities and differences that may help you choose which template to use.

If you need help using a template, submit a [Help Desk Request](#) - but try the built-in instructions first!

CAPCAT Comparison Chart

Basic Cost Analysis Template

CAPCAT 1.0 Basic is a semi-automated Excel template in which you can document your ingredients data and prices, and calculate costs. Accommodates a **single-year** program and comparison program.

CAPCAT 1.0 Basic

Multi-Year Cost Analysis Template

CAPCAT 1.2 Plus is a semi-automated Excel template in which you can document your ingredients data and prices, and calculate costs. Accommodates a **multi-year** program (up to 5 yrs) and comparison program.

(Use this for [Online Module 2](#) assessment)

CAPCAT 1.2 Plus

Cost-effectiveness Analysis Template

CAPCAT 1.3 Advanced accommodates up to 5 treatment and 5 comparison conditions, programs up to 10 years, and a variety of geographical price adjustments. A variety of cost breakdowns are presented.

CAPCAT 1.3 Advanced

Jaunelle

“The CAP Project also provides several cost analysis templates you can use to enter the data so that it is all set up for analysis and reporting.”



CAP PROJECT RECOMMENDATIONS ON HOW TO RESPOND TO THE RFA

||| CAP Project

35

JAUNELLE

Before we move to the next topic, Fiona do we have any questions from the chat?

“Now Fiona will provide recommendations on how to respond to the RFA and will share more about collecting cost data, analyzing it (which is Stage 3), and reporting it (which is Stage 4).”

Cost Analysis and CEA in IES 2024 RFAs

- This chart summarizes CAP Project’s interpretation of what IES 2024 RFAs are asking for in terms of cost analysis and CEA

1

2024 RFA Requirements for Cost Analysis and Cost-Effectiveness Analysis (CEA)
Compiled by: Cost Analysis in Practice (CAP) Project
July 2023

N.B. This summary is based on the [CAP Project](#) Team’s reading of the [2023 IES RFA](#). We are not responsible for any misrepresentation of the RFA language and we strongly recommend you review the relevant RFA carefully to make your own judgement.

Table 1. IES Requirements for cost analysis and cost-effectiveness analysis for Education (BA.202) and Special Education (BA.214) Research Grants

NCEER Education Research Grants BA.305A

All applicants “are expected to incorporate the IES Standards for Excellence in Education Research (IER) [https://ies.ed.gov/ier/2023](#) in their proposed research, as applicable. These principles include: “Analyze interventions’ costs”

Use a social perspective (costs to all stakeholders), indicate any additional perspectives you will use (e.g., IES).

Applicant and Project type	Cost analysis	Cost-effectiveness analysis (CEA)	Response for cost analysis	Total costs	Recommended Costs	National price and local price	Additional information required	Additional analysis
BA.202A Measurement Due 10/1/23	Applicants are encouraged but not required to estimate the costs for education and education systems to implement the idea developed and/or additional treatments.	-	Use a social perspective (costs to all stakeholders), indicate any additional perspectives you will use (e.g., IES).	Encouraged	-	National price and local price. Geographic price adjustments if needed.	Indicate not specified but applicants should describe the cost metrics they will report.	Encouraged
BA.202B Evaluation Due 10/1/23	No mention of cost analysis beyond Part 1. Overview and Requirements about IER.	-	-	-	-	-	-	-
BA.202A Development & Innovation Due 10/1/23	Required to determine the costs to implement the fully developed intervention in the context of the pilot study.	-	Use a social perspective (costs to all stakeholders), indicate any additional perspectives you will use (e.g., IES).	Recommended for strong applications.	Recommended for strong applications.	National price and local price. Geographic price adjustments if needed.	Costs of core components.	Recommended for strong applications.

CAP Project

Last updated 07.25.2023

FIONA

“Thanks, Jaunelle. Just a quick disclaimer to start, the suggestions I will be making over the next few slides are CAP Project recommendations based on our own experiences in proposing and reviewing cost and cost-effectiveness analysis for IES proposals. However, the final arbiters of what's acceptable are, initially IES, and ultimately the reviewers you end up with on your proposal.

We have summarized our read of what’s required and what’s recommended by IES’s RFAs in this chart which you can find on our resources page.”



What RFAs Ask You to Include in Your Cost Analysis Plan

D&I and Impact

In your cost analysis plan, describe the following:

- The level that is most relevant for the intervention, whether the school, classroom, or individual learner level
 - How is the intervention implemented - with individual students, in whole classrooms, or school-wide?
 - How should education decision-makers think about costs of this intervention – per student served, per classroom served, or per school served?

Fiona

“Now, I'm going to run through each of the bullets about cost analysis and CEA in the Research Plan section of this year's RFAs and talk briefly about how you might address it. The IES requirements or recommendations are in black text on these slides and our suggestions for addressing them are in turquoise. I will aim to point out how the requirements differ across project types but at least this year, NCER and NCSER are saying almost exactly the same about costs and CEA.

First, for D&I and Impact projects, the RFA asks you to state “*the level that is most relevant for the intervention.*” To answer this I suggest you ask yourself or the intervention developers these 2 questions:

How is the intervention implemented - with individual students, in whole classrooms, or school-wide?

How should education decision-makers think about costs of this intervention – per student served, per classroom served, or per school served?



What RFAs Ask You to Include in Your Cost Analysis Plan

Measurement, D&I, and Impact

- How you will estimate costs using a societal perspective and the cost method you will use, noting whether another perspective, such as that of the local education agency, will also be included
 - **Societal perspective:** includes resources contributed by all stakeholders, e.g., school, district, SEA, families, volunteers, community partners
 - Any other perspective will include only a subset of the resources: consider the perspective of the entity implementing your assessment/intervention
 - **Cost method:** Ingredients method ([Levin, 1975](#); Levin & McEwan, 2001; Levin et al., 2018)

Fiona

Next, the RFAs ask you to describe in your cost analysis plan how you will estimate the costs of your assessment or intervention using a societal perspective. You can do that by including resources contributed by **all** stakeholders which might include the school, the district, the state education agency, families, volunteers, community partners, and so on.

Any other perspective you decide to use will simply include only the subset of resources contributed by the relevant entities, so it's not actually much additional work. You might consider, for example, including the perspective of the main entity implementing the program. In education this is often going to be a school or a district.

For cost method, the ingredients method, which Rob mentioned earlier, is the most commonly accepted approach to estimating costs of educational programs. It is sometimes called the resource cost model but they are the same thing.”



What RFAs Ask You to Include in Your Cost Analysis Plan

Measurement only

- The resources you will use to implement the assessment including personnel, facilities, equipment, materials, training, or other inputs, and describe each resource's quality and quantity
 - For [ANY project type](#) consider including a table listing:
 - Main ingredients needed to implement the assessment/intervention
 - Key characteristics
 - Expected quantity needed in pilot study or for a real or typical site implementing your assessment or intervention

Fiona

The next bullet is only listed in Measurement. It asks you to describe the resources you will use to implement the assessment. Even though D&I and Impact don't include this bullet, our recommendation for any cost analysis proposal is to include a table listing:

the key ingredients that will be needed,

any important characteristics like a required certification or years of experience,

and the quantity you expect to need in your pilot study, or in a real or typical site implementing your intervention or assessment.



Example Table of Resources

Table X. Ingredient Types and Quantities Per School

Type of ingredient	Characteristics/Qualifications	How many needed in this program implementation?	Source of information
PERSONNEL			
Elementary school teacher	3 yrs experience, BA	2 teachers	Teacher time logs
District literacy coach	5 yrs experience, MA	1 coach	Coach interviews
Volunteer	Parent/guardian of a study student	4 volunteers	Developer & teacher interviews
FACILITIES			
Elementary school classroom	900 sq ft	2 classrooms	FOI observations
MATERIALS & EQUIPMENT			
Digital device	iPad	50 iPads	Developer & teacher interviews
OTHER INPUTS			
Device warranty	AppleCare, 3 yrs	50 warranties	Developer & teacher interviews

FIONA

Here is an example of such a table with ingredients needed per school site.

I've organized them by category starting with personnel.

I have a column for characteristics or qualifications,

a column for quantity,

and one in which I indicate where I'm going to gather more accurate information about each ingredient.

So, running through the first ingredient listed, you can see in the first column that we need elementary school teachers to implement this intervention, in the next column you can see they need at least 3 yrs of experience and a BA. In the next column I indicate I need 2 of them, and then in the last column I indicate that I will collect more information during the project using teacher time logs



Time Period for Cost Data Collection

- How you will collect data about costs, including the **time period for the cost data collection**, the data collection assessments [instruments] you will use, and the sources you will use to obtain national prices for resources and, if useful to a local audience, local prices:
 - Time period: Capture all resources used to implement complete dose
 - **Measurement:** Depends on how assessment will be implemented, one-off vs. recurring
 - **D&I:** Usually duration of pilot
 - **Impact:** Implementation period for at least one cohort

FIONA

The next bullet asks you to describe your data collection plans starting with the time period. You'll want to make sure that you are capturing all resources used to administer or deliver a complete dose of the assessment or intervention.

For **Measurement** projects, the time period could be very short if the assessment is only administered once per participant or it could be a year if the same assessment is administered multiple times to the same participant, for example, to track growth over time.

For **D&I**, the time period will often be the duration of the pilot unless you're doing a rapid cycle intervention with multiple iterations, in which case you need to decide whether it makes sense to collect cost data for every cycle or maybe just the last one.

And for **Impact** projects, you need to cover the implementation period for at least one cohort. But for the CE ratio, the costs must align with the effects, so if you are reporting an effect size for the entire sample rather than per cohort, you should estimate costs for all cohorts.



Data Collection Instruments

- How you will collect data about costs, including the time period for the cost data collection, **the data collection assessments [instruments] you will use**, and the sources you will use to obtain national prices for resources and, if useful to a local audience, local prices:
 - Try to integrate questions about resource use into other instruments, e.g., fidelity of implementation observations or surveys
 - Interviews of assessment/intervention developers and key implementers
 - Time logs, event logs

FIONA

You also need to describe the data collection instruments you'll use. In order to reduce the burden on participants, and on you as the cost analyst, we recommend you try to integrate questions about resource use into other instruments. For example, it's quite likely someone else on the project team is conducting observations to evaluate fidelity of implementation or is administering surveys.

You could also describe interview protocols to gather information from the developers and from key implementers.

And accuracy of cost data can be greatly enhanced by designing and collecting time logs and event logs. But you'll probably need to offer incentives for school and district personnel to complete them.



Sources of Local and National Prices

- How you will collect data about costs, including the time period for the cost data collection, the data collection assessments [instruments] you will use, and **the sources you will use to obtain national prices for resources and, if useful to a local audience, local prices:**
 - National prices: See Appendix II in CAP Project Guidelines
 - National surveys, CAP Project Database of National Prices
 - Local Prices: See Appendix III in CAP Project Guidelines
 - District salary schedules, public databases of personnel compensation

FIONA

Next, you need to provide sources you will use for national prices and, if you also plan to provide a local cost estimate, sources for local prices. We list a bunch of possible sources in the CAP Project guidelines, Appendices II and III. We also have a database of national prices on the CAP Project resources page.

Link to CAP Project Guidelines:

https://static1.squarespace.com/static/5eb0d7c7df68b75104fbc784/t/63338376b384231897ba8b38/1664320376924/CAP+Project+Cost+Analysis+Guidelines_1.1_Final.pdf

Extra Notes:

To decide whether to promise national and/or local prices we suggest you think about:

- *the audience for the results,*
- *the availability of relevant prices from national or local sources*
- *the number of different sets of local prices that you might need to collect*
- *and your budget.*



What RFAs Ask You to Include in Your Cost Analysis Plan

- **Measurement:** How you will calculate the cost of the resources and the assessment's total cost, including details such as how you will adjust prices where needed (for example, to account for geographic price differences), assign costs to resources that are provided at below their actual value, and run sensitivity analyses to check assumptions
- **D&I and Impact:** How you will calculate the cost of the resources, **the cost of core components of the intervention** and the total and **incremental cost** of implementing the intervention
 - Apply concept of opportunity cost to place a monetary value on every resource used in implementation regardless of whether there is any exchange of funds

FIONA

The next bullet does vary across project types. For Measurement, you are asked to describe how you'll calculate the cost of the resources and the assessment's total cost, including details such as how you will adjust prices where needed (*for example, to account for geographic price differences*), assign costs to resources that are provided at below their actual value, and run sensitivity analyses to check assumptions.

For D&I and Impact studies you'll need to break out costs by core components. And you are also asked for **incremental costs**, not just total costs.

The first point you might want to make is that you are applying the concept of opportunity cost to place a value on every resource used in implementation regardless of whether there is any exchange of funds.



Total and Incremental Costs

- **How you will calculate the cost of the resources and the assessment's total cost**, including details such as how you will adjust prices where needed (for example, to account for geographic price differences), assign costs to resources that are provided at below their actual value, and run sensitivity analyses to check assumptions
 - Cost of each resource = Quantity x Price x Percentage of Use
 - E.g., 4 teachers x \$50,000 salary and fringe x 10% time on implementing the intervention = \$20,000
 - Total cost = sum of individual resource costs
- **For D&I and Impact:** Incremental cost is the difference between T and C costs or T and BAU costs

FIONA

The cost of each resource is calculated by multiplying the quantity needed by the price and the percentage of use for your implementation.

For example, if you need 4 teachers who each receive total compensation of \$50,000 and they spend 10% of their time implementing the intervention, this resource will cost \$20,000 without any price adjustments.

The total cost is simply the sum of the individual resource costs but you may need to make some adjustments to some or all of the prices first.

Incremental costs are the difference between costs of the treatment condition and the control condition, or between the costs of the treatment condition and costs of business as usual. So you need to determine whether the intervention is using more or less of each resource than the control or BAU condition.



Video: Which Costs Should I Estimate?

Module 2: Video 4

Which Costs Should I Estimate?

07:43 minutes

This video discusses how to determine which costs to include in a cost analysis using several hypothetical scenarios in which the program being studied may be totally new, may supplement current activities, or may partially or wholly replace them.

Watch Video 4



FIONA

Rob has an 8-minute video in CAP Project's Online Module 2 that can help you think through what counts as incremental costs for your particular intervention. It's Module 2 Video 4, Which Costs Should I Estimate?



Adjusting Prices

- How you will calculate the cost of the resources and the assessment's total cost, **including details such as how you will adjust prices where needed (for example, to account for geographic price differences)**, assign costs to resources that are provided at below their actual value, and run sensitivity analyses to check assumptions
 - See CAP Project Guidelines pp. 20-25 for Adjustments
 - Inflation
 - Amortization
 - Discounting/compounding
 - Geographical price differences
 - CAP Project Cost Analysis Templates (CAPCATs) facilitate all these

FIONA

To help you figure out when and how to make price adjustments, our guidelines describe each kind of adjustment you might need on pages 20-25.

These include:

Adjusting for inflation if you can only find a price from a year that is different from the one in which you want to present costs,

Amortization, which means spreading the value of an item over the number of years it will last.

Discounting or compounding which is only relevant when implementation takes place over multiple years and you need to account for the time value of money by expressing all costs in the same year.

Finally, if you are using a price that's not from the area in which you are presenting costs you can use a **geographical price adjustment** to convert it.

Of course, you may not know *which* adjustments you will need to make until you are deep into data collection but you can say you will make these kinds of adjustments as needed. The CAP Project templates actually do **all** this work for you but reviewers may be looking for an indication that you understand which price adjustments may be needed and why.



What RFAs Ask You to Include in Your Cost Analysis Plan

- How you will calculate the cost of the resources and the assessment's total cost, including details such as how you will adjust prices where needed (for example, to account for geographic price differences), **assign costs to resources that are provided at below their actual value**, and run sensitivity analyses to check assumptions
 - Use market price
 - If no market price available, find price of a comparable resource

FIONA

You are also asked to describe how you will assign costs to resources that are provided at below their actual value.

Here you can say you'll use a market price if there is one.

If there is no market price available, you'll need to look for prices of comparable resources. For example, if you are developing a new curriculum and don't know how much you going to charge for it once it's fully developed, you can do some research into existing curricula that do similar or parallel things and base your cost estimate on that information.



What RFAs Ask You to Include in Your Cost Analysis Plan

- How you will calculate the cost of the resources and the assessment's total cost, including details such as how you will adjust prices where needed (for example, to account for geographic price differences), assign costs to resources that are provided at below their actual value, and **run sensitivity analyses to check assumptions**
 - Vary key assumptions especially those about which you are uncertain and/or have poor data

FIONA

You are asked to describe how you will run **sensitivity analyses** to check assumptions.

Here you can say you will vary key assumptions, and in particular the ones about which you are uncertain or have poor data.

Optional example depending on time

For example, let's say you are estimating costs of a reading intervention that requires parents to spend time reading to their children at home and you cannot collect information directly from the parents. Instead, you ask teachers for an estimate and they tell you that parents read with their children between 10 and 60 minutes each night. That's a pretty wide range so you might use the midpoint of 35 minutes for your base case analysis and then run sensitivity analyses using 10 minutes in one and 60 minutes in the other and see how each extreme affects your costs.



What RFAs Ask You to Include in Your Cost Analysis Plan

- The metrics you will use to report costs and how you will explain their meaning to education stakeholders
 - Summary metrics, e.g.,
 - Average cost per participant
 - Cost per typical unit at which assessment/intervention is implemented (school/classroom)
 - Cost breakdowns, e.g.,
 - Costs by category of ingredient (personnel, facilities, materials, other)
 - Costs by site
 - Start-up vs. ongoing costs

FIONA

The next bullet asks you to indicate the metrics you will use to report costs and how you will explain their meaning to education stakeholders. The relevant metrics will depend on your study design and context but should include

some **summary metrics** like an average cost per participant and a cost per classroom or school.

...and some **cost breakdowns** such as costs by ingredient category, costs by site, or by start-up vs. ongoing costs.

Our guidelines list quite a few options on pages 27 and 28 and our cost analysis templates facilitate a lot of these calculations as long as you label your ingredients with enough detail.



Additional Items for Impact and CEA

- How you will combine cost data with impact data to create a **cost effectiveness ratio** (CE ratio)
- A cost-effectiveness analysis is required **only for the primary learner outcome(s)**. The analysis should be conducted at the level that is most relevant for the program, policy or practice being studied, whether the school, classroom, or individual learner level
 - Costs estimated for the same sample and time period as effects are measured
 - CE ratio = Cost per unit of analysis/effect size
- How you will explain the meaning of the CE ratio to education stakeholders
 - Could translate effect size to percentile gain
 - Compare with costs and effects of other interventions targeting same outcome
 - Use a CE plane

FIONA

For Impact projects where a CEA is required - unless you can provide a good reason for why one cannot be done - you also need to indicate how you will combine cost data with impact data to create a cost-effectiveness ratio. You only need to do this for the primary learner outcome.

You'll need to align costs and effects by estimating costs for the same sample and time period as effects are measured, and by calculating the cost per unit to match the unit for which effects are measured. So, if your effect size is at the student level, you'll need a cost per student. If the effect size is at the school level, then you'll need a cost per school.

The CE ratio is simply calculated by dividing the cost per unit of analysis by the effect size. For example, if your intervention costs \$100 more than whatever the control condition is doing and produces half a standard deviation increase in reading comprehension, then your CE ratio is simply $\$100/0.5$ or \$200 per standard deviation increase in reading comprehension.

Lastly, IES asks you how you will explain the **meaning of the CE ratio** to education stakeholders. If your audience is unlikely to understand standard deviations, you may be

able to translate them into something more intuitive like a percentile gain. You could also say you will compare your results with costs and effects of other interventions targeting the same outcome and you could potentially plot these on a cost-effectiveness plane. We have a one-pager about that on our resources page.

Thanks for listening and over to you, Jaunelle.

Extra Notes: Conversion to percentile gains

[https://soltreemrls3.s3-us-west-](https://soltreemrls3.s3-us-west-2.amazonaws.com/marzanoresearch.com/media/documents/pdf/AppendixB_DTLGO.pdf)

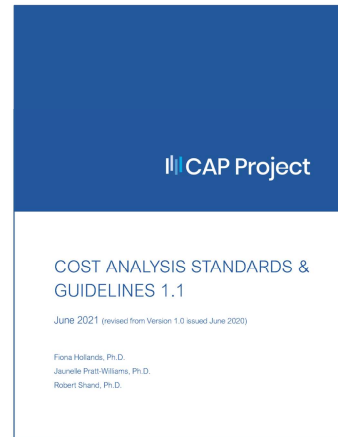
[2.amazonaws.com/marzanoresearch.com/media/documents/pdf/AppendixB_DTLGO.pdf](https://soltreemrls3.s3-us-west-2.amazonaws.com/marzanoresearch.com/media/documents/pdf/AppendixB_DTLGO.pdf)

CAP Project Cost Analysis Standards and Guidelines 1.1



- Practical guidelines for designing and executing cost analyses of educational programs.

 CAP Project



JAUNELLE

“Whew... We shared a lot of information. If you are worried about your notes, the CAP Project guidelines include most of this guidance, details on CEAs, and how to design and execute cost analyses of educational programs.”



|| CAP Project

Who We Are CAP Online Modules **CAP Project Resources** General Resources

CAP Project Resources

These resources were initially developed under the [CAP Project grant](#) (May 2020 - April 2023) and are currently maintained by [EdResearcher](#).

Need help deciding what kind of economic evaluation to do? Watch this short video from the CAP Project Online Modules which narrates you through a decision flowchart to help you land on the best option for answering your research questions.

Decision Flowchart Video

JAUNELLE

You can also access all the the CAP Project Resources we referenced at capproject.org/resources.



Additional Questions?

Please either unmute or submit your follow-up questions in the chat.

JAUNELLE

Rob, before we open it up for the broader Q/A and questions asked in advance, were there questions in the chat?

“Now we would like to shift to your remaining questions. We had a few questions submitted in advance. We listed them on the next slide and will start with those. If you have additional questions, please put them in the chat and we will do our best to get through those. You can also unmute and ask your question.”



Pre-submitted Questions

1. Does the cost analyst and/or advisor need to be listed as key personnel?
2. Does the limit of 35% of total budget for the pilot study in D&I include the cost analysis budget?
3. In D&I, a cost analysis is required for the intervention, but IES is asking for incremental costs as well. What is IES expecting the comparison to be for incremental costs? Can grantees estimate costs for Treatment compared to what was going on before or what non-Treatment students in the same school are doing (i.e., BAU) rather than having to estimate costs for comparison sites/students who could be doing many alternative interventions?
4. Is there an example of a cost analysis that can be shared?



Pre-submitted Questions (continued)

5. How do applicants meet the SEER standard about analyzing intervention costs if there is no specification for a project type that a cost analysis or CEA is required?



THANK YOU!

Visit <https://capproject.org> if you have more questions or would like to reach us.

||| CAP Project

57

JAUNELLE

Thank you and wrap up based on session.