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Early Learning Outcomes
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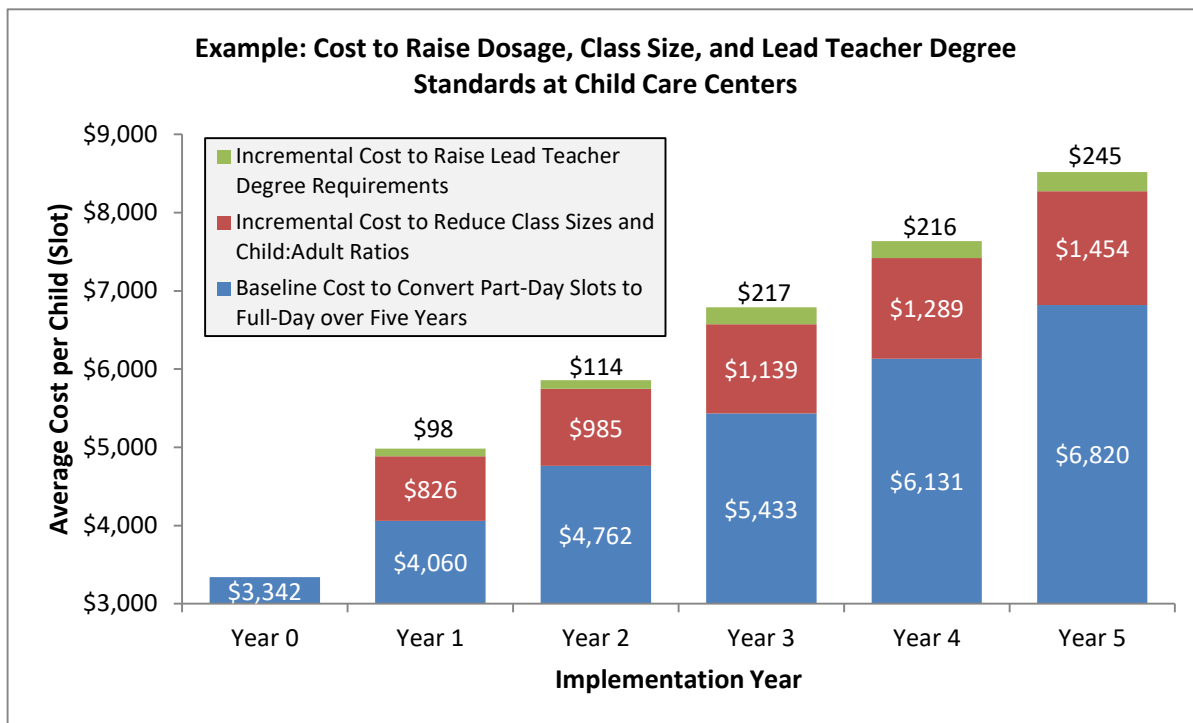
Using the CPQ&R to Create Graphics

Purpose of the Exercise

The following graphic is an example of how to illustrate per child costs associated with increasing specific quality elements, such as teacher degree requirements, reduced class size and increased dosage using the CPQ&R.

NOTE: the values you see in your graphic will be based on the state you selected and may not match the illustrative values shown below. In addition, this graphic was created using *Microsoft Excel Office Professional Plus 2010*; based on which version of Excel you are using, you may need to modify certain steps in the graphic instructions to match the formatting as shown below.

Example: Cost to Raise Dosage, Class Size, and Lead Teacher Degree Standards at Child Care Centers

Legend:
- Incremental Cost to Raise Lead Teacher Degree Requirements
- Incremental Cost to Reduce Class Sizes and Child:Adult Ratios
- Baseline Cost to Convert Part-Day Slots to Full-Day over Five Years

Implementation Year	Baseline	Class Size	Teacher Degree
Year 0	$3,342		
Year 1	$4,060	$826	$98
Year 2	$4,762	$985	$114
Year 3	$5,433	$1,139	$217
Year 4	$6,131	$1,289	$216
Year 5	$6,820	$1,454	$245

(Y-axis: Average Cost per Child (Slot), $3,000 to $9,000)

Instructions for Example Calculation

- In the first scenario in Worksheet B, Implementation Plan, under Rows 24-29 (Implementation Years 0-5), enter the following slot counts for Child Care Centers:
  - Year 0: 10,000 (Part Day); 0 (Full Day)
  - Year 1: 8,000 (Part Day); 2,000 (Full Day)
  - Year 2: 6,000 (Part Day); 4,000 (Full Day)
  - Year 3: 4,000 (Part Day); 6,000 (Full Day)
  - Year 4: 2,000 (Part Day); 8,000 (Full Day)
  - Year 5: 0 (Part Day; 10,000 (Full Day)

- In cell E136, enter a maximum class size of 25.
- In cell, E152, enter a maximum number of children per classroom adult of 12.
- Enter the following for Child Care Centers:
  - In cell E183, "% of Lead Teachers in Year 0 with BA degree or higher"", enter 25%.
  - In cell E184, "% of Lead Teachers in Year 0 with an AA degree but not a BA", enter 75%.
  - In cell, E189, "% of Lead Teachers without a BA in Year 0 Enrolling in a BA Program in Years 1+", enter 0%.
  - In cell, E191, "% of Lead Teachers in Year 0 Enrolling in a BA program in Years 1+ with an AA degree", enter 100%.
  - In cell E200, "% of New Lead Teachers hired in Years 1+ with BA or higher", enter 25%.
  - In cell E201, "% of New Teachers hired in Years 1+ with an AA degree but not a BA", enter 75%.
  - In cell E203, "% of New Lead Teachers without a BA Enrolling in a BA Program in Years 1+", enter 0%.
  - In cell E204, "% of New Lead Teachers Enrolling in a BA Program in Years 1+, Hired with an AA degree", enter 100%.
- In cell E443, "Inflation Factor", enter 0%.
- Add a second and third scenario by pressing the "Add a Scenario" button twice (located on the HOME Page). If you have disabled Excel macros on the CPQ&R, then you will need to add these scenarios by manually copying and pasting the first scenario. For instructions on how to manually copy and paste a scenario, please refer to the User Guide.
- Return to Worksheet B, and in the second and third scenarios, change the following:
  - In Cells R136 & AE136, enter a maximum class size of 20.
  - In Cells R152 & AE152, enter a maximum number of children per classroom adult of 10.
- In the third scenario, further change the following:
  - In Cell AE189, "% of Lead Teachers without a BA in Year 0 Enrolling in a BA Program in Years 1+", enter 100%.
  - In Cell AE203, "% of New Lead Teachers without a BA Enrolling in a BA Program in (Years 1+)", enter 100%.

The resulting three scenarios reflect three increasing levels of quality. The first scenario reflects the baseline cost to convert part-day slots to full-day over five years. The second includes the additional changes of reducing class sizes and child: adult ratios. The third includes those same changes, but also the requirement that 100% of teachers have or are working toward a BA degree.

The incremental cost for the second scenario, i.e., the cost over and above the first scenario, can be calculated by creating the following formulas in each of cells R18:W18:

- In Cell R18, enter $0. Change the cell formatting to dollars without showing cents, if necessary.
- In Cell S18, enter the formula "=S17-F17".
- Copy the formula in Cell S18, and paste in cells T18:W18.

The incremental cost for the third scenario is calculated in a similar manner, as follows:

- In Cell AE18, enter the formula "=AE17-R17". Change the cell formatting to dollars without showing cents, if necessary.
- Copy the formula in Cell AE18, and paste in cells AF18:AJ18.

Instructions for Graphic

- Highlight Cells E17:J17.
- Insert a stacked column chart.
- Change the chart format size to 3.75" high by 6.23" wide.
- Highlight Cells R18:W18.
- Copy the cells and highlight the stacked column chart. Paste Special as a New Series.
- Highlight Cells AE18:AJ18.
- Copy the cells and highlight the stacked column chart. Paste Special as a New Series.
- In the chart, select Format Data Series and change the Gap Width to 50%.
- Select Format Axis for the vertical axis and under Axis Options, set a Minimum (Fixed) of 3,000.
- In Chart Tools Layout, Insert a Chart Title Above Chart, a Primary Horizontal Axis Title Below Axis, and a Primary Vertical Axis Title Rotated Title.
- Highlight the chart title and change the text to "Example: Cost to Raise Dosage, Class Size, and Lead Teacher Degree Standards at Child Care Centers".
- Highlight the horizontal axis title and change the text to "Implementation Year".
- Highlight the vertical axis title and change the text to "Average Cost per Child (Slot)".
- Change the font size of the Chart Title to 11 point, and the font size of the axis titles to 10.5 point.
- Highlight the legend and Format Legend; under Legend Options, uncheck the box to show the legend without overlapping the chart. Under Fill, choose Solid Fill and select the color "White, Background 1, Darker 5%". Under Border Color, choose Solid Line and select the color black.
- Click and drag the legend and move it the upper left-hand corner of the chart.
- Click on each of the series in the chart and select Add Data Label. Change the font color to white for Series 1 and Series 2. Leave the font color black for Series 3, but move each of the data labels above the series. Delete any "$0" values that may appear in Implementation Year 0.
- Highlight the entire chart and select "Select Data…". Add the horizontal category axis labels and change the series names for Series 1, 2, and 3:
  - Edit the Horizontal (Category) Axis Labels for Series 1 and select the Range E8:J8.
  - Edit the Series Name for Series 1 to "Baseline Cost to Convert Part-Day Slots to Full-Day over Five Years".
  - Edit Series 2 to "Incremental Cost to Reduce Class Sizes and Child:Adult Ratios".
  - Edit Series 3 to "Incremental Cost to Raise Lead Teacher Degree Requirements".
- Reduce the font size of the legend to 9 point and resize as needed.
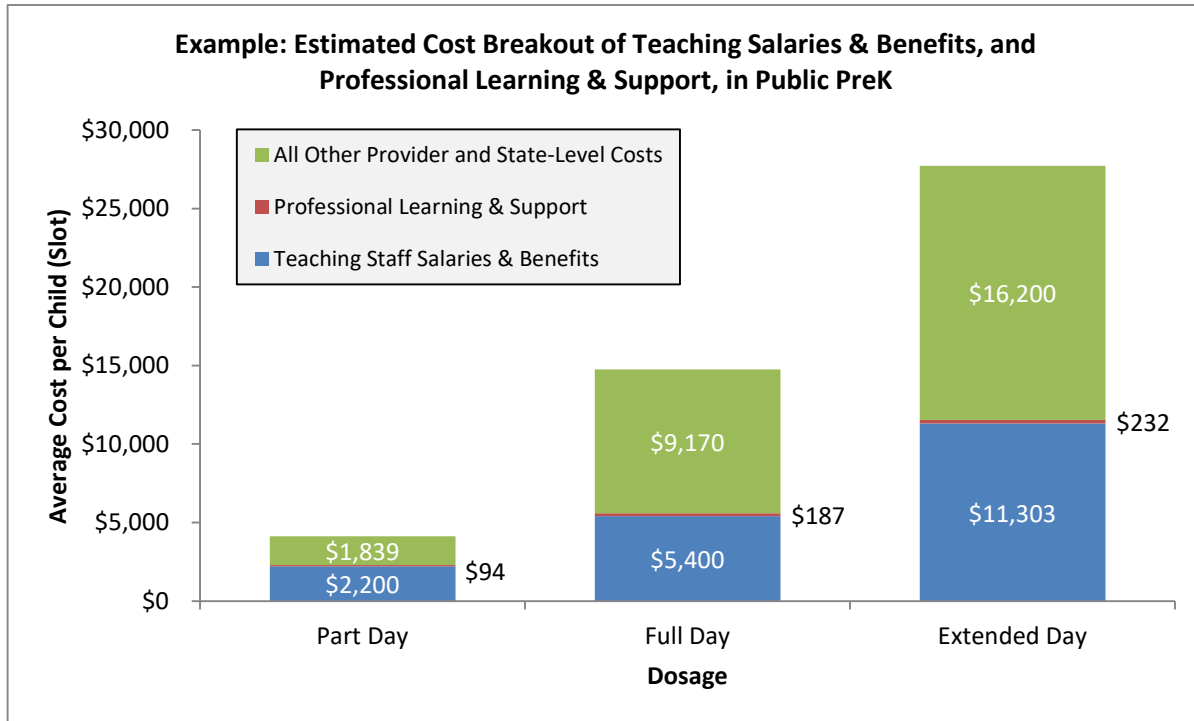- Delete the horizontal gridlines.

The chart graphic is now complete and should be identical to that shown in the example.

Purpose of Exercise

Teacher salaries and benefits are usually the greatest investment for any pre-K program. In this exercise, the following graphic will be created is an example of how to illustrate how these costs vary by program length of day using the CPQ.

NOTE: the values you see in your graphic will be based on the state you selected and will not match the illustrative values shown below. In addition, this graphic was created using *Microsoft Excel Office Professional Plus 2010*; based on which version of Excel you are using, you may need to modify certain steps in the graphic instructions to match the formatting as shown below.

Example: Estimated Cost Breakout of Teaching Salaries & Benefits, and Professional Learning & Support, in Public PreK

Y-axis: Average Cost per Child (Slot) — $0, $5,000, $10,000, $15,000, $20,000, $25,000, $30,000

Legend:
- All Other Provider and State-Level Costs
- Professional Learning & Support
- Teaching Staff Salaries & Benefits

Part Day: $2,200 (Teaching Staff Salaries & Benefits), $1,839 (All Other), $94 (Professional Learning & Support)
Full Day: $5,400, $9,170, $187
Extended Day: $11,303, $16,200, $232

X-axis: **Dosage** — Part Day, Full Day, Extended Day

Instructions for Example Calculation

- In the first scenario, under Rows 24-25 (Implementation Years 0 & 1), enter the following slot counts for Public Pre-K:
  - Year 0: 10,000 (Part Day)
  - Year 1: 10,000 (Part Day)
- Enter participation rates under professional learning and support:
  - Enter 100% in Cells E312:F313
  - Enter 100% in Cells E318:F319
  - Enter 100% in Cells E324:F324

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- In Cell, E443, enter an inflation factor of 0%.
- Add a second and third scenario by either pressing the "Add a Scenario" button twice (located) on the HOME Page. If you have disabled Excel macros on the CPQ&R, then you will need to add these scenarios by manually copying and pasting the first scenario. For instructions on how to manually copy and paste a scenario, please refer to the User Guide.
- In the second scenario, you will move the 10,000 slots from Part Day to Full Day for Public PreK. To do so, enter 10,000 for Year 0 and Year 1 under Full Day, and delete the values under Park Day.
- In the third scenario, you will move the 10,000 slots from Part Day to Extended Day for Public PreK. To do so, enter 10,000 for Year 0 and Year 1 under Extended Day, and delete the values under Park Day.

The resulting three scenarios reflect three different dosage levels—Part Day, Full Day, and Extended Day—with no inflation. Year 1 costs are the subject of interest; you enter slot counts in Year 0 so that the CPQ will treat the 10,000 slots in Year 1 as existing slots, i.e., so that it does not interpret the slots as an expansion in the size of the program.

To create a summary breakdown of costs, you will create a new data table in the Blank Worksheet. The steps to creating the table are as follows:

- In Cell E9, enter "Teaching Staff Salaries & Benefits".
- In Cell E10, enter "Professional Learning & Support".
- In Cell E11, enter "All Other Provider and State-Level Costs".
- In Cell F8, enter "Part Day".
- In Cell G8, enter "Full Day".
- In Cell H8, enter "Extended Day".
- In Cell F9, enter the following formula:

    ='A. Summary Outputs & Index'!F60

- In Cell F10, enter the following formula:

    ='A. Summary Outputs & Index'!F62+('E. State-Level Infrastr&Support'!F17+'E. State-Level Infrastr&Support'!F21+'E. State-Level Infrastr&Support'!F22+'E. State-Level Infrastr&Support'!F35+'E. State-Level Infrastr&Support'!F39+'E. State-Level Infrastr&Support'!F45)/'A. Summary Outputs & Index'!F17

- In Cell F11, enter the following formula:

    ='A. Summary Outputs & Index'!F70-F9-F10

These formulas are summing costs from Year 1 of the first scenario. To copy and paste these formulas for the second and third scenarios, perform the following:

- Highlight Cells F9:F11 in the new data table created in the Blank Worksheet.
- Copy and paste the cells into Cells S9:S11 (for the second scenario), and again into Cells AF9:AF11 (for the third scenario.

- Move Cells S9:S11 to Cells G9:G11, under the heading created in Cell G8 for "Full Day".
- Move Cells AF9:AF11 to Cells H9:H11, under the heading created in Cell H8 for "Extended Day".

The data table is now complete and can be used for creating a chart graphic.
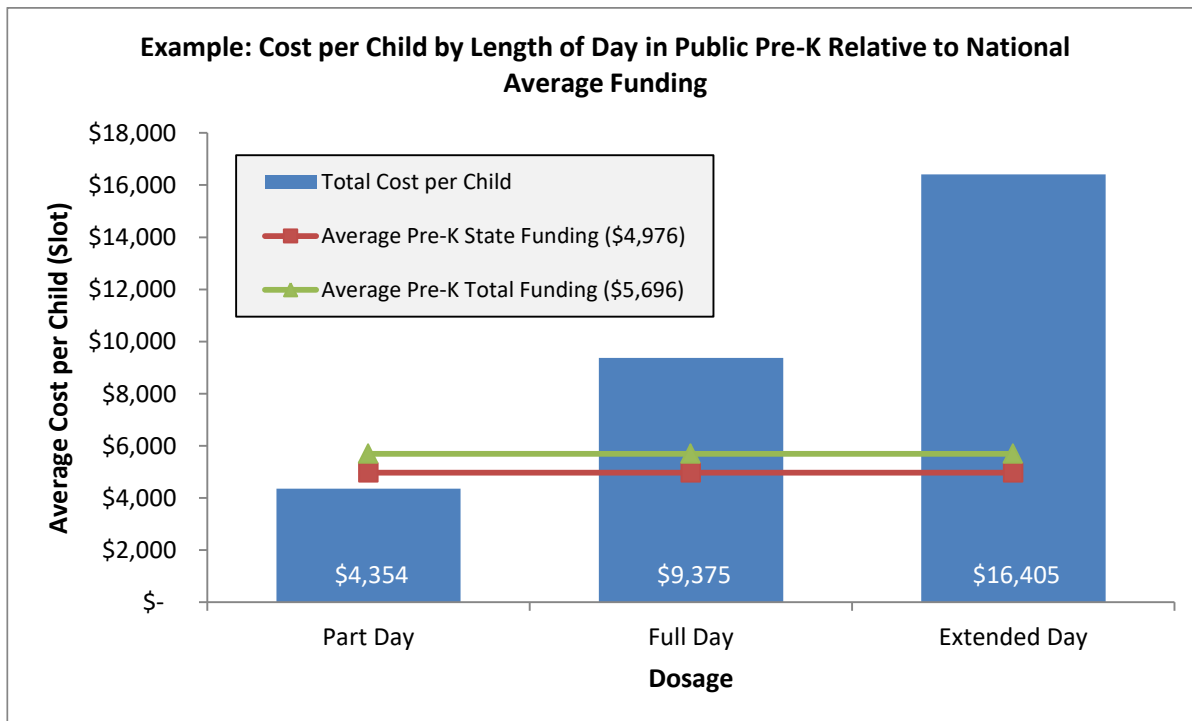
Instructions for Graphic
- Using the table created in the preceding instructions in the Blank Worksheet, highlight Cells E8:H11.
- Insert a stacked column chart.
- Change the chart format size to 3.75" high by 6.25" wide.
- In the chart, select Format Data Series and change the Gap Width to 75%.
- In Chart Tools Layout, Insert a Chart Title Above Chart, a Primary Horizontal Axis Title Below Axis, and a Primary Vertical Axis Title Rotated Title.
- Highlight the chart title and change the text to "Example: Estimated Cost Breakout of Teaching Salaries & Benefits, and Professional Learning & Support, in Public PreK".
- Highlight the horizontal axis title and change the text to "Dosage".
- Highlight the vertical axis title and change the text to "Average Cost per Child (Slot)".
- Change the font size of the Chart Title to 11 point. The font size of the axis titles should be 10 point.
- Highlight the legend and Format Legend; under Legend Options, uncheck the box to show the legend without overlapping the chart. Under Fill, choose Solid Fill and select the color "White, Background 1, Darker 5%". Under Border Color, choose Solid Line and select the color black.
- Click and drag the legend to the upper left-hand corner of the chart.
- Change the font size of the legend to 9 point, and resize the legend so that it is not overlapping any of the data series (i.e., stacked columns).
- Click on each of the series in the chart and select Add Data Label. Change the font color to white for "Teaching Staff Salaries & Benefits", and also for "All Other Provider and State-Level Costs". Leave the font color black for "Professional Learning and Support", but move each of the data labels to the right of the series.
- Delete the horizontal gridlines.

The chart graphic is now complete and should be identical to that shown in the example.

Purpose of the Exercise

The following graphic is an example of how to illustrate the average per child costs associated with the length of day a child attends a program.

NOTE: the values you see in your graphic will be based on the state you selected and may not match the illustrative values shown below. In addition, this graphic was created using *Microsoft Excel Office Professional Plus 2010*; based on which version of Excel you are using, you may need to modify certain steps in the graphic instructions to match the formatting as shown below.

Instructions for Example Calculation
- In Worksheet B, Implementation Plan, enter the following slot counts in Year 0 for Public Pre-K in Row 24:
  - In Cell H24, enter a value of 2,000 (Part Day)
  - In Cell I24, enter a value of 2,000 (Full Day)
  - In Cell J24, enter a value of 2,000 (Extended Day)
- Next, create a summary data table for your graphic in the Blank Worksheet. The steps to creating the table are as follows:
  - In Cell E9, enter "Total Costs per Child".
  - In Cell E10, enter "Average Pre-K State Funding ($4,976)". This is the statistic for the national average state spending per child reported in the NIEER's State Preschool Yearbook.

- In Cell E11, enter "Average Pre-K Total Funding ($5,696)". This is the statistic for the national average for all reported funding per child reported in the NIEER's State Preschool Yearbook. All reported funding includes state, federal, and local sources of funding.
- In Cell F8, enter "Part Day".
- In Cell G8, enter "Full Day".
- In Cell H8, enter "Extended Day".
- In Cell F9, enter the following formula:

    ='F. Provider-Level Services'!E12+('A. Summary Outputs & Index'!E9/'A. Summary Outputs & Index'!E17)

- In Cell G9, enter the following formula:

    ='F. Provider-Level Services'!E13+('A. Summary Outputs & Index'!E9/'A. Summary Outputs & Index'!E17)

- In Cell H9, enter the following formula:

    ='F. Provider-Level Services'!E14+('A. Summary Outputs & Index'!E9/'A. Summary Outputs & Index'!E17)

These formulas add the provider-level cost per slot and the state-level cost per slot, for the specified length of day.

- In Cells F10, G10, and H10, enter a value of $4,976.
- In Cells F11, G11, and H11, enter a value of $5,696.
- If the cells in the Range F9:H11 are not already formatted in dollars, the format to show dollars (and showing no decimals for cents)

The completed data table compares the CPQ&R cost per slot of day with selected statistics from the NIEER State of Preschool Yearbook.

Instructions for Graphic
- In the Blank Worksheet, highlight Cells E8:H11.
- Insert a stacked column chart.
- Change the chart format size to 3.75" high by 6.23" wide.
- In the chart, select the series "Average Pre-K Total Funding ($5,596)" and Change Chart Type to Line with Markers.
- Select the series "Average Pre-K State Funding ($4,975)" and Change Chart Type to Line with Markers.
- Select Format Data Series and change the Gap Width to 75%.
- In Chart Tools Layout, Insert a Chart Title Above Chart, a Primary Horizontal Axis Title Below Axis, and a Primary Vertical Axis Title Rotated Title.
- Highlight the chart title and change the text to "Example: Cost per Child by Length of Day in Public Pre-K Relative to National Average Funding".
- Highlight the horizontal axis title and change the text to "Dosage".

- Highlight the vertical axis title and change the text to "Average Cost per Child (Slot)".
- Change the font size of the Chart Title to 11 point, and the font size of the axis titles to 10.5 point.
- Highlight the legend and Format Legend; under Legend Options, uncheck the box to show the legend without overlapping the chart. Under Fill, choose Solid Fill and select the color "White, Background 1, Darker 5%". Under Border Color, choose Solid Line and select the color black.
- Click and drag the legend and move it the upper left-hand corner of the chart.
- Click on the series "Total Cost per Child" in the chart and select Add Data Labels. Change the font color to white. Change the Label Position to Inside Base.
- Reduce the font size of the legend to 9 point and resize as needed.
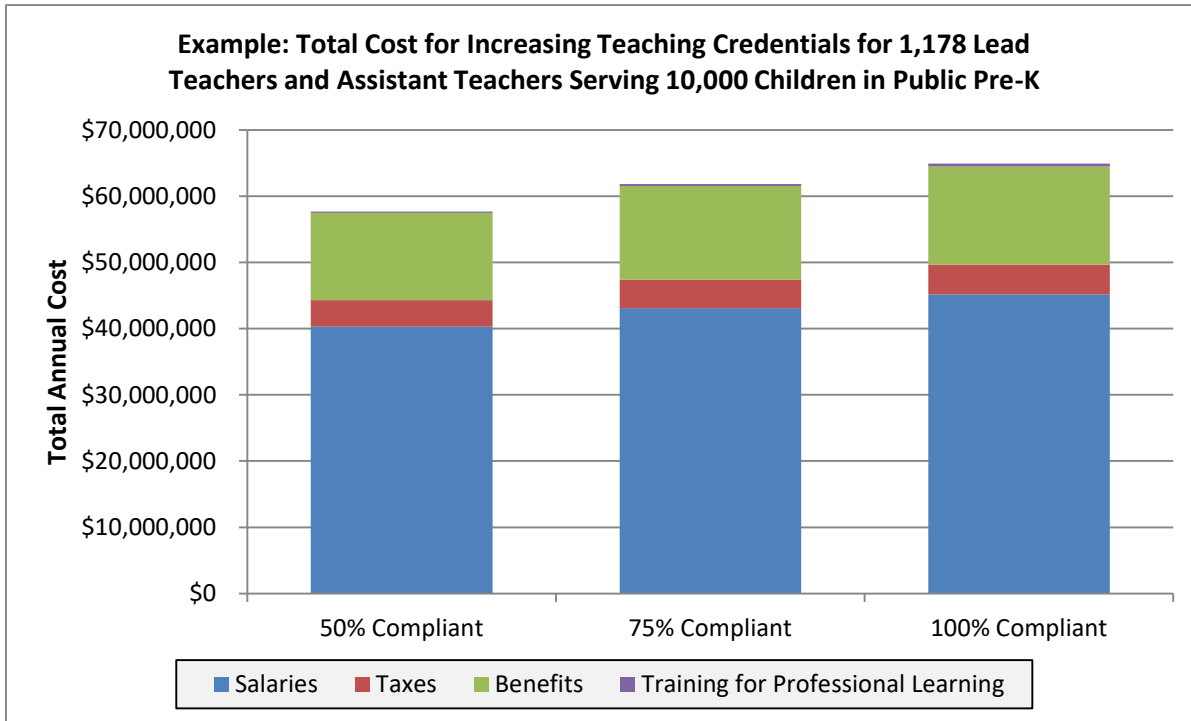- Delete the horizontal gridlines.

The chart graphic is now complete and should be identical to that shown in the example.

The CPQ&R tool allows the state to understand the total annual cost of having lead teachers and assistant teachers meet credentialing and degree requirements. For lead teachers this would include a BA with early childhood degree specialization and teacher licensure. For assistant teachers this would include CDA or equivalent. For both lead teachers and assistant teachers, it also includes 15 hours of annual training for professional development.

Purpose of Exercise:

The following graphic is an example of how to illustrate per child costs associated with increasing the proportion of lead teachers and assistant teachers meeting credentialing and degree benchmarks.

Example: Total Cost for Increasing Teaching Credentials for 1,178 Lead Teachers and Assistant Teachers Serving 10,000 Children in Public Pre-K

Legend: Salaries, Taxes, Benefits, Training for Professional Learning

The following three scenarios will be created in the CPQ&R:

1. In Scenario 1, the percentage of lead teachers with a BA degree or higher, lead teachers with specialized training, assistant teachers with a CDA or higher, and lead teachers and assistant teachers participating in training for professional learning will be set at 50%.
2. In Scenario 2, all of the aforementioned categories will be set at 75%.
3. In Scenario 3, all of the aforementioned categories will be set at 100%.

NOTE: the values you see in your graphic will be based on the state you selected and may not match the illustrative values shown below. In addition, this graphic was created using *Microsoft Excel Office Professional Plus 2010*; based on which version of Excel you are using, you may need to modify certain steps in the graphic instructions to match the formatting as shown below.

Instructions for Example Calculation

- In the first scenario in Worksheet B, Implementation Plan, enter 10,000 slots in Cell I24. This assumption estimates 10,000 children in Year 0 for Full Day Care in Public Pre-K. [Note: To get to this cell you can press the "Annual Slots" button on the HOME Page.]
- In Cell F183, "% of Teachers in Year 0 with BA degree or higher", enter a value of 50%. [Note: To get to this cell you can press the "Lead Teacher Degree" button on the HOME Page.]
- In Cell F224, "% of Assistant Teachers in Year 0 with a CDA or Equivalent", enter a value of 50%. [Note: To get to this cell you can press the "Assistant Teacher Degree" button on the HOME Page.]
- In Cell F254, "% of Lead Teachers in Year 0 with Specialized Training in ECE/CD", enter a value of 50%. [Note: To get to this cell you can press the "Lead Teacher Specialized Training" button on the HOME Page.]
- In Cells E312 and E313, "Participation Rate Among Lead Teachers" and "Participation Rate Among Assistant Teachers", respectively, enter a value of 50%. [Note: To get to these cells you can press the "Professional Learning and Support" button on the HOME Page.]
- Add a second and third scenario by pressing the "Add a Scenario" button twice (located on the HOME Page). If you have disabled Excel macros on the CPQ&R, then you will need to add these scenarios by manually copying and pasting the first scenario. For instructions on how to manually copy and paste a scenario, please refer to the User Guide.
- Return to Worksheet B, and in the second scenario, change the following:
  - In Cell S183, change the value to 75%.
  - In Cell S224, change the value to 75%.
  - In Cells 254, change the value to 75%.
  - In Cells R312 and R313, change the values to 75%.
- In the third scenario, change the following:
  - In Cell AF183, change the value to 100%, and in Cell AF184, change the value to 0%. This additional change is required since the sum of these two cells should not exceed 100%.
  - In Cell AF 224, change a value of 100%.
  - In Cell AF254, change the value to 100%
  - In Cells AE312 and AE313, change the values to 100%

The resulting three scenarios reflect three increasing levels of quality. You will next create a summary data table for your graphic in the Blank Worksheet.

The steps to creating the table are as follows:

- In the Blank Worksheet, in Cell E9, enter "Salary".
- In Cell E10, enter "Taxes".
- In Cell E11, enter "Benefits".

- In Cell E12, enter "Training for Professional Development".
- In Cell F8, enter "50% Compliant".
- In Cell G8, enter "75% Compliant".
- In Cell H8, enter "100% Compliant".
- In Cell F9, enter the following formula:

  ='F. Provider-Level Services'!E277'F. Provider-Level Services'!E198*

- In Cell F10, enter the following formula:

  ='F. Provider-Level Services'!E278'F. Provider-Level Services'!E198*

- In Cell F11, enter the following formula:

  ='F. Provider-Level Services'!E279'F. Provider-Level Services'!E198*

- In Cell F12, enter the following formula:

='F. Provider-Level Services'!E285'F. Provider-Level Services'!E198*

Please note that all of the formulas above reference Column E of the CPQ&R, and are multiplying the CPQ&R calculated cost per Pre-K facility by the number of facilities required to serve 10,000 children.

- If the resulting values are not formatted in dollars, then format the cells in dollars without showing decimals (cents).
- Create similar formulas for "75% Compliant" and "100% Compliant", i.e., the second and third scenarios, respectively. Copy the formulas in the Blank Worksheet in Cells F9:F12 and to Cells S9:S12 and AF9:AF12. Next, you will move the contents of Cells S9:S12 to Cells G9:G12, and move the contents of Cells AF9:AF12 to Cells H9:H12.

You should now have a completed data table with the first data column containing formulas referencing Column E (for the first scenario), and the second and third data column formulas referencing Columns R and AE for the second and third scenarios.

Instructions for Graphic
- In the Blank Worksheet, highlight Cells E8:H12.
- Insert a stacked column chart.
- If you don't see columns for "50% Compliant", "75% Compliant", and "100% Compliant" across the horizontal axis, then in the chart choose Select Data and press the button to Switch Row/Column.
- Change the chart format size to 3.75" high by 6.23" wide.
- Select Format Data Series and change the Gap Width to 75%.
- In Chart Tools Layout, Insert a Chart Title Above Chart and a Primary Vertical Axis Title Rotated Title.
- Highlight the chart title and change the text to "Example: Total Cost for Increasing Teaching Credentials for 1,178 Lead Teachers and Assistant Teachers Serving 10,000 Children in Public Pre-K".
- Highlight the vertical axis title and change the text to "Total Annual Cost".

- Change the font size of the chart Title to 11 point and the axis title to 10.5 point.
- Highlight the legend and choose Format Legend; under Legend Position, choose Bottom. Under Fill, choose Solid Fill and select the color "White, Background 1, Darker 5%". Under Border Color, choose Solid Line and select the color black.

The chart graphic is now complete and should be identical to that shown in the example.
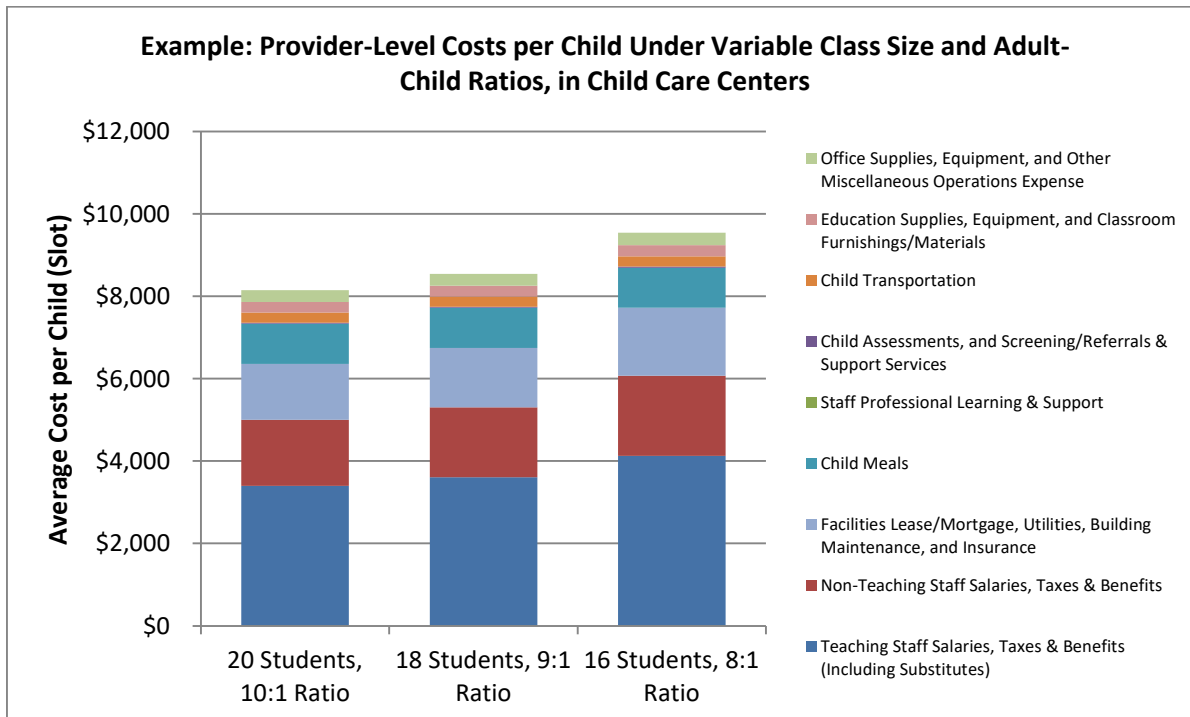
Purpose of the Exercise

The following graphic is an example of how to illustrate costs associated with reducing class size and student-to-teacher ratios, both of which contribute to higher average per child costs.

The following three scenarios will be created in the CPQ&R:

4. In the first scenario, the maximum class size is 20 and the staff-child ratio is 1:10.
5. In the second scenario, the maximum class size is 18 and the staff-child ratio is 1:9.
6. In the third scenario, maximum class size is 16 and the staff-child ratio is 1:8.

NOTE: the values you see in your graphic will be based on the state you selected and may not match the illustrative values shown below. In addition, this graphic was created using *Microsoft Excel Office Professional Plus 2010*; based on which version of Excel you are using, you may need to modify certain steps in the graphic instructions to match the formatting as shown below.

Example: Provider-Level Costs per Child Under Variable Class Size and Adult-Child Ratios, in Child Care Centers

- In the first scenario in Worksheet B, Implementation Plan, enter 10,000 slots in Cell F24. This assumption estimates 10,000 children in Year 0 for Full Day Care in Child Care Centers. [Note: To get to this cell you can press the "Annual Slots" button on the HOME Page.]
- Add a second and third scenario by pressing the "Add a Scenario" button twice (located on the HOME Page). If you have disabled Excel macros on the CPQ&R, then you will need to add these scenarios by manually copying and pasting the first scenario. For instructions on how to manually copy and paste a scenario, please refer to the User Guide.
- In Worksheet B, Implementation Plan, in Cell R136, enter a value of 18. [Note: To get to this cell you can press the "Maximum Class Size" button on the HOME Page.]
- In Cell AE136, enter a value of 16.
- In Worksheet B, Implementation Plan, in Cell R152, enter a value of 9. [Note: To get to this cell you can press the "Staff-Child Ratio" button on the HOME Page.]
- In Cell AE153, enter a value of 8.

You will next create a summary data table for your graphic, using values that are presented in Worksheet A, Summary Outputs & Index. The steps to creating the table are as follows:

- In the Blank Worksheet, in Cell F8, enter "20 Students, 10:1 Ratio".
- In Cell G8, enter "18 Students, 9:1 Ratio".
- In Cell H8, enter "16 Students, 8:1 Ratio".
- Copy the Row labels in Worksheet A, Rows, 37-45, for your data table. To do this, copy the Range A37:A45 in Worksheet A and paste the values in the Blank Worksheet in Cells E9:E17.
- In Cell F9, enter the following formula:

  ='A. Summary Outputs & Index'!E37

- Copy the formula into Cells F10:F17. You should now be referencing Worksheet A, Cells E37:E45, in Cells F9:F17 of the Blank Worksheet.
- Create similar formulas for "18 Children, 9:1 Ratio" and "16 Children, 8:1 Ratio", i.e., the second and third scenarios, respectively. Copy the formulas in the Blank Worksheet in Cells F9:F17 and to Cells S9:S17 and AF9:AF17. Next, you will move the contents of Cells S9:S17 to Cells G9:G17, and move the contents of Cells AF9:AF17 to Cells H9:H17.

  You should now have a completed data table with the first data column containing formulas referencing Column E (for the first scenario), and the second and third data column formulas referencing Columns R and AE for the second and third scenarios.

- In the Blank Worksheet, highlight Cells E8:H17.
- Insert a stacked column chart.
- If you don't see columns for "20 Students, 10:1 Ratio", "18 Students, 9:1 Ratio", and "16 Students, 8:1 Ratio" across the horizontal axis, then in the chart choose Select Data and press the button to Switch Row/Column.

- Change the chart format size to 3.75" high by 6.23" wide.
- Select Format Data Series and change the Gap Width to 75%.
- In Chart Tools Layout, Insert a Chart Title Above Chart and a Primary Vertical Axis Title Rotated Title.
- Highlight the chart title and change the text to "Example: Provider-Level Costs per Child Under Variable Class Size and Adult-Child Ratios, in Child Care Centers".
- Highlight the vertical axis title and change the text to "Average Cost per Child (Slot)".
- Change the font size of the chart Title to 11 point and the axis title to 10.5 point. Change the font size of the legend to 7 point, so that all series names are shown.
- Reorder the series to show the largest categories on the bottom of each stacked bar. You will choose Select Data and using the up and down arrows on the left side of the menu to manually re-order the series. In the graphic example, Facilities Lease and Child Meals have been moved up to follow Salaries and Benefits for Teaching Staff and Non-Teaching Staff.

The chart graphic is now complete and should be identical to that shown in the example.