

Cost of Preschool Quality Tool – User Guide

CENTER ON ENHANCING EARLY LEARNING OUTCOMES (CEELO)

Written by: George Rickus, Third Sector Intelligence, Inc.

August 2016

Cost of Preschool Quality Tool – User Guide

Table of Contents

Introduction	3
Design Considerations of the CPQ	4
Formatting Considerations within the Tool	5
Overview of the Tool.....	5
The Heart of the CPQ: Worksheet B. The Implementation Plan.....	8
Getting Started: How to Use the CPQ.....	10
Phases 1 & 2: Populating and Editing the Input Values in the Implementation Plan	10
Phase 3: Reviewing the CPQ Model Assumptions and Output for Reasonableness	23
Phase 4: Adding “Scenarios” and Creating Multiple-Scenario “Systems”	25
Phase 5: Modifying the CPQ	27
Case Studies	31
Case Study #1: Comparing Two Alternatives of a Single Scenario.....	31
Case Study #2: Developing a Multi-Scenario System Encompassing Urban and Rural costs as Well as a Fourth Delivery Model	37
Glossary.....	42
Acknowledgements.....	43
Appendix: Additional Information to Support Use of CPQ	44
Differences Between the CPQ and other Cost Tools	44
How the CPQ Can Educate the User on Data Requirements for its Preschool Program	44
A Suggested Approach Prioritizing Input Assumptions for Further Research	45

Introduction

State early education administrators and policy makers need comprehensive and valid information on the costs of implementing high quality preschool programs. CEELO has produced an Excel-based model, the Cost of Preschool Quality Tool (CPQ)¹, which can be used at the state or district level to estimate the cost of expanding high quality preschool for 3- and 4-year-olds. The CPQ includes settings for “best practice” based on the 2015 NIEER State of Preschool quality benchmarks² and allows users to change settings to understand the cost implications of various alternate program options or models of delivery (e.g. center or school based). The CPQ has the functionality to alter input assumptions based on specific state and/or local data: (1) Who is served, such as target child populations by poverty level, (2) Ingredients of the program, such as length of day and class size, and (3) Input prices, such as teacher salaries.

The CPQ links to publicly available data on volumes and prices (primarily salaries) and allows for varying the mix of providers among public school, private providers, and Head Starts, as well as allocating this mix across additional dimensions, such as urban versus rural target populations. The CPQ is free to users. An information form and a license can be accessed [here](#). The User Guide is intended to assist you in fully utilizing the tool. You may also view [this webinar](#) for a live demonstration of the CPQ.

¹ The latest version of the CPQ is “CEELO Cost of Preschool Quality Tool (CPQ) Prototype (e 2016_06_24).xlsx”

² Barnett, W. S., Friedman-Krauss, A. H., Gomez, R. E., Horowitz, M., Weisenfeld, G. G., & Squires, J. H. (2016). The State of Preschool 2015: State Preschool Yearbook. New Brunswick, NJ: National Institute for Early Education Research.

Design Considerations of the CPQ

Five design considerations drove the development of the tool, as shown in **Graphic 1** below.

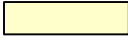

Graphic 1: Goals and objectives that were considered in designing the CPQ.

5 Design Considerations of the CPQ Tool

Goals and Objectives	How?
<ul style="list-style-type: none">• Positively influence how states think about expanding their early learning programs	1. Build costs around preschool quality standards and benchmarks
<ul style="list-style-type: none">• Improve states' understanding of the total funding necessary to support, implement, expand, and/or improve the quality of early learning programs	2. Offer a holistic perspective on total cost, encompassing district- or state-level infrastructure with site-level provider services costs
<ul style="list-style-type: none">• Accommodate states' needs to estimate cost forecasts under a realistic rate of expansion and improvement	3. Provide a multi-year implementation window for accurately modeling volume (and cost) patterns over time
<ul style="list-style-type: none">• Give states the ability to quickly compare alternatives and resulting impact on costs	4. Allow an unlimited number of scenarios to be added in a side-by-side format
<ul style="list-style-type: none">• Create a foundation upon which users can modify/customize the Tool to meet their specific needs	5. Simplify the Tool design wherever possible <ul style="list-style-type: none">– Advanced skills in Excel not required– Clearly identified calculation steps– 'Copy-and-paste' to adding scenarios– Insert rows to expand details underlying assumptions

Formatting Considerations within the Tool

The CPQ is pre-loaded with default assumptions, which allows the user to immediately begin working with the output of the tool upon entering a preschool slot count—for one year or over several years. However, users should first become familiar with a few basic rules for entering data. With the exception of a small number of drop-down menus, there are no protected cells or formulas; therefore, users should take care when changing the contents of a formula within a cell, without first understanding its purpose. We recommend saving an original copy of the model prior to changing any formulas. To simplify the editing process, the model is formatted with a few simple rules regarding cell shading:

-  Yellow-shaded cells are for **user input**, and are designed for the input values to be changed to meet the user's specific needs.
-  Green-shaded cells identify **model output**, i.e., summary costs and key metrics. *These cells contain formulas that should not, in most cases, be modified by the user.*
- All other cells, and in particular any white-shaded cells containing formulas, **should not be modified** by the user without a thorough understanding of the implications of such changes to other cells within the model.

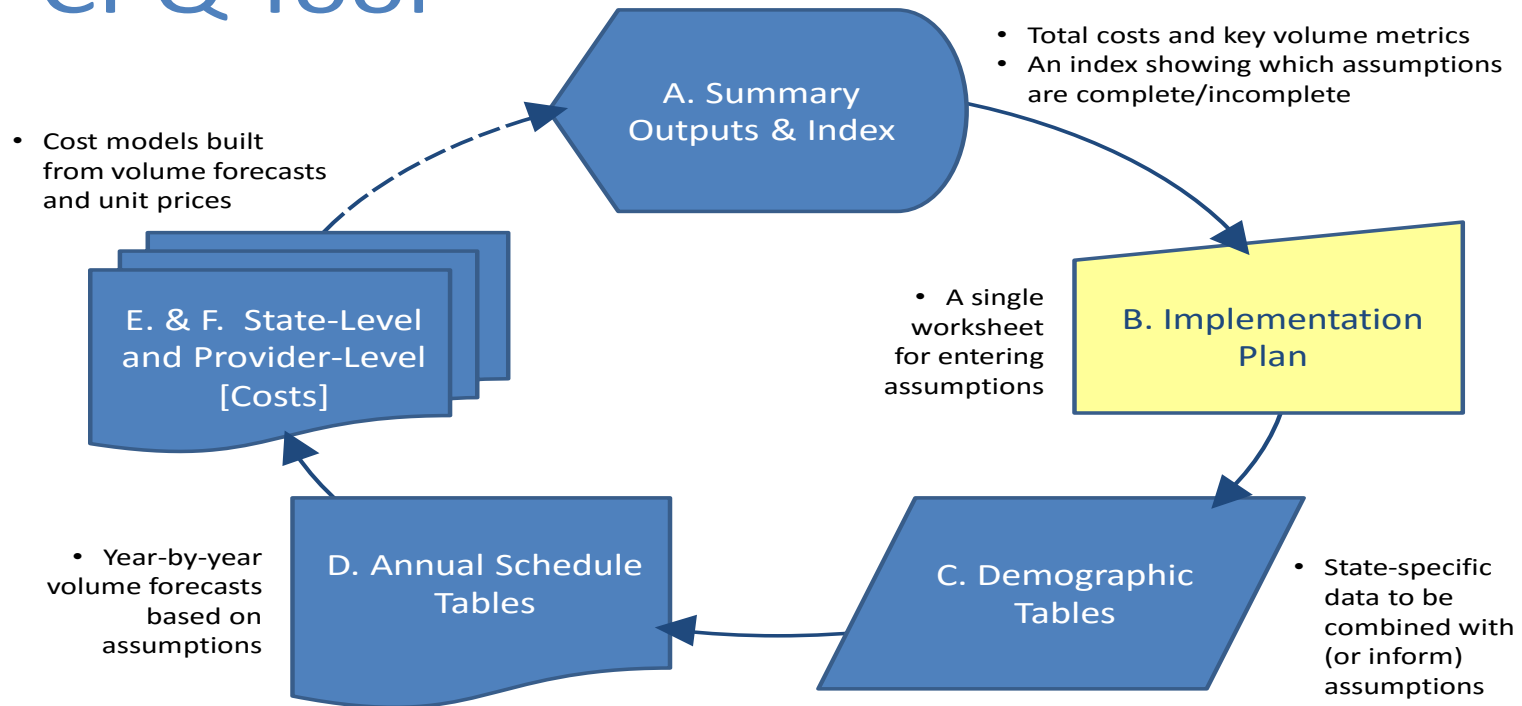
Overview of the Tool

The CPQ is organized into six worksheets:

- Worksheet A: Summary Output and Index
- Worksheet B: Implementation Plan
- Worksheet C: Demographic Tables
- Worksheet D: Annual Schedule Tables
- Worksheet E: State-Level Infrastructure & Supports
- Worksheet F: Provider-Level Direct & Indirect Services

An overview of the relationship between these six worksheets is shown on the following page in **Graphic 2: High-Level Organization of the CPQ Tool**.

High-Level Organization of the CPQ Tool



Graphic 1: High-Level Organization of the CPQ Tool

The CPQ is pre-loaded with demographic information in Worksheet C and “default” unit cost estimates in Worksheet B so users can immediately begin using the tool. Users can change these default input assumptions as they see fit to better represent the cost data they have on-hand. In cases where the user does not (yet) possess such data, the defaults in the tool will support the CPQ calculations. For a list of definitions of the (default) input assumptions in the CPQ, please see the Glossary. Each of the CPQ worksheets is described briefly, below.

Worksheet A: The Summary Output and Index is both the beginning and end of the model that comprises the CPQ. After entering their assumptions in the Implementation Plan (Worksheet B), users can examine the Summary Output to review an expanded table of annual cost data and other key performance metrics. In addition, Worksheet A contains an Index that allows users to see whether any assumptions in the Implementation Plan may be incomplete or illogical. The title in each row in the Index is a hyperlink that can take the user to the corresponding table in Worksheet B. Space is provided between the title of each table and the “Assumptions Complete?” column for users to add their own notes to document changes they make to the input assumptions.

Worksheet B: The Implementation Plan is the only worksheet in the CPQ that requires input from the user, and as such, it is the primary driver of all model calculations. Locating all of the input assumptions within one worksheet is intended to promote ease-of-use. The Implementation Plan draws from demographic data within Worksheet C, and presents this data in various cells on Worksheet B. All of the remaining worksheets contain calculations that are based on the assumptions in Worksheet B. For convenience, the top of Worksheet B contains an abridged version of the summary output of the model so that users do not have to toggle back-and-forth between worksheets to observe the effect on projected annual costs resulting from a change to the input assumptions.

Worksheet C: The Demographic Tables worksheet houses tables that summarize CPQ data at the state level. Once a user selects a state in Worksheet B, the CPQ looks up the relevant data values for that state. Worksheet C is preloaded with a number of useful tables based on state-level data from the U.S. Census, the American Community Survey (ACS), the Bureau of Labor Statistics (BLS), and the National Head Start Association. It is recommended that users familiarize themselves with the Demographic Tables so they understand the nature and sources of data populating certain assumptions in Worksheet B—in case they want it to be overwritten—as well as the data tables not directly linked to Worksheet B but which are included for additional reference. One example of a demographic table not explicitly linked to the CPQ assumptions is Table C.6, which contains Head Start data by state for teachers and assistant teachers by degree/certificate level.

Worksheet D: The purpose of the Annual Schedule Tables is to translate the assumptions from Worksheet B into multi-year volumes forecasts. Annual volume schedules matter because many preschool cost drivers do not change in lock-step with the number of preschool slots. Each table in Worksheet D is clearly labelled and can be reviewed and/or printed by the user as needed to help explain the volumes that drive total annual costs.

Worksheet E: The State-Level Infrastructure and Supports worksheet is the cost model for state-level costs. It combines the annual volumes forecasts from the Annual Schedule Tables with the unit cost assumptions from the Implementation Plan to calculate annual total costs at the state level. Users can review Worksheet E to see a breakout of annual costs in greater detail than is shown in Worksheets A or B.

Worksheet F: The Provider-Level Direct & Indirect Services worksheet is the cost model for provider-level costs, and similarly combines annual volume forecasts with unit prices, but in this case for activities occurring at the provider level. While Worksheet F is much lengthier than Worksheet E (separate cost calculations are required for each combination of dosage level and delivery model), it remains a useful resource for users to review provider-level costs in greater detail than is shown in Worksheets A or B.

The organization of the CPQ is intended to make calculation steps more transparent and easy to follow. Use of the tool does not require delving into Worksheets C-F. Furthermore, the tool is designed to be flexible enough to accommodate a number of modifications to Worksheet B with minimal impact to other worksheets. A user can override various assumptions in Worksheet B, which will impact the forecasts and calculations throughout the other worksheets. Certain changes to the structure of Worksheet B can also be accomplished without requiring changes to the other worksheets; this will be discussed in a subsequent section, **Modifying the CPQ**, on page 26.

The Heart of the CPQ: Worksheet B. The Implementation Plan

As mentioned above, the Implementation Plan worksheet is the primary worksheet for entering assumptions into the CPQ. As such, it represents the “heart” of the tool from a user’s perspective. The purpose of all of the other worksheets is to carry out calculations based on the user’s inputs in Worksheet B.

Input assumptions in the Implementation Plan worksheet, i.e., the yellow-shaded cells, can take one of the following five forms:

1. By Implementation Year. The user is asked to enter separate inputs by year. Implementation years can be assigned as either calendar years or fiscal years by the user, as long as the assignment is applied consistently throughout the CPQ.
2. Fixed. Input assumptions that are fixed will apply to all implementation years, delivery models, and dosages, subject only to changes resulting from inflation (if selected by the user).
3. By Delivery Model. The user is allowed to vary assumptions between Child Care Centers, Public PreK, and Head Start sites within a single scenario; the assumptions apply to all implementation years (subject to inflation) and all dosages, unless specified otherwise. It is also possible to repurpose any of these three delivery models to include additional facility types, if necessary.
4. By Dosage. The user can vary assumptions between Part-, Full-, and Extended-Day programs within a single scenario. Unless specified otherwise, the assumptions apply to all delivery models and implementation years. It is possible to repurpose any of these three dosage levels to accommodate additional combinations, if necessary. The default input assumptions treat these programs as 3-, 6-, and 10-hours long, respectively. The durations can be changed so long as the user understands how other assumptions are based upon program time and adjusts them accordingly.³
5. Lump Sum. Finally, in some cases the CPQ gives the user the option of entering a single lump sum amount instead of populating more detailed inputs. This form is akin to the fixed form described above, except that it is presents as an alternative to breaking out costs by line item.

The Implementation Plan is organized vertically. Beginning at the top of Worksheet B, the user can name the scenario, system, and choose a state for consideration in the CPQ. As mentioned above, a user can create an unlimited number of side-by-side scenarios; by naming a scenario,

³ It should be noted that a small change in the class duration, e.g., 2.5 hours per day instead of 3, is not material to the model unless it results in either a change in either the number of classes that can be taught within a single classroom per day, or a change in the number of classes that a single adult teaching staff member can support per day.

a user can help to explain the differences between these alternative models. Naming a system is also useful when a user wants to define a single preschool plan as the sum of two or more scenarios; in this case each of the scenarios would share a common system name. After entering a name for the scenario and system, a user can select a state from the drop-down menu and the CPQ references the relevant demographic information for that state from Worksheet C. For example, Worksheet C provides information on the number of children in each state below various percentages of the Federal Poverty Level, as well as state average salaries for various staff positions at the provider level.

The user can then scroll down through the remainder of the input assumptions in Worksheet B, which is organized into the following tables:

- Table B.1: Model Outputs and Key Performance Metrics
- Table B.2.a.1: Annual Preschool Slot Plan
- Table B.2.a.2: Available Funding Streams
- Table B.2.b: NIEER Preschool Quality Standards and Benchmarks
 1. Early Learning Standards
 2. Maximum Class Size
 3. Staff-Child Ratio
 4. Monitoring
 5. Teacher Degree
 6. Teacher Specialized Training
 7. Assistant Teacher Degree
 8. Teacher In-Service
 9. Child Meals
 10. Screening/Referral and Support Services
- Table B.2.c: State-Level Infrastructure & Support
 1. Annual Inflation Factor on Unit Costs
 2. Baseline Administrative Cost
 3. Curriculum Standards
 4. Coaches Training
 5. Ratings & Monitoring
 6. Professional Development
 7. Capacity Building
 8. System Supports
 9. Technical Assistance
 10. Program Evaluation
- Table B.2.d: Provider-Level Direct & Indirect Services
 1. Personnel Costs
 2. Non-Personnel Costs
 3. Other Direct Costs
 4. Indirect Costs

Getting Started: How to Use the CPQ

Use of the CPQ can be organized into the following five steps, or phases. The final two phases are not required but add to the inherent flexibility of the tool:

1. Populating the annual preschool slot plan over a specified number of years
2. Editing the default input values in the Implementation Plan
3. Reviewing CPQ model assumptions and output for reasonableness
4. Adding scenarios to the CPQ,
5. Modifying the CPQ

Phases 1 & 2: Populating and Editing the Input Values in the Implementation Plan

The first step in using the CPQ begins with the user naming the scenario and system, and selecting a state from the drop-down menu, in Rows 3-5 of Worksheet B (Implementation Plan). Next, the user scrolls down to Table B.2.a.1, the Annual Preschool Slot Plan. In this table, the user can enter a count of preschool slots by year of implementation, delivery model, and dosage, in the yellow-shaded cells. As soon as a slot count is entered, the user will begin to see cost metrics reported in the green-shaded cells in Table B.1. The annual slot plan can be easily updated; therefore, if a user is uncertain about the exact volumes to apply in future years, then any slot volume can be entered temporarily to observe the effect of changing subsequent default inputs, and the user can finalize the slot counts at a later date after reviewing and editing the other input assumptions in Worksheet B.

The second step in using the CPQ involves reviewing the remaining yellow-shaded cells, located below the preschool slot counts by year, within the various tables of Worksheet B. These cells begin with the FPL Eligibility threshold in Table B.2.a.1, and continue down through Table B.2.d.4. Users can scroll down through these tables and edit the values in the input cells to match the characteristics of their desired scenario. A more complete description of each of the yellow-shaded cells for the input assumptions is provided in the Glossary. The following is a brief description of each of the tables in Worksheet B:

Table B.1: Model Outputs and Key Performance Metrics.

The first table in Worksheet B, Table B.1, is intended to allow users to see the resulting annual costs and funding surplus/shortfall associated with their preschool slot plan. In addition, this table identifies the total children served and the percentage of the total population served (as defined by the assumed Federal Poverty Level Eligibility Threshold).

The cells are shaded in green to indicate model outputs and should not, in most cases, be modified by the user.

Table B.1: Model Outputs and Key Performance Metrics			
		Year 0	Year 1
State-Level Implementation Costs			
Provider-Level Implementation Costs			
Total Annual Implementation Costs			
Existing Funding			
Funding Surplus/(Shortfall)			
Number of 3- and 4-year-olds Served			
% of FPL Eligible 3- and 4-Year Old Population Served			
Fully Loaded Cost per Slot Including Both State-Level and Provider-Level Costs			

Table B.2.a.1: Annual Preschool Slot Plan. Users begin CPQ calculations upon entering a number of preschool slots, by year, and allocating the total annual slots by delivery model (Child Care Centers, Public PreK, and Head Start) as well as by dosage (Part Day, Full Day, and Extended Day). Because the CPQ is preloaded with default assumptions, users will see results in Table B.1 as soon as they enter a slot count value. An FPL Eligibility Threshold % will tell the user what percentage of the child population below the threshold will be served by the annual preschool slot volume. ELL, Special Needs, and Rural Area percentages are for reference purposes and do not directly impact any of the default CPQ assumptions. Sophisticated users could modify the CPQ to base calculations off these inputs or other eligibility requirements. Finally, users can establish the number of weeks for teachers to provide classroom instruction, including paid holidays and pre- and post-year planning, which is used to calculate the effective annual salaries for teaching staff.

Table B.2.a.1: Annual Preschool Slot Plan			
		Child Care Cent	
		Part Day (3hr)	Full Day (6hr)
Cumulative Number of 3- and 4-year-old Slots			
Year 0 (Pre-Existing Slots)			
Year 1			
Year 2			
Year 3			
Year 4			
Year 5			
Year 6			
Year 7			
Year 8			
Year 9			
Year 10			
Subtotal: Cumulative Slots by Delivery Model		FALSE	0 0
Slot Breakdown: FPL/ELL/Special Needs			Fixed
FPL Eligibility Threshold (% FPL)		TRUE	185%
% of Slots allocated for ELL		TRUE	5%
% of Slots allocated for Special Needs		TRUE	5%
Subtotal: Allocations for ELL and Special Needs			10%
% of Slots allocated to Rural Areas		TRUE	50%
Dosage: Weeks per year (all Delivery Models assume 5 days per week)			Weeks Days
Part Day Care		TRUE	32 160
Full Day Care		TRUE	40 200
Extended Day Care		TRUE	52 260

Table B.2.a.2: Available Funding Streams. For situations where the user wants to capture funding stream information in the CPQ, and compare funding dollars with expected costs, this table provides a number of different options. Users can enter a lump sum funding amount (not specific to delivery model or dosage), allocate funding by delivery model and dosage (but still at a fixed amount year-to-year), or vary funding allocations by year. This section is formatted to also allow further customizations around funding calculations: only the last row, “Subtotal: Existing and Projected Funding by Delivery Model,” is used by other worksheets in the model to perform calculations. Users can insert rows and alter the remainder of this table as they see fit, as long as the intended results are summarized in the aforementioned subtotal row.

Table B.2.a.2: Available Funding Streams			
		Child Care Cent	
		Part Day (3hr)	Full Day (6hr)
Existing Funding Streams, i.e., Year 0 (Insert additional rows as needed)		TRUE	
Subtotal: Existing Funding from All Sources			\$0 \$0
Projected Funding Streams by Delivery Model, by Implementation Year			Year 0 Year 1
Child Care Centers: Part Day Preschool Funding		TRUE	\$0
Full Day Preschool Funding		TRUE	\$0

Table B.2.b: NIEER Preschool Quality Standards and Benchmarks. This is the first section of assumptions related to quality ingredients, and is positioned first—after the slot plan and available funding tables—to promote the use of high quality standards in the estimation of costs. Users

can adjust the default inputs, which reflect the National Institute for Early Education Research Quality Benchmarks, to align with the quality standards in their own state. A number of key assumptions in the CPQ are contained within this section: Maximum Class Size, which establishes the number of classes required based on total slot counts; Staff-Child Ratio, which establishes the number teaching staff required; and the number of preschool classrooms per site (by delivery model), which establishes the number of facilities required and the number of annual site visits (under Monitoring costs). These assumptions are significant because each represents a primary volume driver within the CPQ: the number of classrooms, teachers, and sites required to service the annual slot plan. The resulting volumes then feed the state-level and provider-level cost calculations.

Table B.2.b.1: Program Development. This table is intended to capture the costs incurred to develop early learning standards within a state. Users enter an absolute dollar amount by year for their expected development costs. Post-development efforts, including marketing, outreach, training, etc., on early learning standards are not considered part of this table. Such costs may be more appropriately defined under a subsequent table: B.2.c.8, System Supports. The table is formatted to also allow further customizations around funding calculations: only the last row, “Subtotal: Program Development Costs,” is used by other worksheets in the model to perform calculations. Users can insert rows and alter the remainder of this table as they see fit, as long as the intended results are summarized in the aforementioned subtotal row.

Table B.2.b: NIEER Preschool Quality Standards and Benchmarks			
1. Program Development (Benchmark: Comprehensive Early Learning Standards)			
			Year 0
Development of Comprehensive Early Learning Standards (\$)			
Other Program Development Costs (\$)			
Subtotal: Program Development Costs	FALSE		\$0

Table B.2.b.2: Maximum Class Size. This table establishes the cumulative number of classes required, based on the preschool slot plan, the maximum allowable class size, and an estimated enrollment efficiency factor. The number of classes required is calculated separately by dosage and delivery model. The NIEER Standard for maximum class size is 20 children; if the user assumes that only 85% of available class slots are filled, on average, then the expected class size is 17.

2. Maximum Class Size (Benchmark: 20 Children per Class or Lower)			
			Fixed
Maximum Number of Preschool Children per Class	TRUE		20
Targeted Enrollment Efficiency: Percent of Class Size Capacity Utilized	TRUE		85%
Subtotal: Average Class Size			17
			Year 0
Cumulative Number of Part Day Classes Required			

Table B.2.b.3: Staff-Child Ratio. After determining the number of classes that will be required, the staff-child ratio assumptions establish the number of teachers and assistant teachers that will be required—as well as the number of classrooms that will be required (a part-day classroom could accommodate more than one part-day class per day). The NIEER Standard for staff-child ratio is one classroom adult per 10 (or fewer) children. Users can further establish whether the classroom teaching staff is comprised entirely of lead teachers, assistant teachers, or a mix of lead teachers and assistant teachers. The number of classrooms required to serve the preschool slot plan is based on staff-child ratio and how many classes a single adult teacher can accommodate per day (based on an eight-hour work day and taking into account pre- and post-class time spent on planning, room prep, drop-off and pick-up, etc.). The CPQ calculations assume that a single classroom can accommodate two part-day classes per day, but only one full-day or extended-day class. Furthermore, if a full-day class represented six hours of instruction within an eight-hour day, and part-day and extended-day classes were three hours and 10 hours, respectively, then the default input assumptions express the number of classes a single adult teacher can accommodate as multiples of the full-day class: 6 hours divided by 3 hours equals 2.0; 6 hours divided by 10 hours equals 0.6.

3. Staff-Child Ratio (Benchmark: One Classroom Adult per 10 Children or Better)			
			Fixed
	Maximum Number of Children per Classroom Adult	TRUE	10
	Maximum Number of Lead Teachers per Class	TRUE	1
	Number of Classes per Day per Adult Teaching Staff Member		
	Part Day (Each Classroom Can Accommodate 2 Classes per Day)	TRUE	2
	Full Day (Each Classroom Can Accommodate 1 Class per Day)	TRUE	1
	Extended Day (Each Classroom Can Accommodate 1 Class per Day)	TRUE	0.6
			Year 0
	Subtotal: Number of Teachers Required to Service Slot Plan		

Table B.2.b.4: Monitoring. After establishing slot counts and class, teacher, and classroom counts, site counts are calculated based on an average number of preschool classrooms assumed per facility. Monitoring is the first table in the CPQ Implementation Plan that requires a site count, so the assumptions for the number of preschool classrooms per facility are included here. After establishing a total number of sites required per year, users can vary the frequency of the state-sponsored site visits and the associated cost per visit, as well as annual participation rates among providers (i.e., a user does not have to assume that 100% of sites are participating every year they become eligible for a site visit). The NIEER Standard is a site visit at least every five years.

4. Monitoring (Benchmark: Site Visits at Least Once Every Five Years)			
			Fixed
	Number of Preschool Classrooms per Child Care Center Facility	TRUE	2
	Number of Preschool Classrooms per Public PreK Facility	TRUE	2
	Number of Preschool Classrooms per Head Start Facility	TRUE	3
			Year 0
	Number of Child Care Centers Required		
	Number of Public PreK Sites Required		
	Number of Head Start Sites Required		
	Subtotal: Cumulative Number of Sites Required to Service Slot Plan		
			Fixed
	Frequency of Site Visits for Ratings and Monitoring (in Years Between Visits)	TRUE	5
	Cost per Site Visit, Including Monitoring and/or Rating Cost (\$)	TRUE	\$4,000
	Cost per Site Visit for State-Level Administration of Monitoring Program (\$)	TRUE	\$100
			Year 0
	Cumulative Ratings and Monitoring Participation Rate (%): Child Care Centers	TRUE	
	Cumulative Ratings and Monitoring Participation Rate (%): Public PreK Sites	TRUE	
	Cumulative Ratings and Monitoring Participation Rate (%): Head Start Sites	TRUE	

Table B.2.b.5: Teacher Degree. The NIEER Standard for lead teachers is a Bachelor of Arts (BA) degree, and this table allows users to establish the number of teachers by degree level and set targets for improvement. The table is arranged with assumptions for the current workforce at the beginning, followed by assumptions for new teachers hired to meet the preschool slot plan. Teachers leaving the workforce can have a significant impact on these numbers over time, and so churn (attrition) assumptions are included in this table. If there is a large, existing workforce, then users can also make assumptions for how quickly this existing workforce enrolls in BA programs to meet a new quality standard for teacher degrees. Users then estimate the typical length of time required to earn a BA—based on whether or not a participating teacher already possesses an AA degree—to project volumes of teachers by degree level in future years. If the user varies teacher salaries by degree level (in Table B.2.d.1, Personnel Costs), then the change in teacher counts by degree level will impact these provider-level costs over time. If the user assumes an annual tuition support cost per participating teacher, then there will also be a state-level cost associated with the teacher degree standard.

5. Teacher Degree (Benchmark: BA Degree)			
		By Delivery Model	
		Child Care Centers	Public PreK
Total Teachers (Year 0)		0	0
% of Teachers with BA degree or higher (Year 0)	TRUE	72.6%	72.6%
% of Teachers with an AA degree (Year 0)	TRUE	23.7%	23.7%
% of Teachers without an AA degree (Year 0)	TRUE	3.7%	3.7%
Subtotal: Number of Teachers with a BA degree or higher (Year 0)		0	0
Subtotal: Number of Teachers with an AA degree (Year 0)		0	0
Subtotal: Number of Teachers without an AA or BA degree (Year 0)		0	0
% of Teachers without BA Participating in Tuition Support to earn BA (Year 0)	TRUE	27.3%	27.3%
Subtotal: Number of Participating Teachers (Year 0)		0	0
% of Participating Teachers with AA degrees (Year 0)	TRUE	76.0%	76.0%
Subtotal: Number of Participating Teachers with AA degrees (Year 0)	TRUE	0	0
% of Participating Teachers without AA degrees (Year 0)		24%	24%
Subtotal: Number of Participating Teachers without AA or BA degrees (Year 0)	TRUE	0	0
		Fixed	
Churn: % of Existing Teachers Leaving the Workforce Each Year (distribution by degree level is maintained)	TRUE	10%	
Entry Schedule: % of Participating Pre-Existing Teachers (Year 0) Entering BA Program Each Year	TRUE	100%	
% of New Teachers Hired with BA or higher (Years 1+)	TRUE	72.6%	
% of New Teachers Hired with an AA degree (Years 1+)	TRUE	23.7%	
% of New Teachers Hired without an AA or BA degree (Years 1+)	TRUE	3.7%	
% of New Teachers without BA Participating in Tuition Support to earn BA (Years 1+)	TRUE	73.3%	
% of Participating New Teachers with AA degree (Years 1+)	TRUE	32.7%	
% of Participating New Teachers without AA or BA degrees (Years 1+)	TRUE	67.3%	
Number of Years Required by AA Teachers to earn BA degree	TRUE	2.5	
Number of Years Required by Teachers without BA or AA to earn BA degree	TRUE	5.5	
BA Program Tuition Support Cost per Year (\$)	TRUE	\$3,500	
Annual State-Level Cost per Participating Teacher to Administrate BA Tuition Support (\$)	TRUE	\$100	

Table B.2.b.6: Teacher Specialized Training. A preschool specialization is treated separately from a teacher degree because a lead teacher possessing an Early Childhood Education (ECE) credential can possess either an AA, BA, or other degree. The organization of this table is similar to the organization of the preceding Table B.2.b.5, but this table contains a separate assumption for the raise in lead teacher salary associated with an ECE credential—in addition to the salaries for lead teachers by degree level expressed in Table B.2.d.1, Personnel Costs.

6. Teacher Specialized Training (Benchmark: Specializing in Pre-K)			
		By Delivery Model	
		Child Care Centers	Public PreK
% of Teachers with ECE Credential (Year 0)	TRUE	72.1%	72.1%
Subtotal: Number of Teachers without ECE Credential (Year 0)		0	0
% of Teachers without ECE Credential Participating in Specialized Training (Year 0)	TRUE	34.7%	34.7%
Subtotal: Number of Participating Teachers (Year 0)		0	0
		Fixed	
Entry Schedule: % of Participating Pre-Existing Teachers (Year 0) Entering ECE Training Each Year	TRUE	100%	
% of New Teachers Hired with ECE Credential (Years 1+)	TRUE	72.1%	
% of New Teachers without ECE Participating to Earn ECE Credential (Years 1+)	TRUE	34.7%	
Number of Years Required by Teachers to earn ECE Credential	TRUE	1.5	
ECE Program Tuition Support Cost per Year (\$)	TRUE	\$3,500	
Annual FTE Salary Increase for Teachers with ECE Credential, including Taxes & Benefits (\$)	TRUE	\$4,000	
Annual State-Level Cost per Participating Teacher to Administrate ECE Tuition Support (\$)	TRUE	\$100	

Table B.2.b.7: Assistant Teacher Degree. The NIEER Standard for assistant teachers is a Child Development Associate (CDA) credential. The table for assistant teacher degrees is very similar to the table for teacher degrees, above. The only structural difference is that the CPQ calculations for assistant teacher degrees models two levels of education (i.e., the assistant teacher does or does not possess a CDA), whereas the lead teacher degree calculations in Table B.2.b.5 models three levels (the lead teacher has a BA degree versus an AA degree versus no degree).

7. Assistant Teacher Degree (Benchmark: CDA or Equivalent)			
		By Delivery Model	
		Child Care Centers	Public PreK
Total Assistant Teachers (Year 0)		0	0
% of Assistant Teachers with CDA Credential or higher (Year 0)	TRUE	64.5%	64.5%
Subtotal: Number of Assistant Teachers with a CDA Credential or higher (Year 0)		0	0
% of Assistant Teachers without CDA Participating in Tuition Support to earn CDA (Year 0)	TRUE	41.0%	41.0%
Subtotal: Number of Participating Assistant Teachers (Year 0)		0	0
		Fixed	
Entry Schedule: % of Participating Pre-Existing Assistant Teachers (Year 0) Entering CDA Training Each Year	TRUE	100%	
Churn: % of Existing Assistant Teachers Leaving the Workforce Each Year	TRUE	10%	
% of New Assistant Teachers Hired with CDA Credential (Years 1+)	TRUE	64.5%	
% of New Assistant Teachers without CDA Participating in Tuition Support to earn CDA (Years 1+)	TRUE	41.0%	
Number of Years Required by Assistant Teachers to earn CDA Credential	TRUE	1.5	
CDA Program Tuition Support Cost per Year (\$)	TRUE	\$3,500	
Annual State-Level Cost per Participant to Administrate CDA Tuition Support (\$)	TRUE	\$100	

Table B.2.b.8: Teacher In-Service. The NIEER Standard for in-service training is a minimum of 15 hours per year. This table allows the user to assume an annual hourly training requirement for teachers and assistant teachers, and if there are costs associated with this training, to model those costs. The CPQ assumes two potential sources of cost to the provider: fees paid for materials and/or trainers, and wages to substitute teachers to fill in for teachers and assistant teachers if the in-service training is expected to occur during regular class time.

8. Teacher In-Service (Benchmark: At Least 15 hours of Training per Year)			
		Fixed	
In-Service Training Hours per Teacher/Assistant Teacher per Year	TRUE	15	
Training Fees per Teacher per Hour	TRUE	\$25	
Substitute Teacher Wages per Hour	TRUE	\$7.25	
Subtotal: In-Service Training Cost per Teacher per Hour		\$32.25	
		Year 0	Year 1
% of Teachers/Assistant Teachers Participating in In-Service Training Each Year	TRUE		
Subtotal: In-Service Training Cost (Including Training Fees and Substitute Teachers)			

Table B.2.b.9: Child Meals. Users can assume a cost for food and food prep, as well as kitchen supplies associated with providing child meals. The NIEER Standard is at least one meal per day, and the CPQ allows users to vary meals costs by dosage because the duration of a preschool class can impact a provider's cost to provide meals (and snacks) throughout the class day. This table also allows the user to specify than fewer than 100% of the children in a class will receive food provided by the provider (at the provider's cost)

9. Child Meals (Benchmark: At Least One Meal per Day)			
		Meals Cost By Dosage	
		Part Day (3hr)	Full Day (6hr)
Food/Food Prep Cost per Child per Day	TRUE	\$2.50	\$5.00
Kitchen Supplies Cost per Child per Day	TRUE	\$0.13	\$0.26
Note: Participation assumes FPL Eligibility Threshold for Free and Reduced Lunch unless overridden.			
		Year 0	Year 1
Subtotal: Weighted Average Meals Cost per Slot per Day (All Delivery Models)			

Table B.2.b.10: Screening/Referral and Support Services. The NIEER Standard is to provide vision, hearing, health, and at least one additional support service to children. This table allows the user to specify the cost to the provider per participating child, by delivery model, as well as whether 100% or fewer children receive each of these services annually. Varying assumptions by delivery model allows the CPQ to accommodate situations wherein one delivery model provides more screening/referral and support services than another (e.g., Head Start). The table is formatted to also allow users to add to number of services: only the last row, “Subtotal: Weighted Avg Cost per Slot, Based on Participation Rates by Service,” is used by other worksheets in the model to perform calculations. Users can insert additional rows as they see fit, as long as the intended results are summarized in the aforementioned subtotal row.

10. Screening/Referral and Support Services				
(Benchmark: Vision, Hearing, Health, and at Least One Support Service)			By Delivery Model	
			Cost/Participating Child	
			Child Care Centers	Public PreK
Vision	TRUE		\$25	
Hearing	TRUE		\$30	
Health	TRUE		\$40	
Other Support Service(s)	TRUE		\$10	
Subtotal: Weighted Avg Cost per Slot, Based on Participation Rates by Service, By Delivery Model			\$0	\$0

Table B.2.c: State-Level Infrastructure & Support. The costs associated with state-level activities to support the improvement and/or expansion of quality preschool are contained within this section. In some cases, the assumptions driving state-level costs have already been addressed within one of the NIEER Preschool Quality Standards and Benchmarks (Table B.2.b); the state-level infrastructure and support tables reference the earlier assumption and no additional user input is required.

Table B.2.c.1: Annual Inflation Factor on Unit Costs.

Users can project future costs with or without the effect of inflation. If the user does not want to assume inflation, then costs will be reported in Real Dollars (i.e., unit prices do not change). If inflation is assumed, then it applies to unit costs in all years of the CPQ with the exception of Year 0.

Table B.2.c: State-Level Infrastructure & Supports			
1. Annual Inflation Factor on Unit Costs (Use 0% to Model Real vs. Nominal Dollars)			
Inflation Factor (Applies to Year 0 Unit Cost Assumptions)	TRUE	Fixed	1.6%

Table B.2.c.2: Baseline Administrative Cost. States will incur costs to sustain an existing preschool program at its current quality levels, or in the case of a new program, to provide a basic level of administrative support and oversight. The CPQ is designed to ‘layer’ additional state-level (administrative) costs, associated with introducing new quality ingredients, on top of the baseline operating level. Table B.2.c.2 allows users to either assume a fixed baseline administrative cost per slot, subject to annual inflation,

2. Baseline Administrative Cost				
Baseline Administrative Cost per Slot (Year 0)	TRUE	Fixed	\$250	
Annual Baseline Administrative Cost per Slot (If not Fixed based on Year 0, above)	TRUE		Year 0	Year 1
Baseline Administrative Cost per Slot: State-Level Monitoring & Oversight (Including Inflation)				
Subtotal: Cumulative Preschool Slots				
Subtotal: Baseline Administrative Cost (\$)				
Baseline Admin Cost as a % of Total State-Level Infrastructure and Supports Cost (\$)				

or to vary the cost per slot assumption by implementation year. Care should be taken to ensure that no double-counting occurs between the costs included in the baseline administrative cost per slot, and the additional state-level cost assumptions made elsewhere in the CPQ.

Table B.2.c.3: Curriculum Standards. The CPQ models the cost for curriculum standards as a one-time materials cost and a one-time training cost per (new) classroom, and can accommodate up to three different curriculum standards. The default curricula include High Scope®, Creative Curriculum®, and Layered Curriculum®. Users can assume less than 100% of new classrooms participating in the curriculum standards (the default is blank), if they choose, and vary this participation assumption by year.

3. Curriculum Standards			Fixed	
			Materials	Initial Training
Curriculum Costs per Classroom: High Scope	TRUE		\$800	\$1,000
Curriculum Costs per Classroom: Creative Curriculum	TRUE		\$2,150	\$500
Curriculum Costs per Classroom: Layered Curriculum Approach	TRUE		\$2,000	\$1,000
			Fixed	
Cost per Classroom for State-Level Monitoring & Oversight of Curriculum Standards (\$)	TRUE		\$100	
			Year 0	Year 1
Percent of Classrooms Participating in High Scope® (Applies to All Delivery Models)	TRUE			
Percent of Classrooms Participating in Creative Curriculum® (Applies to All Delivery Models)	TRUE			
Percent of Classrooms Participating in Layered Curriculum® (Applies to All Delivery Models)	TRUE			

Table B.2.c.4: Coaching. Coaching can be a significant aspect of state-level support, and Table B.2.c.4 contains assumptions for modeling the cost to train and pay salaries to coaches. An important cost driver for Coaching is the number of classrooms that can be assigned to a single coach, i.e., the caseload per coach. The CPQ tool treats coaching costs as state-level support, and is built to accommodate up to four different types of coaches within a single scenario (space is provided for the user to name each type of coach). In cases where users want to record coaching costs below the state level but above the provider level (e.g., at a district level), they can identify the annual cost of coaching from the subtotal line of this table and deduct it from state-level costs, accordingly.

4. Coaching			State-Level Support	
			Type 1	Type 2
Name of Coaching Staff Category (i.e., One for Each Position Type, up to Four Types)			Default	
Total Coaches (Year 0)	TRUE		0	
Caseload: Number of Classrooms per Coach (1 FTE)	TRUE		50	
Coaches Salary, Benefits, Travel, and Overhead/Indirect Charges (1 FTE)	TRUE		\$87,500	
Churn: % of Existing Coaches Leaving the Workforce Each Year	TRUE		10%	
One-Time Training Cost per Coach (Coaches Training)	TRUE		\$5,000	
Entry Schedule: % of Existing Coaches in Year 0 Trained in Each Subsequent Year	TRUE		25%	
Other Costs per Coach for State-Level Monitoring & Oversight of Coaching Program (\$)	TRUE		\$6,250	
			Year 0	Year 1
Subtotal: Total Coaches				
Subtotal: Coaching Costs (\$)				

Table B.2.c.5: Ratings & Monitoring. Ratings and monitoring is considered a state-level infrastructure and support cost. The assumptions that drive this cost come from the previous table for the NIEER Quality Standard, Monitoring, (Table B.2.b.4), so no additional input is

required. More sophisticated users of the CPQ could enhance this section to include additional parameters and input assumptions, if desired, such as a more explicit model for QRIS ratings and associated activities.

5. Ratings & Monitoring				
			Year 0	Year 1
	Subtotal: Cost of Site Visits (See NIEER Standard #4, Above)			
	Ratings & Monitoring Cost as a % of Total State-Level Infrastructure and Supports Cost (\$)			

Table B.2.c.6: Professional Development. Similarly, the assumptions driving professional development costs at the state level are made in previous tables, in this case, Tables B.2.b.5-7, described above. Therefore, no additional input is required.

6. Professional Development				
			Year 0	Year 1
	Subtotal: Tuition Support Costs (See NIEER Standards #5-7, Above)			
	Tuition Support as a % of Total State-Level Infrastructure and Supports Cost (\$)			

Table B.2.c.7: Capacity Building. The CPQ Tool treats capacity building as funds awarded by the state to providers for building their local site capacity, i.e., start-up funds to add or improve space to accommodate additional children. For each new site required to meet the annual slot plan, the user can assume a one-time award by delivery model, so that users do not have to assume that all delivery models participate equally, and can also assume less than 100% of new sites are receive awards, if they choose. As a reminder, the number of new sites is established from the number of new classrooms required to meet the annual preschool slot plan and the number of preschool classrooms per facility from Table B.2.b.4.

7. Capacity Building			By Delivery Model		
			Child Care Centers	Public PreK	Head Start
	Startup Costs per Facility (Weighted Average of One-Time Funds Awarded for New Facilities)	TRUE	\$15,000	\$12,000	\$0
			Year 0	Year 1	Year 2
	Percent of New Facilities Awarded Funds for Startup Costs	TRUE			
	Subtotal: Number of Additional Facility Sites, Required to Service Slot Plan, Awarded Startup Funds				
	Subtotal: Capacity Building Funds (\$)				

Table B.2.c.8: System Supports. This table is significant for capturing large, one-time investments or costs that are not directly proportional to preschool volumes. A good example is the purchase and installation of a new IT platform; this can be a large capital investment spanning a brief period of time. The CPQ suggests three key areas of system supports: Information Technology, Data Systems, and Marketing and Communications. As with Table B.2.a.2, described

8. System Supports				
			Year 0	Year 1
	Information Technology (\$)	FALSE		
	Data Systems (\$)	FALSE		
	Marketing and Communications (\$)	FALSE		
	Other System Supports Costs (\$)	FALSE		
	Subtotal: System Support Costs (\$)			

above, the table for system supports assumptions is formatted to allow for additional rows to be inserted. Only the row, “Subtotal: System Support Costs,” is used by other worksheets in the CPQ to perform calculations; therefore, users can insert additional rows above this line and customize calculations within this table as they see fit, as long as the intended results are captured in the aforementioned subtotal.

Table B.2.c.9: Technical Assistance. Technical Assistance (TA) includes outside consulting and other forms of third party support associated with the implementation of the preschool slot plan. The CPQ allows users to assume TA costs as a percentage of state-level costs, i.e., the CPQ treats outside consulting (and related) support as proportional to the size of the state’s early learning organization.

9. Technical Assistance				
	Technical Assistance Cost as a % of Total State-Level Costs, Excluding Program Evaluation	TRUE	Fixed	
			1%	
			Year 0	Year 1
	Subtotal: Cost of Technical Assistance			

Table B.2.c.10: Program Evaluation. Program Evaluation (PE) refers to the external evaluation of the overall effectiveness and efficiency of a state preschool program conducted by an independent (third-party) evaluator. This is distinct from site visits to monitor provider quality in Table B.2.b.4. The CPQ treats PE activities as separate from TA because states typically require independent program evaluations, whereas the need for technical assistance is dependent on the state’s organizational capability and capacity. Otherwise, the CPQ models PE as it does TA: as a percentage of total state-level costs. **Table B.2.d: Provider-Level Direct & Indirect Services.** The final section of the CPQ focuses on costs at the provider level. As with state-level costs, some of the assumptions driving provider-level costs are include in previous tables. In such cases, the relevant tables are referenced.

10. Program Evaluation				
	Program Evaluation Cost as a % of Total State Costs, Excluding Technical Assistance	TRUE	Fixed	
			1%	
			Year 0	Year 1
	Subtotal: Cost of Program Evaluation			

The bottom of Table B.2.d.1 contains a section devoted to paid leave and other benefits. Paid leave drives the cost for substitute teachers. Other benefits are placed into two categories: Mandatory and Additional benefits. Additional benefits include health care, other insurance plans, and retirement and savings plans. The CPQ gives the user the option to assume additional benefits as a flat dollar amount per FTE or as a percentage of annual salary.

[illegible]

Table B.2.d.2: Non-Personnel Costs. The second table of provider-level cost assumptions addresses per-child operations costs, per-classroom preschool occupancy costs, and remaining site-level costs. This table is also useful in that it breaks out the key sub-categories comprising these costs. Operations costs per child are divided into a number of distinct line item expenses. Various occupancy costs are driven by the assumed square footage assumed per preschool classroom. Site-level costs are allocated based on the proportion of preschool classrooms to total classrooms (Tables B.2.b.4 and B.2.d.1). Table B.2.d.2 is formatted to allow users to insert additional rows for operations, occupancy, and/or site-level costs (so long as the appropriate subtotal row includes the additional rows inserted). If this operation is performed correctly, then no other CPQ worksheets will require modification. The table also gives the user the option to assume lump sum amounts instead of breaking out costs by line item, which is useful in cases where more detailed cost information is not available. For occupancy and site-level expenses, the lump sum feature is also used when the user wants to vary these costs by delivery model within a single scenario.

2. Non-Personnel Costs		By Dosage	
		Part Day (3hr)	Full Day (6hr)
Operations: Annual Per Child Costs (\$)			
Food & Food Prep (See NIEER Standard #9, and Preschool Dosage Plan, Above)		\$400	\$1,000
Kitchen Supplies (See NIEER Standard #9, and Preschool Dosage Plan, Above)		\$21	\$52
Education Supplies	TRUE	\$25	\$50
Education Equipment	TRUE	\$50	\$100
Office Supplies	TRUE	\$20	\$40
Office Equipment	TRUE	\$13	\$25
Insurance (Liability, Accident, etc.)	TRUE	\$38	\$75
Miscellaneous	TRUE	\$8	\$15
Postage	TRUE	\$12	\$24
Advertising	TRUE	\$13	\$25
Consultants/Training/PD (Incremental to NIEER Standards #5-8, Above)	TRUE	\$13	\$25
Child Transportation (Includes Vehicle, Maintenance, Insurance, Drivers, etc.)	TRUE	\$250	\$250
Other Operations Costs	TRUE	\$0	\$0
Subtotal: Annual Per Child Operations Costs	TRUE	\$860	\$1,681
Occupancy: Annual per Classroom Costs		Fixed	
Square Feet per Classroom (Including Allocation for Shared Space)	TRUE	1,100	
Effective Square-Feet per Child (based on Expected Class Size)		65	
Cost per Square Foot (\$)		Fixed	
Rent /Lease/Mortgage (incl RE taxes)	TRUE	\$16.00	
Utilities (electricity, heat/cool, water/sewer)	TRUE	\$2.00	
Building Insurance	TRUE	\$1.00	
Maintenance/Repair/Cleaning/Yardwork	TRUE	\$2.00	
Other Occupancy Costs	TRUE	\$0.00	
Subtotal: Annual Per Classroom Occupancy Costs		\$23,100	
Annual Costs Using Other Bases, i.e., Per Site Costs (\$)		Fixed	
Annual Cost for Telephone & Internet	TRUE	\$2,400	
Annual Audit, Accounting and Legal Costs	TRUE	\$3,000	
Annual Cost for Fees/Permits	TRUE	\$135	
Other Annual Per Site Costs	TRUE	\$0	
Subtotal: Annual Per Site Costs (Using Other Bases)	TRUE	\$5,535	

Table B.2.d.3: Other Direct Costs. Other direct costs include the costs for screening/referral and support services (assumed in Table B.2.b.10) and annual child assessment costs, as well as the annualized cost for classroom materials and furnishings that typically last more than one year. The table is preloaded with a number of classroom items related to the Environment Rating Scale (ERS); in some cases the cost of these items depends on the expected class size, and in other cases the user can input the desired number of items. The cost for these items is then allocated over an assumed useful life; the CPQ default assumption is five years, (i.e., the purchase price is spread evenly over five years). Users can insert rows if they want to include additional items. As long as the row, “Subtotal: Purchase Cost of ERS-Related Items,” references these additional rows, no other CPQ worksheets will require modification. Finally, users can choose to enter a lump sum annual cost assumption if more detailed cost information is not available.

3. Other Direct Costs				
			Fixed	
			Cost per Item	Number of Items
Screening/Referral & Support Services Costs per Child (See NIEER Standard #10, Above)				
Child Care Centers			\$0	17
Public PreK			\$0	17
Head Start			\$0	17
Child Assessment Costs (per Child)	TRUE		\$25	17
Purchase of ERS-Related Items (Per Classroom)				
Initial Purchase Price				
Table, Storage Unit, Workbench	TRUE		\$799	1
Chairs	TRUE		\$60	17
Soft Furnishings	TRUE		\$0	0
Interest Centers/Areas	TRUE		\$500	1
Gross Motor Skills Equipment: Tunnel, Trike, Balls, Hoops, Rope, etc.	TRUE		\$499	3
Books	TRUE		\$10	20
Language Materials	TRUE		\$25	6
Fine-Motor Materials	TRUE		\$35	16
Art Materials	TRUE		\$50	7
Music Materials	TRUE		\$100	3
Block Set	TRUE		\$269	6
Block Set Accessories	TRUE		\$50	2
Sand/Water Table	TRUE		\$179	2
Dramatic Play Materials	TRUE		\$40	17
Nature/Science Materials	TRUE		\$50	6
Math Materials	TRUE		\$25	6
Materials Showing Racial/Cultural Diversity	TRUE		\$30	5
Useful Life (in Years Between Replacement)	TRUE		5	
Subtotal: Purchase Cost of ERS-Related Items (per Classroom)			\$8,728	
Subtotal: Annualized Cost of ERS-Related Items (per Classroom)	TRUE		\$1,746	

Table B.2.d.4: Indirect Costs. The final table in the Implementation Plan Worksheet B addresses those cases wherein the user wants to include additional provider-level costs not covered elsewhere in the CPQ. Two categories are provided: Indirect Rate Charges and Contributions to an

Operating Reserve. In most cases these costs can be assumed as zero (0%), but a state may specifically authorize an “up to” budget allocation to providers in these categories. Indirect Rate charges can cover the cost of labor and overhead that is not addressed directly in the staffing models in Personnel Costs (Table B.2.d.1); if a user feels the staffing models are comprehensive of all reimbursable staffing expenses, then the Indirect Rate Charge can again be assumed as zero (0%). Contributions to the operating reserve apply to cases wherein providers are allowed to secure a portion of their payments from the state to cover contingencies that would require a net positive working capital.

4. Indirect Costs				
			By Delivery Model	
			Child Care Centers	Public PreK
Indirect Rate Charge (% of Total Provider-Level Expenses I, II, and III, Above)	TRUE		0%	0%
Contribution to Operating Reserve (% of Total Provider-Level Expenses I, II, and III, Above)	TRUE		0%	0%

Phase 3: Reviewing the CPQ Model Assumptions and Output for Reasonableness

The built-in flexibility of the CPQ also obligates the user to check the model input (and output) frequently for reasonableness. Checking for reasonableness can take a number of forms:

- Reviewing the stoplight indicators in the Index (in Worksheet A) for signs of incomplete or illogical assumptions
- Checking for inconsistencies between assumptions in the tables of Worksheet B
- Examining Year 0 input assumptions and costs relative to Years 1+
- Using high/low values (i.e. ranges), and noting the resulting impact on total costs and costs per slot, to mitigate uncertainty with specific input assumptions

Incomplete and Illogical Assumptions. In Worksheet A, the stoplight indicators in the “Assumptions Complete?” column change from green to red based on logic built into the CPQ that tests whether the table assumptions are complete and logical. A negative value entered by the user, as a rule, will trigger an alert for a potentially illogical assumption. The following is a list of other user input errors or omissions within the different tables of the Implementation Plan will that trigger the stoplight indicators:

Worksheet B Table	Common Errors
B.2.a.1: Annual Preschool Slot Plan	<ul style="list-style-type: none">• Zero total slots entered• ELL, Special Needs, and Rural percentages greater than 100%• Dosage exceeding 52 weeks in a year
B.2.a.2: Available Funding Streams	<ul style="list-style-type: none">• Annual funding expressed in fewer years than the number of years in the slot plan, by delivery model and dosage (zero values are permissible)
B.2.b.1. Program Development	<ul style="list-style-type: none">• Development costs expressed in fewer years than the number of years in the slot plan (zero values are permissible)
B.2.b.2. Maximum Class Size	<ul style="list-style-type: none">• Class size equal to zero• Enrollment efficiency greater than 100%
B.2.b.3. Staff-Child Ratio	<ul style="list-style-type: none">• Zero values (with the exception that zero value are permitted for the maximum number of lead teachers per class)
B.2.b.4. Monitoring	<ul style="list-style-type: none">• Number of preschool classrooms per facility equal to zero• Participation rates greater than 100%• Annual participation rates expressed in fewer years than the number of years in the slot plan (zero values are permissible)

Worksheet B Table	Common Errors
B.2.b.5. Teacher Degree	• Percentages greater than 100%
B.2.b.6. Teacher Specialized Training	• Percentage assumptions that result in a number of participating teachers exceeding the total number of teachers (by degree level)
B.2.b.7. Assistant Teacher Degree	• Years required to earn a degree equal to zero
B.2.b.8. Teacher In-Service	• Participation rates greater than 100%
	• Annual participation rates expressed in fewer years than the number of years in the slot plan (zero values are permissible)
B.2.b.9. Child Meals	• Participation rates greater than 100%
B.2.b.10. Screening/Referral and Support Services	• Participation rates greater than 100%
B.2.c.2. Baseline Administrative Cost	• Annual baseline administrative costs expressed in fewer years than the number of years in the slot plan (zero values are permissible)
B.2.c.3. Curriculum Standards	• Annual participation rates expressed in fewer years than the number of years in the slot plan (zero values are permissible)
	• Total participation rate greater than 100%
B.2.c.4. Coaching	• Percentages greater than 100%
B.2.c.7. Capacity Building	• Annual participation rates expressed in fewer years than the number of years in the slot plan (zero values are permissible)
B.2.d.1. Personnel Costs	• Number of total classrooms per facility equal to zero
	• Number of total classrooms less than number of preschool classrooms per facility
B.2.d.3. Other Direct Costs	• Useful life (in years) equal to zero

Inconsistent Assumptions. There are also cases where the input assumptions entered within different tables can be inconsistent with one another. This is a distinct issue from the list of potentially incomplete or illogical assumptions described above; inconsistent assumptions always occur in groups of two or more. For example, if a user specifies pre-existing lead teachers and their participation rates within a tuition support program (Table B.2.b.5), but then separately specifies zero (0) lead teachers per class (Table B.2.b.3), then the CPQ will not model lead teachers in Years 1+ or the tuition support costs associated with those teachers. **Users should conduct a separate review of their input assumptions for inconsistencies after completing Phases 1 & 2.**

Year 0 Relative to Years 1+. Rather than explicitly identifying implementation years as 2016, 2017, etc., the CPQ employs the naming convention Year 0 for the current or most recent year, and Years 1-10 for future years. Year 0 serves two purposes: first, it allows users to model current costs within the CPQ—i.e., for an existing preschool program—before adding quality ingredients. Second, it builds user

confidence in the tool by providing users with the opportunity to model current costs within the same modeling framework employed for forecasting future costs. If a user does not want to model an existing preschool program, then Year 1 can serve as the first year for entering future preschool slot volumes and Year 0 would remain blank. If a user does model Year 0 costs, then the Year 0 output should be reviewed against the output for Years 1+ to ensure that the input assumptions are not creating inconsistencies resulting in an unintended, unrealistic increase or decrease in costs (frequently manifesting as a step-change in the cost of quality ingredient from Year 0 to Year 1).

There are cases where the user may choose to assign the current year (or most recent year) to Implementation Year 1 or later, rather than to Year 0. This is because the CPQ structure for Year 0 is subtly different than other years. Years 1+ rely on the change in volumes from the prior year(s) in order to build certain costs. Capacity Building costs in Table B.2.c.7, for example, rely on the annual change in the number of facilities required to service the preschool slot plan. In contrast, Year 0 has no prior year data from which to model such changes. However, if the user assigns Implementation Year 1 to the current or most recent year and Year 0 to the year before that, and models two years of historical costs and volumes, then the change in volumes occurring in the most recent year (Year 1) would be accurately reflected in the model. A more extreme example exists within Teacher Degrees (Tables B.2.b.5): in the case of a pre-existing tuition support program, wherein tuition support lasts for up to five years (per participating teacher), the past five years could be modeled as Implementation Years 0-4 and the next five years in a future preschool slot plan as Years 5-9. This approach would ensure that the most recent year of historical volumes driving tuition support—in this case Year 4—is accurate. These types of reassignments are one example of “repurposing” elements within the CPQ. Users possessing sufficient familiarity with the tool—and how the calculations flow through the model—will see many additional opportunities for leveraging the structure of the CPQ in unique ways to best meet their needs.

Using High/Low Values. Users may encounter situations wherein there is a range of possible input assumptions they might use. Rather than feel thwarted by a lack of confidence in their numbers, they can set upper and lower bounds and observe the resulting impact on total cost and cost(s) per slot. If the range of costs is fairly narrow, then the user can gain confidence in using a median value for the input assumption and placing a lower priority on the need for further investigation. If the range is considered relatively wide, then the user may feel justified in investing additional time for research. The unit costs within the CPQ vary in the extent to which they contribute to total costs (per slot), and the use of high/low values can help a user to determine when their assumptions are reasonable and to prioritize additional research requirements accordingly.

Phase 4: Adding “Scenarios” and Creating Multiple-Scenario “Systems”

Adding Scenarios. The CPQ is designed to easily allow the user to add and review multiple scenarios side-by-side. Cell references are in most cases not absolute (i.e., “\$” are removed from cell formulas). In addition, a single scenario is arranged vertically and occupies only 13 columns. The process for adding a scenario follows a series of simple steps, and must be completed in the following order:

1. Highlight Columns D-P in the Implementation Plan in Worksheet B
2. Copy these Columns and paste them in Columns Q-AC
3. Repeat these Steps 1&2 in the following worksheets, in the order shown below



- a. Worksheet D (this should always follow Worksheet B)
- b. Worksheet E
- c. Worksheet F
- d. Worksheet A

When performed correctly, the new set of Annual Schedule Tables (Worksheet D) is fed by the corresponding new columns in the Implementation Plan (Worksheet B); this information then feeds the corresponding new scenarios in Worksheets E & F. The modeling output for the new scenario is summarized in Worksheet A. Note: The user does not need to perform any copy-and-paste steps on Worksheet C, the Demographic Tables.

The process above can be repeated as many times as desired to create an unlimited number of side-by-side scenarios. For example, a third scenario would occupy Columns AD-AP. Note: When adding more than one scenario at a time, the user can first copy-and-paste several scenarios in Worksheet B, then proceed to Worksheet D, etc.

If the user deviates from this order described above, then error values may result. The occurrence of error values is a sign that the user should delete the new columns and start again. In addition, the user should take care to ensure the same columns are copied and pasted in each worksheet; if they copy different column ranges, then the CPQ formulas may not reference the correct cells. Finally, it is important that the user copy the entire column range listed above (in the first scenario this is Columns D-P). Column D, for example, contains the logic required for the “Assumptions Complete?” feature in Worksheet A.

It is also recommended that users complete their review and editing of input assumptions in the first scenario before copying additional scenarios to the right. Otherwise, they may have to manually re-enter assumptions in each scenario that they did not wish to vary (which could lead to a more time-consuming process).

The CPQ employs “grouped” columns and rows to facilitate viewing and navigation within the Excel worksheets. After creating additional scenarios, the user can group the columns so that only the “Total” columns are showing; this can help the user to easily compare a large number of scenarios side by side. Grouping is an Excel utility that allows the user to hide rows or columns by clicking on the  boxes shown above certain columns or to the left of certain rows on a worksheet. Upon clicking this box, the symbol will change to  and the grouped columns or rows will be hidden. Clicking the symbol again will “unhide” the rows or columns.

Creating Multiple-Scenario “Systems.” The term “Systems” applies to situations wherein the user wants to vary assumptions between subsets of their preschool slot plan in a manner that is not accommodated within the structure of a single scenario. Essentially, a System is a combination of two or more Scenarios. For example, if a user wants to model some of the slots within a preschool slot plan as rural and some as urban and use different unit cost assumptions for each subset, then two Scenarios could be created. Row 4 of Worksheet B, the Implementation

Plan, provides space for the user to name the common System that is comprised of these two Scenarios; the sum of the two scenarios provides the total system volumes and costs.

An unlimited combination of Scenarios is possible within a single System. Furthermore, two or more Systems can be modeled side-by-side, each comprised of more than one Scenario. This design consideration delivers a high degree of flexibility in how the CPQ can be adapted to a diverse set of preschool programs.

If the user creates a multiple-scenario System, then there are a few tables within the Implementation Plan (Worksheet B) within which the user should take care to avoid double-counting costs:

- Table B.2.a.2. Available Funding Streams
- Table B.2.b.1. Program Development
- Table B.2.c.8. System Supports

In each of these tables, the user is asked to enter an absolute dollar amount by implementation year. A user could enter the total dollars for the system in only one scenario (i.e., the first) and leave the corresponding tables in the remaining scenarios blank. Alternatively, the user could pro-rate the dollars across the different scenarios in a manner that sums to the correct total for the system. In either case, the user should review the input assumptions to ensure the system total is correct.

The CPQ does not sum scenarios; users must complete this operation manually, but it is not difficult. The summation operations involved are well within the capability of a moderately skilled Excel user. The blank worksheet included at the end of the CPQ provides space for a user to perform various calculations, including summing the appropriate columns within a multiple-scenario system, without having to alter the other worksheets. Although all of the worksheets within the CPQ are unprotected (and can be edited in any way), the CPQ workbook itself is protected so that additional worksheets cannot be inserted or deleted; this protection was necessary for the maintenance of the Cover Sheet, which includes information about CEELo and NIEER and its partners.

Phase 5: Modifying the CPQ

Modifications to the CPQ are the final phase in using the tool, and such actions are not always required. Nonetheless, allowing for modifications is a primary design consideration intended to further promote the flexibility of the CPQ. Modifications involve changes that do impact white-shaded cells containing formulas, either directly or indirectly, and can take one of two forms:

- Minor modifications are defined as alterations to the Implementation Plan in Worksheet B that, if performed correctly, do not require any changes to formulas in the other worksheets within the CPQ.
- Major modifications are defined as those that do require changes to the formulas in the other worksheets in the CPQ.

When contemplating modifications, a very useful Excel utility is the *Trace Dependents* feature located in the *Formula Auditing* sub-menu within the *Formulas* menu. It identifies the location of other cells—including those in other worksheets—containing formulas that are dependent upon the highlighted cell. Reviewing dependent cells helps users understand the extent to which they can execute a modification, and whether it will be minor or major in nature.

Minor modifications. There are three types of minor modifications within the CPQ:

1. Inserting Rows. Subtotal rows are frequently employed in the Implementation Plan worksheet, and other worksheets routinely draw from such rows rather than from the individual line items that contribute to the subtotals. This facilitates the user’s ability to insert additional rows, but only in certain tables. The tables formatted to accommodate inserting rows are identified in the descriptions provided in the preceding section, How to Use the CPQ - Phases 1 & 2.
2. Adding Scenarios. Adding more than one scenario is considered a minor modification because it does not involve editing cell formulas, but rather simply cutting and pasting columns to the right. The process for adding scenarios is described in the preceding section, How to Use the CPQ – Phase 4.
3. Repurposing Elements. With sufficient experience, users could identify opportunities to repurpose specific input assumptions to better meet their needs. As mentioned previously, repurposing refers to amending the definition and application of an element (model input) without having to change the formulas within the CPQ. Essentially, the user will understand how the CPQ is applying unit cost and volume calculations, and can either extend the definition of the element to include additional unit costs or volumes, or replace the unit cost or volume entirely, as they see fit.

Repurposing Years 1+ for historical costs, introduced in the previous section, How to Use the CPQ – Phase 3, is one such example of redefining an element to address a user’s specific needs. In addition, many other opportunities to repurpose various input assumptions are worth mentioning. The following is a list of examples, organized by table in the Implementation Plan:

Worksheet B Table	Opportunities to Repurpose Input Assumptions
B.2.a.1: Annual Preschool Slot Plan	<ul style="list-style-type: none"> • Delivery models can be repurposed. For example, a user could choose to model Ministries in place of Child Care Centers, so long as the assumptions in the other tables of the Implementation Plan are adjusted to reflect the economics of this delivery model, accordingly. • Dosages can be repurposed to include any combination of class durations, so long as the other input assumptions—and in particular the number of classes per day per adult teaching staff member in Table B.2.b.3—are adjusted accordingly.
B.2.a.2: Available Funding Streams	<ul style="list-style-type: none"> • The assumptions in this table should be consistent with the delivery models and dosage levels identified in Table B.2.a.1.

Worksheet B Table	Opportunities to Repurpose Input Assumptions
B.2.b.1. Early Learning Standards	<ul style="list-style-type: none"> This table allows the user to enter absolute dollar amounts by year of implementation. Therefore, it could be repurposed to capture any cost that the user wishes to vary by year and that are not addressed elsewhere in the CPQ. Note: this is also the case with System Supports in Table B.2.c.8.
B.2.b.3. Staff-Child Ratio	<ul style="list-style-type: none"> The assumptions for the number of classes per day per adult teaching staff member should be consistent with the dosage levels identified in Table B.2.a.1.
B.2.b.4. Monitoring	<ul style="list-style-type: none"> More than one type and frequency of site visits can be modeled within a single scenario, so long as the frequency of visits, cost per visit, and annual participation rates are expressed as a weighted average across all types.
B.2.b.5. Teacher Degree	<ul style="list-style-type: none"> Any combination of up to three degree levels can be modeled for lead teachers, as long as other related input assumptions—and in particular the salaries for teaching staff by degree level—are adjusted accordingly. For example, a user could model AA, BA, and MA degrees, but would need to adjust the salary data in Table B.2.d.1.
B.2.b.6. Teacher Specialized Training	<ul style="list-style-type: none"> Any combination of up to two credential levels can be modeled for lead teachers, so long as the other related assumptions in the table are adjusted accordingly.
B.2.b.7. Assistant Teacher Degree	<ul style="list-style-type: none"> Any combination of up to two degree levels can be modeled for assistant teachers, so long as other related input assumptions—and in particular the salaries for teaching staff by degree level—are adjusted accordingly. For example, a user could model AA and BA degrees, but would need to adjust the salary data in Table B.2.d.1.
B.2.b.8. Teacher In-Service	<ul style="list-style-type: none"> More than one type and frequency of in-service training can be modeled within a single scenario, as long as the training costs per teacher per hour are expressed as a weighted average across all types.
B.2.c.3. Curriculum Standards	<ul style="list-style-type: none"> The user can repurpose any of the default curriculum types to other types, as long as the other related assumptions in the table are adjusted accordingly.

Worksheet B Table	Opportunities to Repurpose Input Assumptions
B.2.c.4. Coaching	<ul style="list-style-type: none"> • In cases where there are multiple staffing levels to coaching, i.e., supervisors, the salaries/benefits/travel/overhead/indirect of these additional levels can be expressed as an additional weighted average cost per coach in the Coaches Salary line item. • A coaching type can be repurposed to address any personnel expense occurring above the provider level that is driven by a volume of classrooms. For example, district-level personnel who also have a classroom caseload can be included in this table (this district level cost would be reported at the state level unless the user manually separates it).
B.2.c.7. Capacity Building	<ul style="list-style-type: none"> • This table can be repurposed to address any state-level cost that applies only to new facilities forecasted to meet the preschool slot plan.
B.2.c.8. System Supports	<ul style="list-style-type: none"> • The rows for Information Technology, Data Systems, and Marketing for can be used instead to model any state-level cost not already accounted for in other tables. In addition, the user can adapt the space in this table to include additional cost calculations based on other metrics within the CPQ, so long as the subtotal row pulls from the appropriate rows in the table. For example, a user could express a System Support cost as volume-dependent, e.g., dependent on the number of classrooms required to service the annual preschool slot plan, and perform a cost calculation multiplying the unit cost for the System Support by the appropriate volume (total number of classrooms) in each Implementation Year.
B.2.c.9. Technical Assistance B.2.c.10. Program Evaluation	<ul style="list-style-type: none"> • The costs in the table can be repurposed to include any cost the user wants to model as a percentage of total state-level expenses. This works best if the ratios, i.e., the costs expressed as a percentage of total state-level costs, are not expected to vary year to year. When this is not the case, such costs can be addressed in Table B.2.c.8; the user can enter these costs as fixed dollar amounts by implementation year under System Supports, and Tables B.2.c.9. & B.2.c.10. can be left blank (0%) or repurposed for another type of cost.

Worksheet B Table	Opportunities to Repurpose Input Assumptions
B.2.d.1. Personnel Costs	<ul style="list-style-type: none"> The default non-teaching staff positions can be repurposed for other position types, so long as the other related input assumptions in the table are adjusted accordingly. Staffing models should reflect the delivery models expressed in Table B.2.a.1. Salary levels of teaching staff by degree level should be consistent with the degree levels expressed for lead teachers in Table B.2.b.5 and for assistant teachers in Table b.2.b.7.
B.2.d.2. Non-Personnel Costs	<ul style="list-style-type: none"> The default line item expenses for non-personnel costs and other direct costs can be repurposed to other categories of cost, so long as the other related input assumptions in the table are adjusted accordingly. Operations costs by dosage in Table B.2.d.2. should reflect the dosage levels assumed in Table B.2.a.1.
B.2.d.3. Other Direct Costs	
B.2.d.4. Indirect Costs	<ul style="list-style-type: none"> The costs in the table can be repurposed to include any cost the user wants to model as a percentage of total provider-level expenses.

Major Modifications. Major enhancements are not recommended for users lacking strong Excel skills, as they require modifications to formulas within not only the Implementation Plan in Worksheet B, but also in Worksheets D, E, and/or F. As mentioned above, the *Trace Dependents* feature in Excel is a very helpful utility when troubleshooting, designing, and implementing major enhancements. Users should take care to understand all of the implications of a proposed change to the CPQ, using the *Trace Dependents* feature, prior to implementing a major modification. However, the CPQ was intentionally designed without write-protected formulas, and with the calculation steps clearly organized, so that more sophisticated Excel users can customize the tool as needed fit their unique needs—and to ensure that the value of the CPQ grows with the needs of the state education agencies it was intended to serve.

Case Studies

Two case studies are provided to help orient and train users of the CPQ. The first case study describes the creation of a single-scenario system model and the creation of an alternative scenario for comparative purposes. The second case study describes the creation of a multiple-scenario system model allocating rural and urban slot counts across four delivery models including Family Child Care (FCC) Homes.

Case Study #1: Comparing Two Alternatives of a Single Scenario - Costs to Increase Preschool Slots and Teacher Compensation

In this case study, the user seeks to model preschool costs for an increase in state-funded preschool slots at Child Care Centers and Public PreK facilities. The user does not wish to model Head Start slots. In addition, the user seeks to understand the increase in cost of raising quality

standards for Teacher degrees, including salary increases and tuition support, resulting from the current standard of no BA requirement to having a requirement that Lead Teachers possess a BA degree. The user wants to model the cost for expanding a Full-Day preschool program over a period of five (5) years, to reach 20% of children below 185% of the Federal Poverty Level (FPL).

As a first step, the user selects a state from the list of states in the drop-down menu at the top of Worksheet B, the Implementation Plan. A name for the scenario and the system is also entered. Once a state is selected, the user will be able to see what percentage of the FPL-eligible population will be reached based on the total annual slot volume entered for each year. The user decides to split the slot counts 50/50 between Child Care Centers and Public PreK, and with a little trial and error, arrives at an annual slot plan that ramps from zero to 15,000 preschool slots over a five-year period. Immediately, the CPQ Tool returns estimates for the total cost, annual cost, and average cost per slot in the green-shaded cells in Table B.1:

Instructions: Enter information and assumptions in yellow-shaded cells only. To add another scenario, copy and paste Columns D-P in the columns to the right (and perform similar copy-and-paste for all other worksheets)

--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

The user wants to focus on the BA degree requirement, and is comfortable with most of the remaining default assumptions in the CPQ. As a next step, the user examines the assumptions in Table B.2.b.5, Teacher Degrees. The user decides in the first scenario to model costs assuming all Lead Teachers are required (and paid) to have an AA degree. Because the user has specified a program with no existing slots, there are no pre-existing teachers to consider, i.e., Total Teachers (Year 0) in row 133 is equal to zero. Therefore, changing the values in Rows 134-145 is not really necessary. Nonetheless, the user enters 0% and 100% in these rows to keep the assumptions in the first scenario as clean as possible, enters 0% and 100% as well as in Rows 149 and 150 to reflect the hiring practice with new teachers, and assumes 0% participation in a tuition support program in Row 152. The resulting changes are circled in red:

Instructions: Enter information and assumptions in **yellow-shaded** cells only. To add another scenario, copy and paste Columns D-P in the columns to the right (and perform similar copy-and-paste for all other worksheets)

Scenario:
System:
State/Region:

Scenario #1
System #1

Table B.1: Model Outputs and Key Performance Metrics

State-Level Implementation Costs	\$1,351,007	\$2,640,778	\$3,801,833	\$5,130,196	\$7,687,236							\$20,611,050
Provider-Level Implementation Costs	\$26,282,470	\$33,261,717	\$81,063,118	\$109,751,694	\$139,354,031							\$409,913,616
Total Annual Implementation Costs	\$27,633,477	\$55,902,495	\$84,864,951	\$114,881,890	\$147,241,847							\$430,524,666
Existing Funding	\$0	\$0	\$0	\$0	\$0							\$0
Funding Surplus/(Shortfall)	(\$27,633,477)	(\$55,902,495)	(\$84,864,951)	(\$114,881,890)	(\$147,241,847)							(\$430,524,666)
Number of 3- and 4-year-olds Served	3,000	6,000	9,000	12,000	15,000							15,000
% of FPL Eligible 3- and 4-Year Old Population Served	3.9%	7.8%	11.8%	15.9%	20.2%							20.2%
Fully Level-Cost per Slot Including Both State-Level and Provider-Level Costs	\$9,211	\$9,317	\$9,429	\$9,573	\$9,816							\$9,816

5. Teacher Degree (Benchmark: BA Degree)

Total Teachers (Year 0)	0	0	0	0	0							0 teachers
% of Teachers with BA degree or higher (Year 0)	100.0%	100.0%	100.0%	100.0%	100.0%							100%
% of Teachers with an AA degree (Year 0)	0.0%	0.0%	0.0%	0.0%	0.0%							0%
% of Teachers without an AA degree (Year 0)	0.0%	0.0%	0.0%	0.0%	0.0%							0%
Subtotal: Number of Teachers with a BA degree or higher (Year 0)	0	0	0	0	0							0 teachers
Subtotal: Number of Teachers with an AA degree (Year 0)	0	0	0	0	0							0 teachers
Subtotal: Number of Teachers without an AA or BA degree (Year 0)	0	0	0	0	0							0 teachers
% of Teachers without BA Participating in Tuition Support to earn BA (Year 0)	0.0%	0.0%	0.0%	0.0%	0.0%							0 teachers
Subtotal: Number of Participating Teachers (Year 0)	0	0	0	0	0							0 teachers
% of Participating Teachers with AA degrees (Year 0)	0.0%	0.0%	0.0%	0.0%	0.0%							0 teachers
Subtotal: Number of Participating Teachers without AA degrees (Year 0)	0	0	0	0	0							0 teachers
% of Participating Teachers without AA degrees (Year 0)	100%	100%	100%	100%	100%							100%
Subtotal: Number of Participating Teachers without AA or BA degrees (Year 0)	0	0	0	0	0							0 teachers
Churn: % of Existing Teachers Leaving the Workforce Each Year (distribution by degree level is maintained)	10%	10%	10%	10%	10%							10%
Entry Schedule: % of Participating Pre-Existing Teachers (Year 0) Entering BA Program Each Year	100%	100%	100%	100%	100%							100%
% of New Teachers Hired with BA or higher (Years 1+)	0.0%	0.0%	0.0%	0.0%	0.0%							0%
% of New Teachers Hired with an AA degree (Years 1+)	100.0%	100.0%	100.0%	100.0%	100.0%							100%
% of New Teachers Hired without an AA or BA degree (Years 1+)	0.0%	0.0%	0.0%	0.0%	0.0%							0%
% of New Teachers without BA Participating in Tuition Support to earn BA (Years 1+)	0.0%	0.0%	0.0%	0.0%	0.0%							0%
% of Participating New Teachers with AA degree (Years 1+)	100.0%	100.0%	100.0%	100.0%	100.0%							100%
% of Participating New Teachers without AA or BA degrees (Years 1+)	0.0%	0.0%	0.0%	0.0%	0.0%							0%
Number of Years Required by AA Teachers to earn BA degree	2.5	2.5	2.5	2.5	2.5							2.5 years
Number of Years Required by Teachers without BA or AA to earn BA degree	5.5	5.5	5.5	5.5	5.5							5.5 years
BA Program Tuition Cost per Year (\$)	\$3,500	\$3,500	\$3,500	\$3,500	\$3,500							\$3,500
Annual State-Level Cost per Participating Teacher to Administrate BA Tuition Support (\$)	\$100	\$100	\$100	\$100	\$100							\$100

Subtotal: Number of Teachers Participating in BA Tuition Support Program per Year												0 teachers
Net Increase in BA Degrees Among Teachers Receiving Tuition Support												
Subtotal: % of All Teachers with a BA Degree of Higher												
Subtotal: Cost of BA Tuition Support Program												\$0

With these new assumptions entered, the green-shaded cells in the Model Outputs in Table B.1 have changed, and the average cost per slot has dropped by approximately \$300 (from \$10,125 to \$9,816 in Year 5)—primarily because the default model assumed a mix of Lead Teachers, with some possessing a BA degree and earning a higher wage. There are no tuition support costs because the user specified 0% of New Teachers without a BA Participating in Tuition Support in Row 152.

The user now wants to create a new scenario to compare the costs of implementing a new BA standard, including higher salaries and tuition support. The user follows the steps outlined in the previous section, Adding “Scenarios”, above. First, the user copies Columns D-P in the Implementation Plan in Worksheet B and copies this Columns Q-AC. If done correctly, the column grouping feature should be retained in the new scenario. Next, the user performs the same step in Worksheets, D, E, F, and A, in that order. Although the text is too small to read in the illustration below, the two scenarios will appear side-by-side as shown below.

Instructions: Enter information and assumptions in yellow-shaded cells only. To add another scenario, copy and paste Columns D-P in the columns to the right (and perform similar copy-and-paste for all other worksheets)

--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

The user renames the second scenario as “Scenario #2” and the second system as “System #2”. At this point, both scenarios should show the same values in Model Output in Table B.1.

In order to assess the cost for requiring Lead Teachers earn a BA degree in the second scenario, the user changes the cells to indicate 100% participation in tuition support in Row 152.

Instructions: Enter information and assumptions in yellow-shaded cells only. To add another scenario, copy and paste Columns D-P in the columns to the right (and perform similar copy-and-paste for all other worksheets)

--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

The bottom of Table B.2.b.5 now shows a count of teachers participating in tuition support, the net increase in BA degrees among teachers participating in tuition support, and the percentage of all teachers with a BA degree. The cost of the tuition support program is shown, and a

higher salary factor is applied in Table B.2.d.1 (one of the default values the user did not change) for teachers with a BA to be paid a higher

		Scenario:	Scenario #1	Scenario #2
		System:	System #1	System #2
		State/Region:	Indiana, IN	Indiana, IN
Table B.1: Model Outputs and Key Performance Metrics				
		Total	Total	
State-Level Implementation Costs		\$20,611,050	\$28,485,448	
Provider-Level Implementation Costs		\$409,913,610	\$415,060,455	
Total Annual Implementation Costs		\$430,524,660	\$443,545,904	
Existing Funding		\$0	\$0	
Funding Surplus/(Shortfall)		(\$430,524,660)	(\$443,545,904)	
Number of 3- and 4-year-olds Served		15,800	15,800	
% of FPL Eligible 3- and 4-Year Old Population Served		20.2%	20.2%	
Fully Loaded Cost per Slot Including Both State-Level and Provider-Level Costs		\$9,816	\$10,133	
5. Teacher Degree (Benchmark: BA Degree)				
		Total	Total	
Total Teachers (Year 0)		0 teachers	0 teachers	
% of Teachers with BA degree or higher (Year 0)				
% of Teachers with an AA degree (Year 0)				
% of Teachers without an AA degree (Year 0)				
Subtotal: Number of Teachers with a BA degree or higher (Year 0)		0 teachers	0 teachers	
Subtotal: Number of Teachers with an AA degree (Year 0)		0 teachers	0 teachers	
Subtotal: Number of Teachers without an AA or BA degree (Year 0)		0 teachers	0 teachers	
% of Teachers without BA Participating in Tuition Support to earn BA (Year 0)				
Subtotal: Number of Participating Teachers (Year 0)		0 teachers	0 teachers	
% of Participating Teachers with AA degrees (Year 0)				
Subtotal: Number of Participating Teachers with AA degrees (Year 0)		0 teachers	0 teachers	
% of Participating Teachers without AA degrees (Year 0)				
Subtotal: Number of Participating Teachers without AA or BA degrees (Year 0)		0 teachers	0 teachers	
Churn: % of Existing Teachers Leaving the Workforce Each Year (distribution by degree level is maintained)		10%	10%	
Entry Schedule: % of Participating Pre-Existing Teachers (Year 0) Entering BA Program Each Year		100%	100%	
% of New Teachers Hired with BA or higher (Years 1+)		0%	0%	
% of New Teachers Hired with an AA degree (Years 1+)		100%	100%	
% of New Teachers Hired without an AA or BA degree (Years 1+)		0%	0%	
% of New Teachers without BA Participating in Tuition Support to earn BA (Years 1+)		0%	100%	
% of Participating New Teachers with AA degree (Years 1+)		100%	100%	
% of Participating New Teachers without AA or BA degrees (Years 1+)		0%	0%	
Number of Years Required by AA Teachers to earn BA degree		2.5 years	2.5 years	
Number of Years Required by Teachers without BA or AA to earn BA degree		5.5 years	5.5 years	
BA Program Tuition Cost per Year (\$)		\$3,500	\$3,500	
Annual State-Level Cost per Participating Teacher to Administrate BA Tuition Support (\$)		\$100	\$100	
Subtotal: Number of Teachers Participating in BA Tuition Support Program per Year		0 teachers	542 teachers	
Net Increase in BA degrees Among Teachers Receiving Tuition Support			386 teachers	
Subtotal: % of All Teachers with a BA Degree of Higher			44%	
Subtotal: Cost of BA Tuition Support Program		\$0	\$7,718,469	

salary. The columns for Scenario #1 are grouped in the illustration above; grouping columns in each of the scenarios (as shown in the illustration to the left) simplifies comparisons.

The user can interpret the results of this analysis to mean that the cost to raise teacher degree standards could result in 44% of teachers earning a BA degree in five years. The total cost for tuition support over that period is \$7.7M dollars.

The total increase in cost for Scenario #2 is \$13M, i.e., the increase in Total (Annual) Implementation Costs for Scenario #2 (\$443.5M) over Scenario #1 (\$430.5M). Since it was already established above that tuition support costs are \$7.7M, the remainder must be the increase in salaries paid to teachers who have earned a BA (\$13M - \$7.7M = \$5.3M).

The user can ungroup columns to review the change in costs over time between the two scenarios. Additional scenarios can also be created and reviewed in a collapsed format such as that shown in the illustration to the left. This case study uses simplifying assumptions, including the lack of an existing preschool program and assuming all new teachers will be hired with an AA (not a BA). These assumptions can be changed to more accurately reflect a real-world situation.

Case Study #2: Costs to Implement Preschool in Urban and Rural Settings, and in Family Child Care

This second case study will use the same background details as the preceding example (a hypothetical full-day preschool program in reaching 20% of 3- and 4-year-olds within five years), except that now the user seeks to model a 50/50 split between urban and rural slots as well as include Family Child Care (FCC) Homes as a delivery model. The user anticipates that, due to the smaller class sizes for FCC Homes, this delivery model cannot be accommodated alongside the other two models (Child Care Centers and Public PreK) within a single scenario, and that two scenarios will be required to describe all three delivery models under a single system. Furthermore, the user wants to vary certain costs between slots allocated to rural area and slots allocated to urban areas; this will also require a doubling of scenarios to model the system. In total, four scenarios will need to be created:

1. Urban Slots – CCC & Public
2. Urban Slots – FCC Homes
3. Rural Slots – CCC & Public
4. Rural Slots – FCC Homes

All four Scenarios will share a common System Name, “System #1.” If the user wanted to run an alternative system, then they can create another four scenarios to the right and label this as “System #2,” etc. As discussed previously, the process is quick and preserves the open-ended flexibility of the CPQ Tool.

A tradeoff occurs between creating scenarios *before* versus *after* conducting an initial review of the CPQ assumptions. In this case, the user recognizes that a number of assumptions will need to be edited or repurposed in order to reflect the differences within a FCC Home Model, and that it makes more sense to perform these edits prior to creating the second set of scenarios for rural slots. Upon creating the latter two scenarios, only those costs specific to the urban versus rural distinction will need to be changed.

The first case study identified a target of approximately 15,000 slots to serve 20% of children below 185% of the Federal Poverty Level. The user decides to split these 50/50 between urban and rural slots, and will further break each of these splits into thirds for each of the delivery models; the result is approximately 2,500 rural slots and 2,500 urban slots for each of the three delivery models by Implementation Year 5. The user models this by adding 500 slots per to each, for five years.

Any of the delivery models within the CPQ can be repurposed, but the requirement to create a new scenario—such as for FCC Homes in this example—depends on whether the input assumptions within a single scenario can accommodate both the default model(s) and the repurposed model. In this case, the user wants to specify a maximum class size of 10 for FCC Homes but 20 for Child Care Centers and Public PreK (both will

still have a Staff:Child ratio of 1:10). Class size assumptions do not vary within a single scenario, so a second scenario is needed—and in that second scenario the user replaces the labels, “Child Care Centers,” with “Family Child Care.” Although these labels are in white cells, the cells are not protected and user decides to change the labels for clarity.

Another consideration with FCC Homes arises when the user recognizes that, on average, only four (4) of the children at a prototypical FCC Home will be 3 or 4 years old. The remaining children will include infants, toddlers, and possibly children 5 years old or older. In contrast, the preschool classrooms for Child Care Centers and Public PreK are assumed to be entirely comprised of 3- and 4-year-olds.

The CPQ was not developed with Family Child Care as a default delivery model, but it is flexible enough to accommodate FCC Homes with only minor enhancements. The user makes the following changes to repurpose the assumptions for FCC Homes in the second scenario:

- Change the Maximum Class Size to four (4) in Table B.2.b.2 (Row 83). This reflects an expected FCC Home serving 10 children, of which only 4 are in the right age group (3- and 4-year-olds), and ensures that the right number of required FCC Homes is identified.
- Change the Number of Preschool Classrooms per Facility to one (1) in Table B.2.b.4 (Row 108). As a reminder, the user is repurposing Child Care Center assumptions in the second scenario for Family Child Homes.
- Change Meals Cost in Table B.2.b.9 (Row 225) to \$3.50 per child per day for Full Day care, to reflect a lower average cost per child at FCC Homes. The user feels the meals cost in the default model is more appropriate to larger facilities that employ additional staff to manage meal prep.
- Change the number of Total Classes per Facility to one (1) in Table B.2.d.1 (Row 351), because a FCC Home oversees only one class per day comprised of children of disparate ages.
- Repurpose the Lead Teacher salary in Table B.2.d.1 (Row 362), to be the take-home pay for the FCC Home provider. Under the assumed class size and Staff:Child ratio, only one adult is required per facility, so all other staff position assumptions should be eliminated (enter zero or blank values as needed). For the single adult, the user first considers modifying the “% of BLS Statistic” to equal 140% of the BLS statistic for a preschool teacher in the state, in order to target a provider’s annual take-home pay of \$38,640, but then realizes this amount must be pro-rated this only for the preschool (3- and 4-year-old) children, i.e., $140\% \times 40 = 56\%$, or else the Personnel Costs per preschool child will be over-reported. The user enters 56% as the appropriate % of BLS Statistic.
- Override the salary factors in Table B.2.d.1 (Rows 368-370) with new factors all equal to 1.00, because the user chooses not to vary FCC provider take-home pay by level of education.
- Reduce benefits to 16.1% in Table B.2.d.1 (Row 412), to reflect only health insurance as a paid benefit.

- Increase per child Operations Costs in Table B.2.d.2 (Rows 429-439) to reflect the user's expectation of a higher per-child costs for various items, due in part to the FCC Home's inability to spread certain costs over a larger population of children, resulting in a total of \$1,787 per child (versus \$1,681 in the default model for Child Care Centers and Public PreK).
- Revise the Rent/Lease/Mortgage costs for a FCC Home in Table B.2.d.2 (Row 445). The user researches residential real estate in the state and finds a median home price of \$130,400 and \$85 per square foot, implying a median square footage of 1,530 sf. At a 3.5% interest rate, 30-yr mortgage, the payment with no money down is \$585.55 per month or \$7,026.65 per year. Real estate taxes average 2.94% on the value of the house so the annual taxes are \$3,833.76. Therefore the total is \$10,860, which divided by 1,530 sf yields \$7.10 per sf (annually).
- Pro-rate a number of assumptions so to reflect only the 4 children in 10 (40%) in FCC who are 3- or 4-years old. This ensures that the cost per slot is accurate; otherwise, 100% of the costs (for the ten children) would be allocated only to the four children assumed per site under Class Size.
 - Under Personnel Costs, the FCC Provider's take-home salary is pro-rated as described above.
 - Under Occupancy costs in Table B.2.d.2 (Row 442), the user assumes total square footage of only 260 sf to represent only the four preschool children at the typical FCC Home, resulting in the same average of 65 sf per child (the same as in the default model) but a reduced total square footage from which to calculate costs that are dependent on square footage.
 - Site level costs in Table B.2.d.2 (Rows 452-455) are each prorated at 40% of the total assumed in the default model. This includes Telephone and Internet, Audit/Accounting/Legal, and Fees/Permits.

With these changes completed, the user is ready to copy the urban slot scenarios to the right and make a few further changes for rural slots. By first revising the assumptions for FCC Homes, prior to creating a rural scenario, the user does not need to re-enter all of the input assumptions. After creating the new rural scenarios (which will have the same slot counts because the user devised a 50/50 split), the user determines that the primary differences between urban and rural preschool settings manifest in three areas: staff salaries, child transportation, and rent/mortgage/lease prices. The user changes the following assumptions to distinguish these costs:

- Adjust salary factors for urban versus rural employment. The user researches cost of living differences using Comparable Wage Index (CWI) data at the school district level from the National Center for Education Statistics, and decides upon a factor of 0.95 (95% of state average salaries) in rural areas, and 1.05 (105%) in urban areas. [Note: the user should check these factors for inconsistencies with the reported state average salaries based on the relative proportion of employment populations in areas designated urban versus rural] To make the adjustment, the user multiplies the "% of BLS Statistic" values by 1.05 in Rows 359-366 for Child Care Centers and Rows 375-382 for Public PreK in Scenario #1. In the FCC Homes urban scenario (Scenario #2), the user only applies the factor to Row 365 (all other

staff categories are blank). For the rural scenarios (#3 & 4), the user performs the same steps but uses a factor of 0.95 instead of 1.05. For example, with FCC Homes the resulting assumptions for % of BLS Statistic will be 59% for urban slots ($1.05 * 56\%$) and 53% for rural slots ($0.95 * 56\%$).

- Retain the assumption of \$250 per child in annual Child Transportation costs (Row 438) for rural slots, but not for urban slots—which the user changes to zero (\$0). The user had previously zeroed out Transportation costs for FCC Homes, so this change only affects urban slots at Child Care Centers and Public PreK (i.e., Scenario #1).
- Apply real estate costs at a 10% higher rate (than the state average) in urban areas and a 10% lower rate in rural areas. To accomplish this, the user increases the values in Row 445 (Rent/Lease/Mortgage) by a factor of 1.1 in the urban scenarios (Scenarios #1 & 2), and applies a factor of 0.90 in Row 445 for Scenarios #3 & 4).

	Scenario:	Urban Slots - CCC & Public	Urban Slots - FCC Homes	Rural Slots - CCC & Public	Rural Slots - FCC Homes
	System:	System #1	System #1	System #1	System #1
	State/Region:	Indiana, IN	Indiana, IN	Indiana, IN	Indiana, IN
Table B.1: Model Outputs and Key Performance Metrics					
		Total	Total	Total	Total
State-Level Implementation Costs		\$7,004,497	\$8,520,656	\$7,004,497	\$8,520,656
Provider-Level Implementation Costs		\$148,178,785	\$67,607,118	\$148,840,681	\$63,894,314
Total Annual Implementation Costs		\$155,183,282	\$76,127,775	\$155,845,178	\$72,414,970
Existing Funding		\$0	\$0	\$0	\$0
Funding Surplus/(Shortfall)		(\$155,183,282)	(\$76,127,775)	(\$155,845,178)	(\$72,414,970)
Number of 3- and 4-year-olds Served		5,000	2,500	5,000	2,500
% of FPL Eligible 3- and 4-Year Old Population Served		6.7%	3.4%	6.7%	3.4%
Fully Loaded Cost per Slot Including Both State-Level and Provider-Level Costs		\$10,598	\$10,903	\$10,643	\$10,398
Table B.2.a.1: Annual Preschool Slot Plan					
		Total	Total	Total	Total
Cumulative Number of 3- and 4-year-old Slots					
Year 0 (Pre-Existing Slots)					
Year 1		1000 slots	500 slots	1000 slots	500 slots
Year 2		2000 slots	1000 slots	2000 slots	1000 slots
Year 3		3000 slots	1500 slots	3000 slots	1500 slots
Year 4		4000 slots	2000 slots	4000 slots	2000 slots
Year 5		5000 slots	2500 slots	5000 slots	2500 slots
Year 6					
Year 7					
Year 8					
Year 9					
Year 10					
Subtotal: Cumulative Slots by Delivery Model		5000 slots	2500 slots	5000 slots	2500 slots

With these changes, the user now has a single system modeled as the sum of four scenarios. As shown in the illustration above, the total number of slots in Year 5 equals 15,000. The Fully Loaded Cost per Slot varies, but not by much; the CPQ is accounting for the fact that several of the changes in assumptions offset one another. FCC Home costs are higher than (the average of) Child Care Centers and Public PreK in urban settings, primarily because there are no assumed Child Transportation costs, whereas FCC Home costs are lower in rural areas because rural Centers and Public PreK facilities do incur such costs. Child Care Centers and Public PreK costs are only slightly higher in rural settings than in urban settings; the increase in cost for Child Transportation in rural areas is offset by lower salaries and rent/lease/mortgage costs. The most significant observed difference in cost per slot is observed between rural and urban FCC Homes. In this case there are no offsetting factors—salary and real estate costs are lower in rural areas and are not offset by any other assumptions.

The user concludes a reasonable cost per slot assumption for their proposed program is between \$10,400 and 10,900. Furthermore, the user observes that the variance between the delivery models and between rural and urban settings is not sufficiently significant to argue for different reimbursement rates to providers under the proposed preschool plan, and decides upon a value of \$10,630 (the weighted average based) for use in developing a proposal to the state legislature. Such minor variance between settings will not always be the case with the CPQ, but in this example no other quality ingredients were varied and the differences in unit costs between urban and rural settings were relatively minor (as was the net result of those entered for FCC Homes). The total proposed cost of the program over five years is \$460M (\$155.2M + \$76.1M + \$155.8M + \$72.4M), as shown in the illustration above. The user can also sum individual Implementation Years to identify the annual operating costs; for Year 5, when the program has reached its target and it as scale, the annual operating cost for 15,000 slots is projected to be \$159.5M.

Glossary

A [CPQ Glossary](#)⁴ accompanies this User Guide, describing each of the input assumptions of the CPQ in greater detail. The Glossary also contains information about the source of the default value for each input assumption and which subsequent modeling calculations are directly impacted the input assumption. Additional notes are provided to help the user in understanding other key aspects and issues.

The terms in the Glossary are presented in the order of appearance in the Implementation Plan in Worksheet B. The following is a sample taken from the beginning of the Glossary, containing the first three entries, to showcase its layout:

Term/Line Item	Description/Explanation	Source of Default Value(s)	Model Metric(s) Impacted	Minor Modifications Allowed			Additional Notes
				Insert Rows	Add Scenarios	Repurpose Elements	
Scenario:	A fully functioning 13-column model within the CPQ. A Scenario is the smallest embodiment of a working CPQ model. Additional scenarios can be created by cutting and pasting the appropriate 13 columns to the right of the original (default) scenario, starting with the Implementation Plan (Worksheet B), and continuing with all remaining worksheets. The only exception is Worksheet C, the Demographic Tables--copying and pasting of the tables in Worksheet C is not necessary when adding scenarios.	n/a	n/a				A single Scenario can represent a complete System, or it can also be used in combination with other Scenarios to model more complex Systems (as the sum of the Scenarios). Multiple Scenarios can also created to compare alternative policy decisions or to gain a better understanding of the sensitivity of total costs to changes in a specific assumption or group of assumptions.
System:	A common identifier employed when multiple Scenarios are used to describe a single, combined preschool slot plan. When only one Scenario is necessary to describe a System, the terms Scenario and System are interchangeable.	n/a	n/a				System-level modeling output is the sum of the output from its Scenarios and can be summarized using separate tables (created by the user); for example, users could create summary tables in the Blank Worksheet and retrieve values from the other worksheets using absolute cell references or the HLOOKUP function in Excel.
State/Region:	A drop-down menu on the Implementation Plan (Worksheet B), allowing the user to draw data from various tables in the Demographic Tables (Worksheet C).	Sources and notes are listed below the title of each table in Worksheet C	Child Populations by Federal Poverty Level, Average Wages, Levels of Educational Attainment Among Teaching Staff				Demographic Tables represent an area for continuous improvement within the CPQ; the Tables can be added to or amended by the user to better meet their needs; currently, all data tables are currently formatted at the state level.

⁴ http://ceelo.org/wp-content/uploads/2016/08/ceelo_cpq_user_guide_glossary_2016_08.pdf

Acknowledgements

The CPQ was produced by the Center on Enhancing Early Learning Outcomes through a contract with Third Sector Intelligence, Inc. (3SI). CEELO works in partnership with SEAs, state and local early childhood leaders, and other federal and national technical assistance (TA) providers to promote innovation and accountability. [3SI](#) is a Seattle-based consulting firm specializing in program evaluation, business intelligence, and technology services.

CEELO is grateful to the following individuals that helped to pilot earlier versions of the CPQ and provided invaluable insight on the utility of the CPQ and perspectives on building capacity to use the tool for state-specific questions and analyses. Amanda Zimmerman, Information Analyst, Early Learning Indiana, lead the team with the following staff from multiple agencies serving IN's young children: Melanie Brizzi, former, Director, Office of Early Childhood and Out of School Learning, Indiana Family and Social Services Administration, Charles Geier, former, Director of Early Learning and Intervention, Indiana Department of Education, Erin Kissling, Early Learning Specialist, Indiana Department of Education, Amanda Lopez, President, Transform Consulting Group, Ted Maple, President and CEO, Early Learning Indiana, Meghan Smith, Professional Development Director, Office of Early Childhood and Out of School Learning, Indiana Family and Social Services Administration, Nathan Williamson, Director of Early Learning and Intervention, Indiana Department of Education.

Appendix: Additional Information to Support Use of CPQ

Differences Between the CPQ and other Cost Tools

A number of tools for estimating the cost of preschool care have been developed. It is also important to distinguish such tools from detailed cost studies emphasizing data collection and tabulation over providing a generic “calculator” that can be applicable to many different situations. There are several areas in which the CPQ was designed as an improvement over existing cost tools calculators:

- The CPQ accounts for state-level (and/or district level) infrastructure and support costs, as well costs at the provider level. Other tools may only consider the provider level, or a subset of state level costs (e.g., professional development).
- The CPQ is not static, i.e., it is not specific to a single point in time (e.g., one year). Instead, it is designed to help users understand how costs will change over a multi-year implementation of quality improvements and/or expansion. There are many instances where costs do not increase in lockstep with the number of children served. Professional development is one example that can be influenced by several additional factors.
- The CPQ allows users to develop a preschool slot plan based on a mix of delivery models (e.g., Child Care Centers, Public PreK, etc.) and dosages (e.g., Part-, Full-, and Extended-day), and vary the mix over an implementation period of up to 10 years.
- The CPQ highlights NIEER quality benchmarks as ingredients that promote quality and underlie the cost of achieving quality improvements.
- The CPQ is provided as a Microsoft Excel model with users having access to the calculations (which are not write-protected). Users can modify the formulas if and as necessary to meet their changing needs over time.
- The CPQ allows users to create side-by-side scenarios to facilitate the comparison of policy alternatives. This feature also enables users to model more complex preschool systems, if they wish, by treating the scenarios as subsets of a larger preschool system.

One tool that has informed the design of the CPQ, specifically at the provider level, is the Provider Cost of Quality Calculator (PCQC) developed by Anne Mitchell (www.ecequalitycalculator.com). The two tools should provide similar provider-level costs; however, the PCQC does not model over multi-year periods and does not include cost assumptions above the provider level. Furthermore, the CPQ is designed to easily allow users to modify the provider-level; for example, users can insert additional rows to include new staff positions within provider Personnel Costs. As a result, the CPQ builds upon the PCQC in meaningful ways and can also lead to significantly different cost estimates over time.

How the CPQ Can Educate the User on Data Requirements for its Preschool Program

The CPQ can be a powerful tool for informing stakeholders on the type of information they require about their preschool program. It accomplishes this by clearly laying out the volume and cost drivers for the expansion and/or improvement of preschool quality. The CPQ comes pre-loaded with demographic information and default input assumptions so that users can immediately begin working with it, and it is expected that users will amend the default assumptions as needed to better represent the cost data they have on-hand. However, users may find that their information is insufficient, perhaps because it is not collected and reported in a meaningful way. In this case, the CPQ helps by highlighting

the data issues. For example, a state may publish an annual workforce report containing summary statistics on preschool teacher qualifications, but if the information is not easily translated into the input assumptions required by the CPQ, then this may educate the state on how it can improve its workforce surveys and reports in the future.

A Suggested Approach Prioritizing Input Assumptions for Further Research

A reasonable process for using the CPQ might involve two passes. The first pass begins with the identification of key modeling dimensions, including which delivery models and dosages will be used, and an initial population of a preschool slot plan (multi-year or for one year). This is followed by an initial ‘quick-pass’ review of the model default inputs in the Implementation Plan (Worksheet B) and an initial evaluation of the modeling output (Worksheets A & B).

During the first pass, default inputs can be assigned into one of three categories:

1. those for which data and sources is readily available,
2. those for which the data is not available but the defaults are deemed reasonable,
3. the remaining inputs, i.e., those for which the user believes additional research is merited.

After classifying the inputs in this way and reviewing the category assignments with stakeholders, the focus shifts to the third category and the assumptions therein can be prioritized for further investigation.

In the second pass, a more thorough review can take place focusing on the validity/sensitivity of this third category of input assumptions. The second pass ends with an updated modeling output that may be more refined (and aligned with stakeholder expectations) than the first pass. Breaking the process into two passes facilitates discussion with the stakeholders and ensures that the research activities are aligned with the CPQ inputs that stakeholders consider to be most important.

An Illustrative Example of Mathematically Checking for Inconsistency Between the Input Assumptions for State Average Teaching Salaries and Teacher Splits by Degree Level

A special case of inconsistency can arise between the assumptions for the split of pre-existing teachers by degree level, the salary factors applied to teachers by degree level, and the current average salary (to which the salary factors apply). This case is illustrated in the following examples:

Example: A user wants to set a salary index for Assistant Teachers with a CDA as 1.10 and 110% of the salaries of Assistant Teachers without a CDA. If the average state salary is equal to the weighted average based on the proportion of each, then as can be shown below, salary factors of 1.10 and 1.00 should not be used. To get to the correct factors, the following two formulas should be solved for “a” and “b”:

$$b/a = 1.10 \quad (1)$$

$$(a * c) + (b * d) = 1.00 \quad (2)$$

Where,

- “a” = the salary index for Assistant Teachers with a CDA*
- “b” = the salary index for Assistant Teachers without a CDA*
- “c” = the percentage of Assistant Teachers (at Year 0) with a CDA*
- “d” = the percentage of Assistant Teachers (at Year 0) without a CDA*

While the user should expect the average state salary to change in future Implementation Years, the user should take steps to ensure that the initial assumptions are consistent, i.e., that the assumed state average Assistant Teacher salary is equivalent to the weighted average salary based on the proportion of Assistant Teachers by degree level.

Note: the example above is also applicable for Teacher Specialized Training (an ECE Credential). For Lead Teacher Degree, i.e., Lead Teachers with a BA, the number of variables increases because there are now three possible levels of educational attainment—a BA degree, an AA degree, or neither. As a result, there will be three equations to solve for “a”, “b”, and “c”.

Example: A user wants to model Lead Teachers with a BA as making 132% of the salary for Teachers with no degree, and Lead Teachers with an AA as making 116% of the salary for Teachers with no degree. The three equations are as follows:

$$a/e = 1.32 \quad (3)$$

$$b/e = 1.16 \quad (4)$$

$$(a * c) + (b * d) + (e * f) = 1.00 \quad (5)$$

Where,

- “a” = the index for Teachers with a BA*
- “b” = the index for Teachers without a BA but with an AA*
- “c” = the percentage of Teachers (at Year 0) with a BA*
- “d” = the percentage of Teachers (at Year 0) without a BA but with AA*
- “e” = the index for Teachers without an AA or BA*
- “f” = the percentage of Teachers (at Year 0) without an AA or BA*

ABOUT CEELO:

One of 22 Comprehensive Centers funded by the U.S. Department of Education's Office of Elementary and Secondary Education, the Center on Enhancing Early Learning Outcomes (CEELO) will strengthen the capacity of State Education Agencies (SEAs) to lead sustained improvements in early learning opportunities and outcomes. CEELO will work in partnership with SEAs, state and local early childhood leaders, and other federal and national technical assistance (TA) providers to promote innovation and accountability.

Permission is granted to reprint this material if you acknowledge CEELO and the authors of the product. For more information, send an email to CEELO at info@ceelo.org.

For other CEELO Policy Reports, Policy Briefs, and FastFacts, go to <http://ceelo.org/ceelo-products>.

Suggested citation:

Rickus, G. (2016). *Cost of Preschool Quality Tool: User Guide*. New Brunswick, NJ: Center on Enhancing Early Learning Outcomes.

This tool was originally produced in whole or in part by the Center on Enhancing Early Learning Outcomes, with funds from the U.S. Department of Education under cooperative agreement number S283B120054. The content does not necessarily reflect the position or policy of the Department of Education, nor does mention or visual representation of trade names, commercial products, or organizations imply endorsement by the federal government.

The Center on Enhancing Early Learning Outcomes (CEELO) is a partnership of the following organizations:

