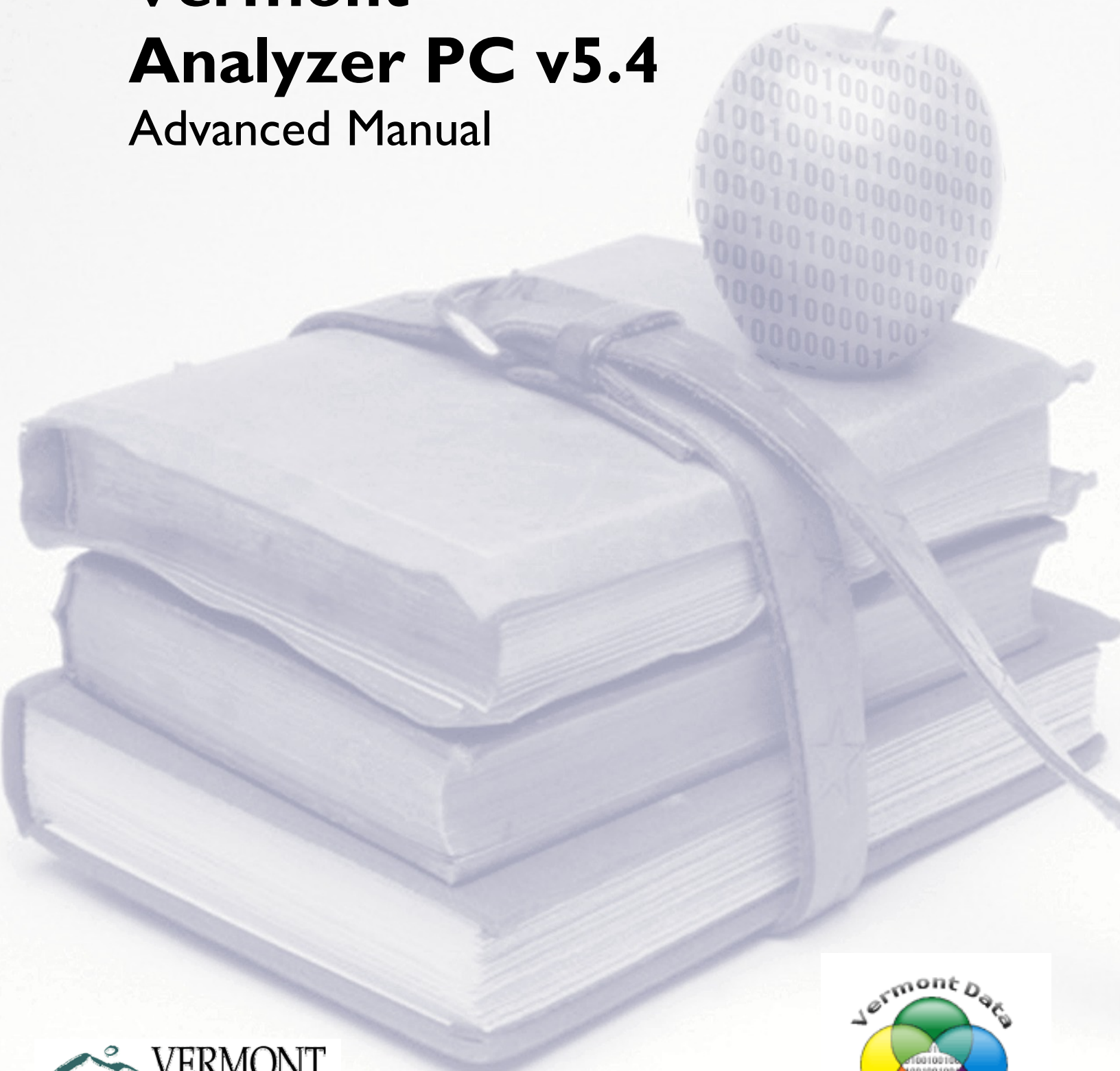
Vermont Analyzer PC v5.4

Advanced Manual



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Vermont Data Consortium

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Chapter

1

Getting Started

Overview

VT EDW Analyzer is a data warehouse, mining, and analysis system designed to facilitate access to a variety of educational data and improve the decision making process. This product enables districts to establish educational benchmarks and track performance at the district, school, and class levels. In addition, the product enables multi-dimensional analysis of performance information (e.g., review of test scores by gender, ethnicity, economic background, etc.). All types of local, state, and national level performance information can be easily loaded into VT EDW Analyzer and utilized to monitor progress in regard to the learning mission. Unique features of VT EDW Analyzer include:

- Graphical User Interface (GUI) that enables drill down/drill up
- Multi-dimensional functionality with easy data manipulation
- Cohort matching over time
- Time set constraints that allow group analysis over time

VT EDW Analyzer enables school districts to measure, analyze, and communicate educational programs and assessments. These analyses will focus on enhancing the educational performance of schools, school districts and individual students in relation to local, state, and national criteria.

A **data warehouse** is a central repository where data that your school or district collects (such as assessment data, student and teacher demographic data, school and course information, etc.) can be stored and easily accessed. Unlike your student information system (SIS), VT EDW *does not* allow users to change or update the data that has been loaded into your warehouse.

Who should use this training guide

This training guide is available for any user participating in the VT EDW PC Advanced Class.

How to use this training guide

This training guide follows a skills-building approach. Each section contains instruction for more complex features while utilizing knowledge from earlier sections. The class instructor will follow the training guide that serves as a reference for note taking and future use.

At the end of this training session, you will be able to edit non-enumerated text coordinates by searching for specific members, create distributions and thresholds, isolate groups of students to look at over time, create queries that match cohorts over time, and add multiple constraints to queries and lists.

Look for the icons below to get quick tips and other valuable information as you work through this manual.

Tips

Knowledge Base

General Information

Hands-on

Link to VT EDW Analyzer Favorite

Chapter

2

Review of Query Creation Process

Objectives

When you complete this chapter, you will be able to:

- List the recommended steps in the creation of a VT EDW query

Following the Query Creation Process

Remember that by adhering to the basic process for query creation that we follow in class, creating queries will become a habit, making both basic and advanced queries easy to create.

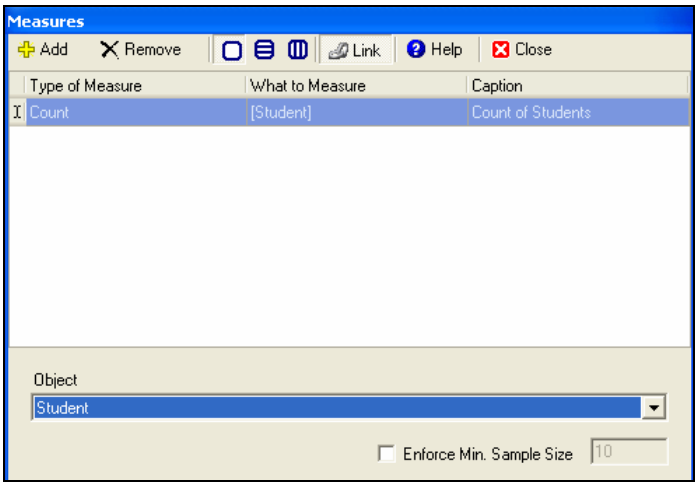
Step 1: Define the Query in Words

Sometimes the most difficult step is the getting started. Creating a query in VT EDW Analyzer is the same; you must first identify what data you are interested in looking at and analyzing. For example, you might say to yourself, "I need to run some reports that look at various demographic breakdowns of my student population." That is a good start, but "student population" and "demographics" cover a very broad area. When you begin thinking about creating a query, be very specific and write down the exact query you are trying to create. An example of a specific query is, *"I need a count of my student population by grade and gender for 2006-2007."* You might even want to draw a picture of how the query will appear in the final results table.

Step 2: Select the Measure

Once the query is defined, you can then get into VT EDW and begin the actual hands-on creation of your query. All queries must have a Measure defined. As mentioned in the Basic class, the Measure is the mathematical foundation of the query and lets you define how the data is statistically represented. **The Default Measure is Count of Students**

1) Go to the Ruler icon on the toolbar to open the Measures window.
2) Click Add.
3) Under Type of Measure, select Count.
4) For What to Measure, select Student from the Object dropdown list at the bottom of the popup window.
5) Lastly, define the caption for the Measure by typing a description in the Caption field.



Since there is only one Measure used in this query, the measure can be left in the background. Click Close to hide the Measures window.

Note: The caption appears as part of the query only if the Measure is placed on the rows or columns. Otherwise, it displays as part of the Summary information above the Query Table.

Step 3: Set Time Parameters

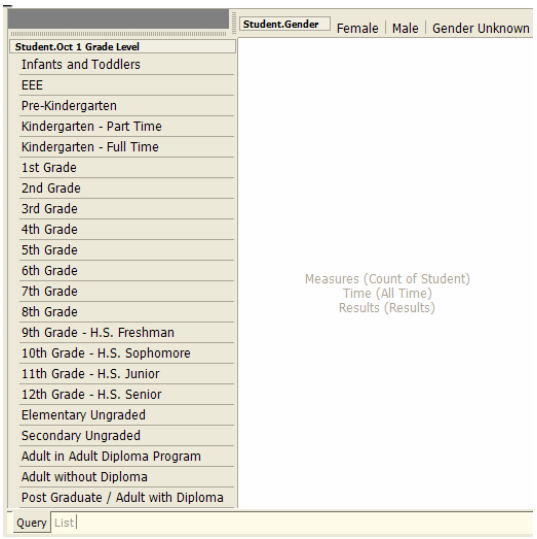
The next step is to select the appropriate time periods representing the data that is to be queried. This will limit the data that is returned to the year(s) you select.

1) Click the Time Periods icon on the toolbar.
2) Click the checkbox beside the 2000-2001 option and then click Close.
   - ✓ Since there is only one time period specified for this query, Time can remain on the background.

Step 4: Define the Rows and Columns

Referring back to the query we defined in Step 1, we now need to select the specific Attributes that will further define our query. To do this, we'll drag and drop elements from the Objects Panel into the rows and columns of the query table.

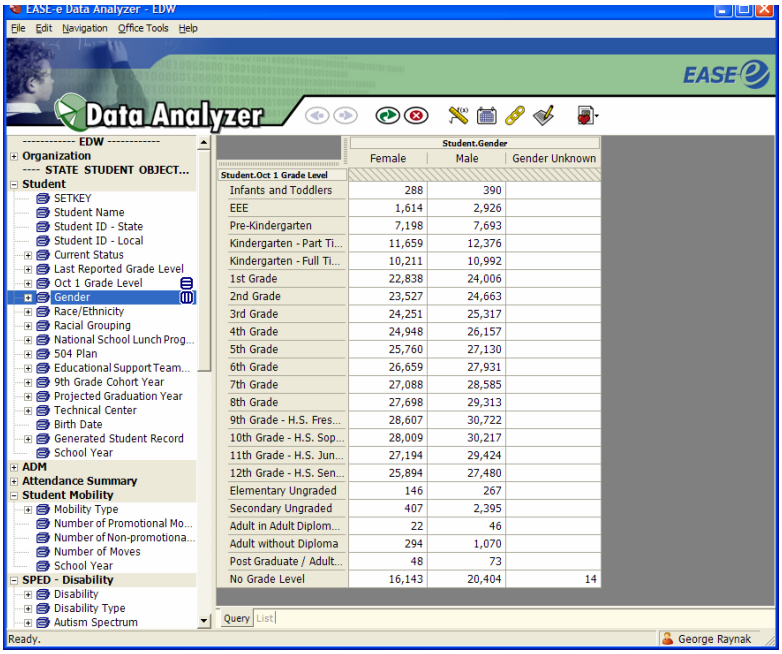
1) Under the Student Object, highlight Oct 1 Grade Level and click and drag it to the Empty box representing the rows.
2) Under the Student Object, highlight Gender and click and drag it to the Empty box representing the columns. Your query will look like the following illustration.



Step 5: Run the Query

The last step is to run the query.

1) Run the query by clicking the Run Query icon on the toolbar. See the sample query results below.



Trouble-Shooting in VT EDW

As with any computer application, the more you know about trouble-shooting and working through common problems, the better your experience with the program will be, and the more valuable the program will become as you master the functionality.

Trouble-Shooting Queries

If you're using the VT EDW Warehouse (*EDWA*) as you work through this manual and your query results don't match the ones displayed in this training manual, try these simple trouble-shooting techniques:

- Go back into the Measures window and make sure you have selected the correct Measure(s) as well as the Object(s) and/or Attributes the query requires. A slip of the mouse makes it easy to select Maximum when you meant to select Mean.
- Check your Time Periods – you may have forgotten to select the appropriate year(s) or to select any time period at all (which would then display results for All Time). This is a very common oversight.
- Check that you have added the correct Attributes and/or members to the rows and columns. It's easy to select NSRE Math Performance Levels instead of NSRE ELA Performance Levels or to select the Grade Level attribute under Organization instead of the Oct 1 Grade Level attribute under the Student object.
- Check your results against a co-worker. If you're working in your own data warehouse, you may be unsure if you constructed your query correctly. The best check is to get a co-worker to create the same query from scratch and compare your results. The chance that you both did it incorrectly and got the same incorrect answers is generally slim.

Trouble-Shooting Other Issues in VT EDW

More than likely, if you get an error message as you work with VT EDW PC, it will have to do with internet connectivity. Because most of the processing takes place on the server end, if there is a breakdown somewhere between the sending and receiving of query parameters or results, a query may time-out. The following tips often clear up any error messages you may get as you work with VT EDW.

Anytime you get an error when you run a query, the first course of action should be to just rerun the query.

If that fails to provide results, save the query as a favorite, clear the query (Edit | Reset All) and pull up the saved favorite and try to rerun it. If this fails as well, rebuild the query from scratch.

As a last resort, re-connect to the warehouse by closing the program and opening it again from the Portal page.

If problems still persist, contact your system administrator or your local VT Data Consortium contact person or visit the VDC website or call or email VDC Staff listed below:

VDC website http://www.vermontdata.org VDC Office 802-224-9110

John Ferrara jferraraVDC@verizon.net

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John Forguites jforguites@vdcmembers.org

Brucie Donahue, DonahueB@WSSU.org (for training issues or scheduling)

Chapter

3

Editing Non-Enumerated Text Coordinates

Objectives

When you complete this chapter, you will be able to:

- Edit non-enumerated text coordinates for your queries in VT EDW
- Search for specific text coordinates
- Remove existing text coordinates
- Isolate text coordinates within a query
- Change the number of text coordinates that will display in your queries

Overview

When editing coordinates, it is necessary to recognize whether or not an attribute is enumerated or non-enumerated as discussed in the Basic training manual. Each attribute type allows you to Edit Coordinates, but with different options for each.

You've already looked at enumerated coordinates during the Basic class. Editing these coordinates involved filtering and combining existing coordinates. Editing non-enumerated text coordinates allows you to search for and select specific coordinates to use in your queries, such as individual student or teacher names.

Editing Coordinates for Non-Enumerated Attributes

As stated during the Basic class and in the training manual, there are a few reasons why attributes are non-enumerated.

- The possible values – or members – are always changing or have infinite possibilities, like Student Name.
- The values are finite, but the number of possible members is too many to list – as in a Percentile Rank with 99 possible members.

There are many reasons for isolating a member of a non-enumerated text attribute within a query. For example, if you want to look at a particular teacher or student, it would be necessary to Edit Coordinates and search for the desired Educator Name or Student Name.

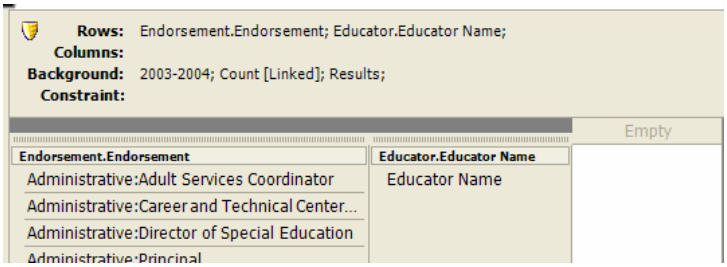
Searching for Text Attributes

The VT EDW provides a search option for all non-enumerated text attributes. Editing non-enumerated attributes has limited application in the VT EDW because there is no connection between educator and student data until the local data warehouses are built. For instructional purposes, consider the following example:

"Create a query showing how many teachers with a given surname teach in your district and what endorsements they had in 2003-2004." Choose a name which you know exists in your school or district, preferably with multiple entries.

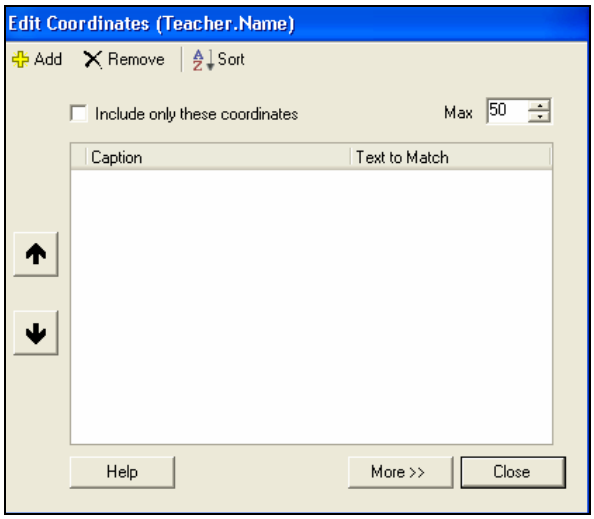
To create this query efficiently, edit the coordinates to make the query more manageable.

1) In the Measures window, select a Count of Educator Endorsement.
2) Select 2003-2004 as the time period.
3) From the Objects Panel, go to the Educator section of the Object panel and drag Endorsement to the rows.
4) Also in the Rows, add Educator Name.
5) Do Not Run the query.

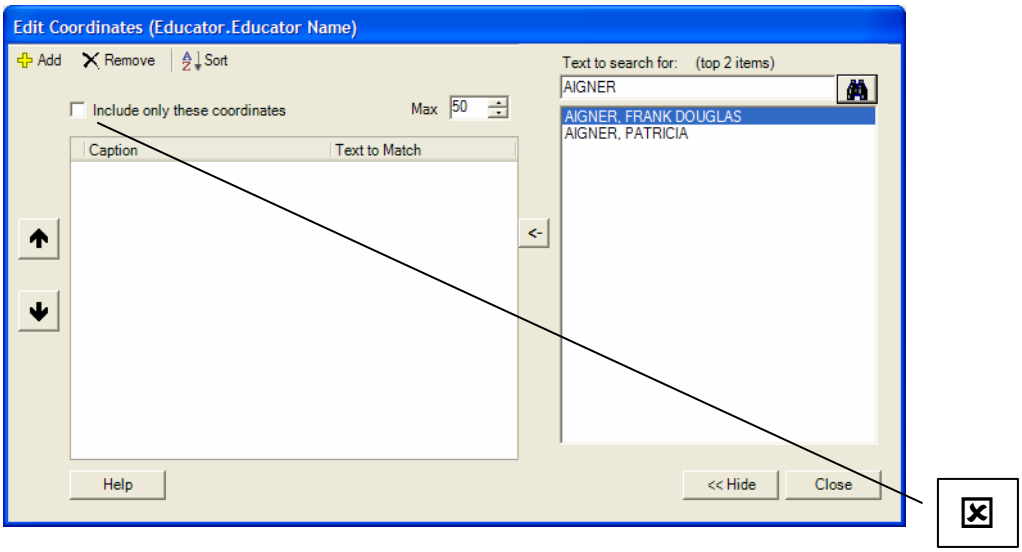


Now continue working with the query created above to limit the data returned to show only the surname you chose.

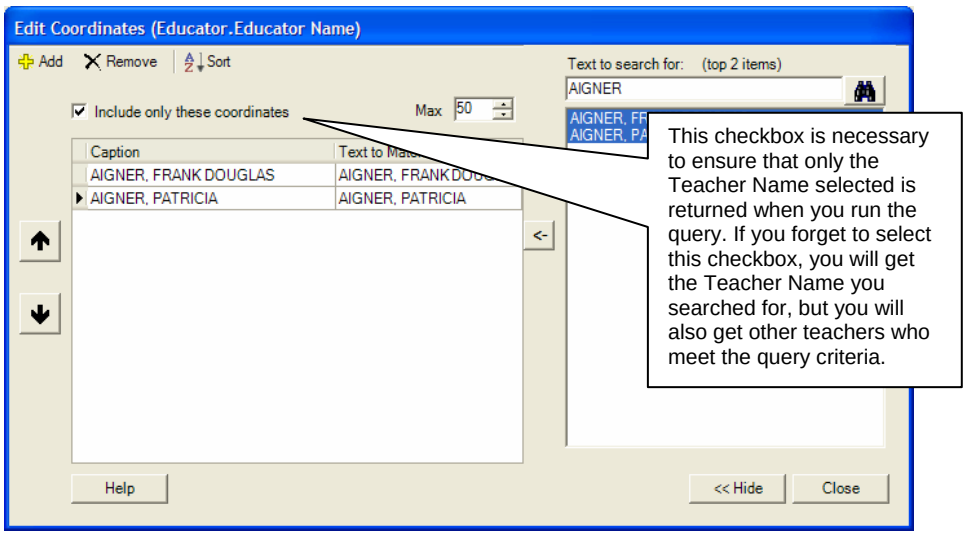
1) Double-click on the Educator Name coordinate to access the Edit Coordinates window
   a. Note: You can also access the Edit Coordinates window by right-clicking on the Educator Name coordinate and selecting the Edit Coordinates option from the menu that displays).



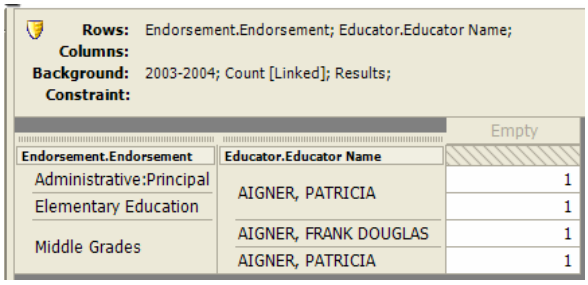
2) Click the More>> button to expand the window and access the search functionality.
3) In the *Text to search for:* field, type in the teacher's last name – in this example ***AIGNER***. NOTE: In order to get results for this search Educator name must be entered in ALL CAPS.
4) Click the Search icon  . Any items that match the text you entered will display in the field below.
    a. Note: the search functionality allows searches on both full and partial text.



5) Shift-select the records for all of the results and click the arrow between the two panels to move the names to the left portion of the window. **Make sure that you check the 'Include only these coordinates' checkbox**.



6) Click Close and run the query. NOTE: The gold shield on this query indicates that security has been applied. Users will see only Educators in the schools and districts to which they have access. *Permission was obtained to publish these Educator names in this manual*



Remember that any non-enumerated text coordinate (Attributes such as Student Name, Course Name, Educator ID, etc.) will have these same search features.

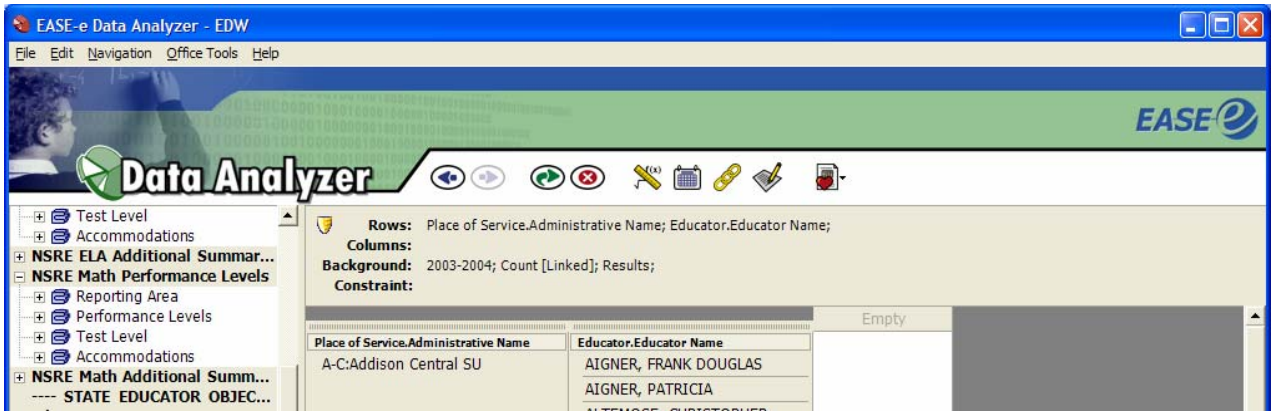
Removing Text Coordinates from your Query

Just as you can remove an enumerated coordinate from your query after it has been run (e.g., a specific grade level that isn't necessary), you can also remove unneeded non-enumerated text coordinates as well. For example, we could recreate the query from above by removing "extra" text coordinates instead of searching for the specific coordinate of AIGNER.

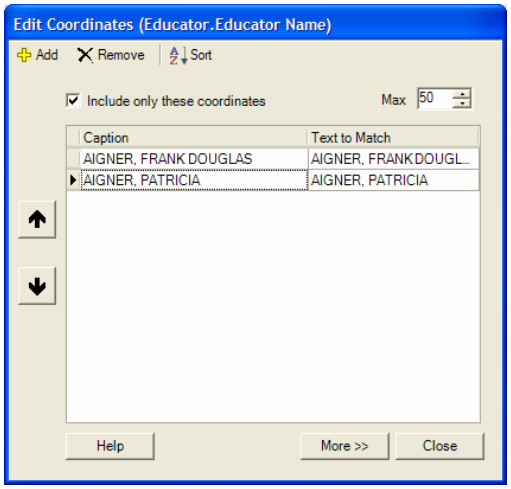
Recreate the query from above, but this time, add Teacher Name in as part of the original query:

"Create a query showing Roles in which specific Educators in your District worked in 2003-2004."

1) In the Measures window, select a Count of Place of Service.
2) Select 2003-2004 as the time period.
3) From the Objects Panel, go to State Educator Objects section and drag and drop your District from the Place of Service – Administrative Name into the Rows.
4) In the Rows, also add Place of Service - Educator Role and Educator - Educator Name.
5) Run the query.



6) You can see names for each Educator in 2003-2004 listed, but we only want to see Doug and Patricia Aigner. (Choose names specific to *your* district)
7) Double-click on the Teacher Name coordinates to open the Edit Coordinates window.



8) Notice that since we have already run the query, the teacher names that match our query parameters are displayed in the window. Select all of the names *except* Doug and Patricia Aigner and click Remove.
    a. Note: Remember, to select multiple coordinates, hold down the Ctrl key as you select them or click the first name and hold the Shift key to select consecutive names.
9) Check the 'Include only these coordinates' checkbox and click Close.
10) Rerun the query. Only results for your selected names display.

Isolating Text Coordinates

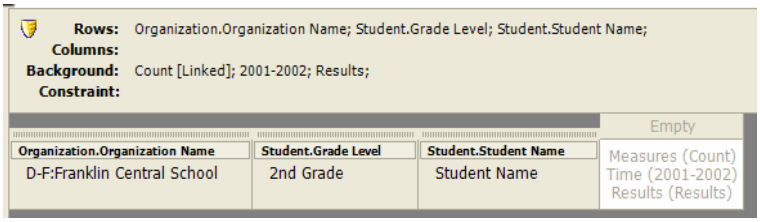
There may be times when you need to isolate a group of your text coordinates. For example, you may want to create a custom group from students in a grade level so you can look at assessment scores in other years.

We will create the following query.

Create a group consisting of the 2nd grade students of one of your elementary schools in 2001-2002.

We may want to isolate these particular students so that we can then perform further data analysis on how this group has performed over time.

1) Select a measure of Count of Student.
2) Select the 2001-2002 time period.
3) From the Objects Panel, Organization – Organization Name drag and drop *One of your Elementary Schools* into the Rows.
4) In the Student Object select OCT 1 Grade Level - Grade 2 and drag and drop into the Rows.
5) In the Student Object select Student Name and drag and drop into the Rows.
6) Run the query.



7) We now need to isolate the students who are in this class. To create a "group" that will represent the students who are represented in our two results cells, we need to include the Student Name attribute and rerun the query.

8) Now that we have all of the student names displayed, double-click in the Student Name coordinate and check the 'Include only these coordinates' checkbox. **As long as this Student Name attribute remains part of the query and isn't modified, any query you run will only return results associated with this group of students.** Leave this query displayed to use in the next example.

If you have more than 500 student names to display, you will need to change the default maximum number of coordinates to return. In the Edit Coordinates window for Student Name, change the Max field 

so that it reflects the number of students you need to display in your query. This is true for any non-enumerated coordinate.

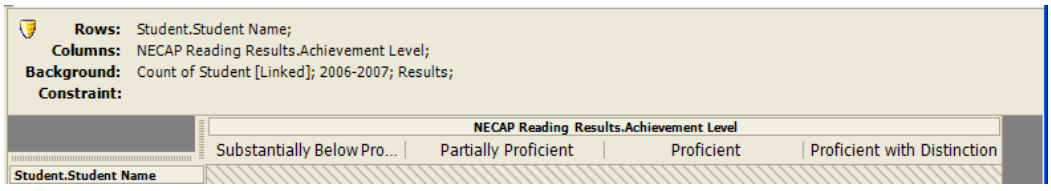
Working with Isolated Text Coordinates

Now that we have a group of students locked in as a custom group, we can create new queries that look at any type of information on these students for any year in the warehouse. For example, we may want to see how this specific group of students performed in the NECAP Reading in 2006-2007.

1) Using the query you built in the previous exercise, remove all of the query parameters *except* the Student Name attribute. Remember, as long as this attribute isn't modified, the specific students from the two sections of Probability and Statistics will be the only students used for any query we run.
2) Open the Measures window. Leave the current Measure as displayed

When you want to look at assessment scores for individual students, you can use several different measures to get scores displayed in your results area. Maximum, Minimum, and Mean will all work. Since the query will display the Max, Min or Mean for each coordinate, if you have student names listed, it will display each student's ONE unique score. In cases where students may have multiple scores for a single assessment during a school year (i.e., SAT), the test Object will have Administrations that can be used to narrow the scores down to one instance.

a. Select NECAP Reading – Achievement Level from the Object Panel and Drag and Drop to the Columns.
b. Select the 2006-2007 time period.
c. Run the query.
d. Your results show the NECAP Reading Performance Levels for each student in the grade level you selected from 2001-2002.
e. Remember, these are performance levels for only the students we isolated in the previous query.



Exercises

1. What are the 2 types of non-enumerated members?

2. When you select or add specific members of a non-enumerated attribute on the Edit Coordinates window, what must you remember to do to ensure that only those coordinates display on your query's results?

3. Create a query showing the NECAP Math Achievement Levels for 2006-2007 for Grade 2 students in one of your elementary schools in 2001-2002 whose last names begin with A – D. (*This example could correspond to finding and selecting students who were in a special math enrichment program*)

4. Were there any teachers with the name Smith teaching in your Organization in both 2002-2003 and 2003-2004? (Remember to use ALL CAPS to search for a name)

5. How many students at your largest elementary school in grade 4 scored Proficient with Distinction in the NECAP Reading in 2005-2006? Show the individual Scaled Scores of those students in NECAP Writing in 2006-2007.

Longitudinal Analysis

Objectives

When you complete the next three chapters, you will be able to:

- Create custom groups based on an individual cell result for a specific time period.
- Create queries that track the progress of a student or group who meet certain criteria in one time period and/or over time

Overview

Most important for following individual student progress, VT EDW gives educators the ability to look at student achievement longitudinally. In the following chapters, we will look at three distinct types of Longitudinal Analysis:

- ✓ Time Set Constraints
- ✓ Matching Over Time
- ✓ Time Set Limits

Each of these offers different types of results, including comparing the performance of large groups of students, as well as groups of the exact same students. With Longitudinal Analysis, it is simple to monitor the progress of the same students within a district or school over time. The steps for creating these types of queries are the same as for the queries you have already worked with, but include the addition of a few steps.

Chapter

4

Time Set Constraints

Time Set Constraints allow you to create custom groups based on an individual cell result for a specific time period. For example, if you created a query that displayed how many students were in the Below Proficient as 7th graders in 2005-2006 in the NECAP Reading, you could create a Time Set constraint based on those results which would let you look at data for this group of students over time. You could track how they performed on the same test as 8th graders in 2006-2007 or in different assessments such as NECAP Math.

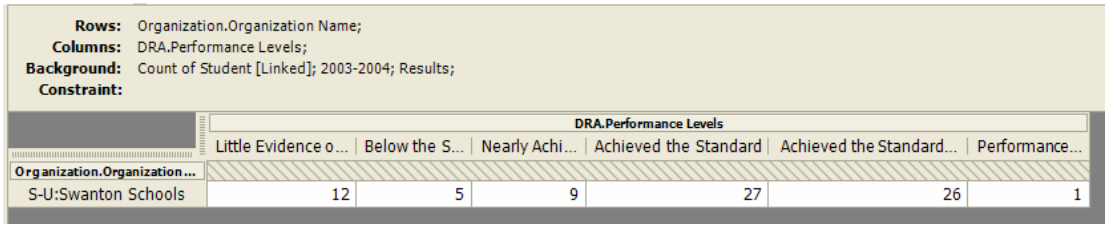
Time Set Constraints allows you to look at students over time; however, students must meet only your specified criteria in just one time period rather than multiple time periods. Because of this, when you look at data for a group constrained by a Time Set, you will rarely get the same number of students in the subsequent query. Time Set Constraints can be used in any query to isolate and display the values of any cell's Objects across time.

Let's look at the following example:

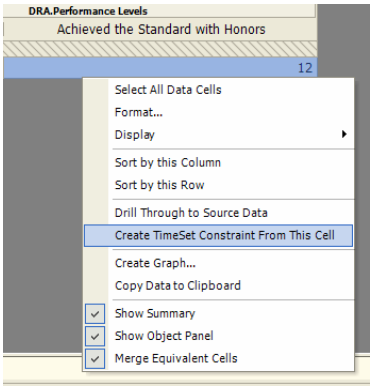
> You have identified a group of students who did well on the DRA. Now you'd like to see how those students did on the NECAP Reading in 4th grade two years later. We need to constrain this specific group of students based on the DRA query and modify the query to see how they performed in the NECAP.

1) For the measure, select a Count of Students.
2) Select 2003-2004 for the time period.
3) From the Organization Name add an Elementary School from your district on the Rows
4) Add DRA Performance Levels to the Columns.

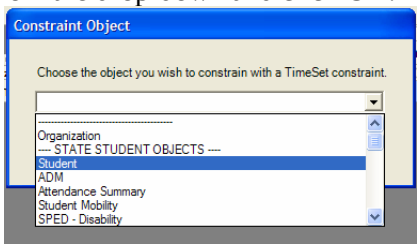
5) Run the query.

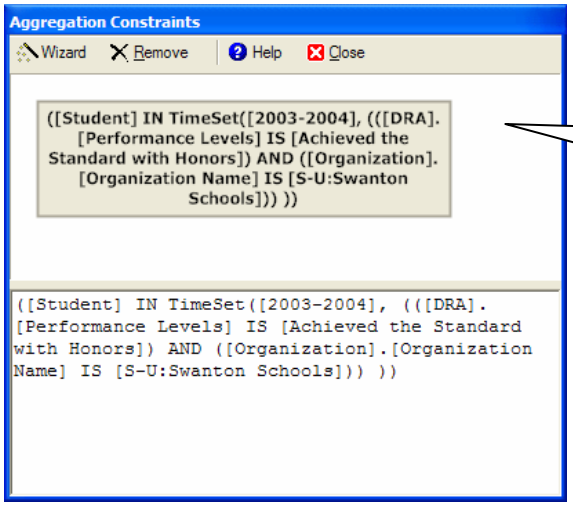


6) Right-click on the Achieved the Standard with Honors results cell and select Create Time Set Constraint From This Cell.



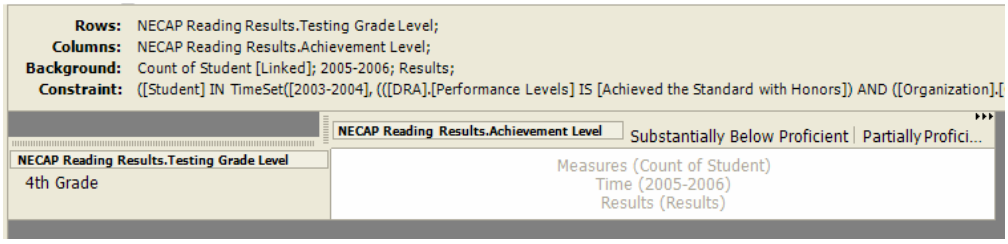
7) Select Student from the drop-down and click OK.





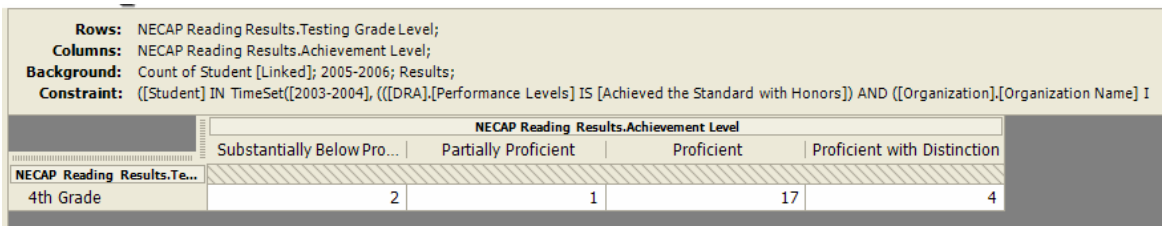
As long as this constraint stays attached to the query, future queries will give results based on the original group of 2nd grade students in the Achieved with Honors DRA result.

8) Close the Aggregation Constraints window.
9) Drag off the DRA Performance Level coordinate.
10) We now want to look at how these students performed in the NECAP Reading two years later. Drag the NECAP Reading Achievement Levels to the Columns and NECAP Reading Testing Grade Level – 4th Grade to the Rows



11) In the Time Periods window uncheck 2003-2004 and then check 2005-2006.

12) Run the query and view the results.



In the example we see that of the 26 students who Achieved the Standard with Honors in the DRA, 24 had results in the NECAP Reading 4th Grade in 2005-2006.

Exercises

1. Create a query showing the number of students who consistently attended an elementary school in your district from 1st grade to 6th grade, if they started 1st grade during the 2000-2001 academic year.

2. Create a query showing a cohort analysis for the NECAP Math, Proficient with Distinction Achievement Level for students in Grade 7 during 2005-2006 and their NECAP Math in Grade 8 in 2006-2007.

3. How many students in your supervisory union who were in the Proficient with Distinction Achievement Level in NECAP Reading in Grade 4 in 2005-2006 also achieved Proficient with Distinction in NECAP Writing in Grade 5 in 2006-2007?

4. How many 4th grade students were Below the Standard in the NSRE Math Problem Solving in your county in 2003-2004? Apply a Time Set Constraint on these students to see how they performed on the NECAP Math 2 years later as 6th graders.

Chapter

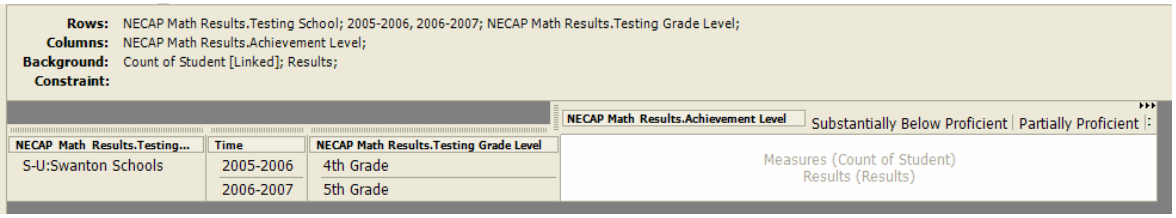
5

Matching Over Time

While Matching allows you to look at students over time, it differs from Time Set Constraints in that instead of students meeting your specified criteria in just one time period, you can look at students over multiple time periods. Because of this, when you look at data for a group constrained by Matching Over Time, you will always get the **same** number of students when looking at multiple years of data.

For our sample query, we'll create a query that displays NECAP Math results for a matched cohort meeting the following criteria: 4th graders in 2005-2006 and 5th graders in 2006-2007 who took that test in each year. Creating a query that focuses in on only those students who were in the district *and* who took the test in those years allows us to get an "apples to apples" comparison.

1) Select a measure of a Count of Students. (Now the Default)
2) Select 2005-2006 and 2006-2007 for the time periods and place on the **Rows**.
3) Add NECAP Math Testing School – choose an elementary school in your supervisory union - to the Rows to the left of the Time Sets
4) Crtl-Click or Shift-Click on NECAP Math Testing Grade Levels – Grades 4 and 15 and drag them to the Rows to the Right of the Time Sets
5) Drag and drop NECAP Math Achievement Levels to the Columns.



When creating a Match Over Time query, all of the criteria you are using to define your matched group (i.e. the students must be in specific grades in specific years) must be placed on the same axis as your time periods. The coordinates placed beside the time periods will be used to create the coordinates available for selection in the Matching Wizard.

Run the query.

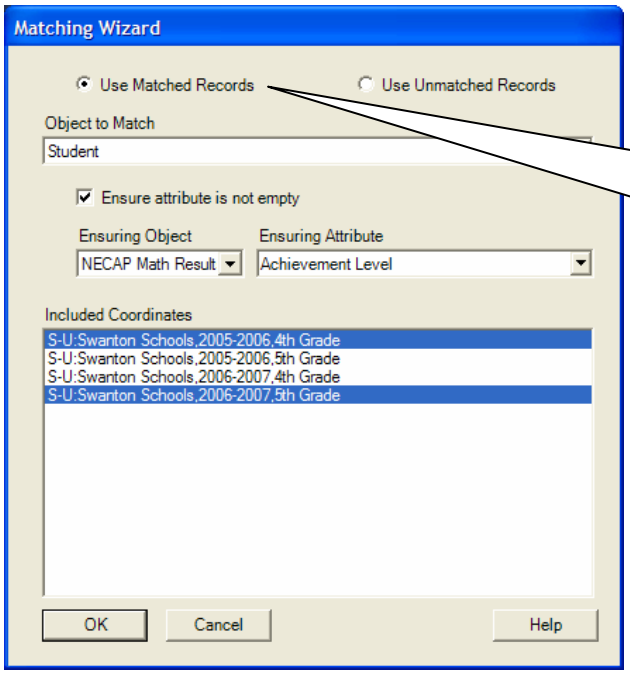
When performing a match over time, you must create a "base" query to work with initially. From this point, we will apply additional constraints so that we're only looking at the 2005-2006 4th graders and the 2006-2007 5th graders.

Rows: NECAP Math Results.Testing School; 2005-2006, 2006-2007; NECAP Math Results.Testing Grade Level;
Columns: NECAP Math Results.Achievement Level;
Background: Count of Student [Linked]; Results;
Constraint:

			NECAP Math Results.Achievement Level				
NECAP Math Results.Testin...	Time	NECAP Math Results.Testin...	Substantially B...	Partially Profici...	Proficient	Proficient with D...	No Achieveme...
S-U:Swanton Schools	2005-2006	4th Grade	22	12	26	5	14
		5th Grade	26	17	27	9	6
	2006-2007	4th Grade	26	26	28	7	
		5th Grade	29	22	25	4	

6) Go to Edit | Matching Wizard.
7) The Use Matched Records radio button will be selected by default. This ensures that the final query results only show records that meet all of the criteria we select.
8) For the Object to Match, select Student. This makes sure that the student is present in each year we select.
9) For the Ensuring Object, select NECAP Math Resultsand then select Achievement Level for the Ensuring Attribute. The Ensuring Object and Attribute make sure that only those students who have a score for this test area are included in the match.

10) Highlight both 2005-2006, Grade 4, and 2006-2007, Grade 5. Remember to hold down the Ctrl key to select multiple rows.



This will default to "Use Matched Records".

Choose "Use Unmatched Records" when, for example, you want to see how a more transient population performed on a test, as this will give you all of the students who don't meet the "match" criteria.

This shows the constraint that was created in the Matching Wizard.

a. Click OK and run the query again to see results

Rows: NECAP Math Results.Testing School; 2005-2006, 2006-2007; NECAP Math Results.Testing Grade Level;
Columns: NECAP Math Results.Achievement Level;
Background: Count of Student [Linked]; Results;
Constraint: MATCH [Student] ON (([2005-2006], (([NECAP Math Results].[Testing School] IS [S-U:Swanton Schools]) AND ([NECAP Math Results].[Testing Grade Level] IS [4th Grade]))),

			NECAP Math Results.Achievement Level				
NECAP Math Results....	Time	NECAP Math Results.Testin...	Substantially Belo...	Partially Proficient	Proficient	Proficient with Di...	No Achievement...
S-U:Swanton Sch...	2005-2006	4th Grade	20	11	26	4	10
	2006-2007	5th Grade	25	19	23	4	

11) Right-click on the **Column** Coordinate and select the Include 'All' Coordinate option. Rerun the query. Notice the total for each Row is exactly the same.

Rows: NECAP Math Results.Testing School; 2005-2006, 2006-2007; NECAP Math Results.Testing Grade Level;
Columns: NECAP Math Results.Achievement Level;
Background: Count of Student [Linked]; Results;
Constraint: MATCH [Student] ON (([2005-2006], (([NECAP Math Results].[Testing School] IS [S-U:Swanton Schools]) AND ([NECAP Math Results].[Testing Grade Level] IS [4th Grade]))

			NECAP Math Results.Achievement Level					
NECAP Math Results...	Time	NECAP Math Res...	Substantially Bel...	Partially Proficient	Proficient	Proficient with Di...	No Achieveme...	All
S-U:Swanton Sc...	2005-2006	4th Grade	20	11	26	4	10	71
	2006-2007	5th Grade	25	19	23	4		71

It's a good idea to use the All coordinate when looking at matched query results. Because the query only looks at students who meet *all* selected criteria, the number of students will always remain constant over years and you will always have the same totals in the All column.

Exercises

1. You must create and run a query before you can use the Matching Wizard.
    a. True
    b. False

2. Which following scenario is one in which you would need to use an Ensuring Attribute?
    a. You want to show cohort analysis for a specific test area.
    b. You want to look at a student's specific, individual scores over time.
    c. You need to track students who are consistently in your school system over the years.

3. Where can you view the code that is created when you use the Matching Wizard?
    a. The query summary
    b. The Constraints Wizard window
    c. The Notes window
    d. It isn't accessible in VT EDW PC

4. Your Middle School has implemented an excellent program for all 7th graders to improve reading skills. Create a query comparing the matched set of students who took the 7th grade NECAP Reading in your middle school in 2005-2006 and also took the same test as 8th graders in 2006-2007. Was the Reading Program successful?

Shared > EDW Training > Advanced > Pg 23 Ex 4 Matching Over Time Starter

Chapter

6

Time Set Limits

Objectives

When you complete this chapter, you will be able to:

- Understand the Time Set Limits functionality
- Create queries that use Time Set Limits

Overview

Time Set Limits allow you to put Time Sets on both the X (row) and Y (column) axis in a single query: This feature allows users to compare data elements to each other across time sets. For example, you may want to view how students performed on the NECAP test between two years. Did students stay in the Partially Proficient level for both years or did they perform Partially Proficient in one year, but move up to Proficient the next year?

You can also use the Time Set Limits to compare two different tests that students may take over the years. For example, you may want to compare how students performed on the DRA Test as 2nd graders versus how they performed on a NECAP Reading test the next year as 3rd graders. This could help you answer questions such as whether performance on the 2nd grade test predicts how the students will perform on the NECAP. This query may also give you an idea whether the two tests measure the same types of skills.

This type of Longitudinal Analysis will certainly be very useful for measuring progress in the NECAP tests over multiple years.

Creating Queries with Time Set Limits

A single basic query could look at NECAP Reading Skills for 2 different years, but yields no information about which students were included in which results or whether specific groups of students remained in their achievement levels or went up or down from the first to the second test. If we created this query without using Time Set Limits, we would get the results below.

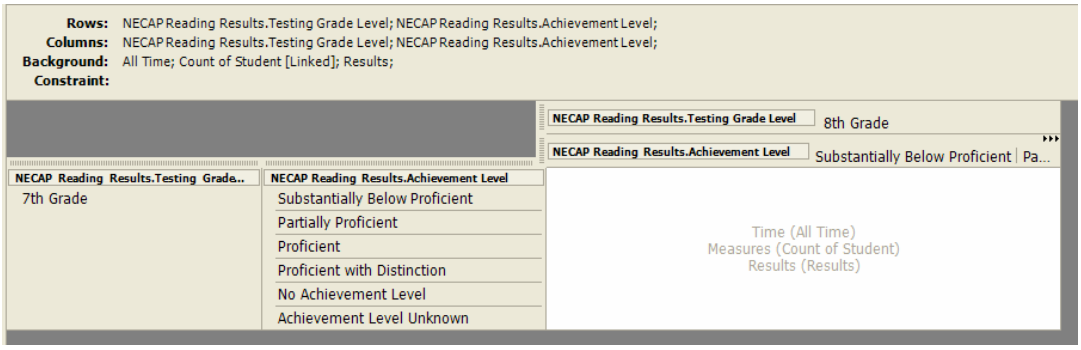
Rows: NECAP Reading Results.Achievement Level;
Columns: NECAP Reading Results.Testing Grade Level; 2005-2006, 2006-2007;
Background: Count of Student [Linked]; Results;
Constraint:

	NECAP Reading Results.Testing Grade Level			
	7th Grade		8th Grade	
	Time			
NECAP Reading Results.Ac...	2005-2006	2006-2007	2005-2006	2006-2007
Substantially Below P...	696	678	737	814
Partially Proficient	1,676	1,674	1,827	1,684
Proficient	3,836	3,805	3,822	3,803
Proficient with Distinc...	706	913	920	860
No Achievement Level	391	35	446	34

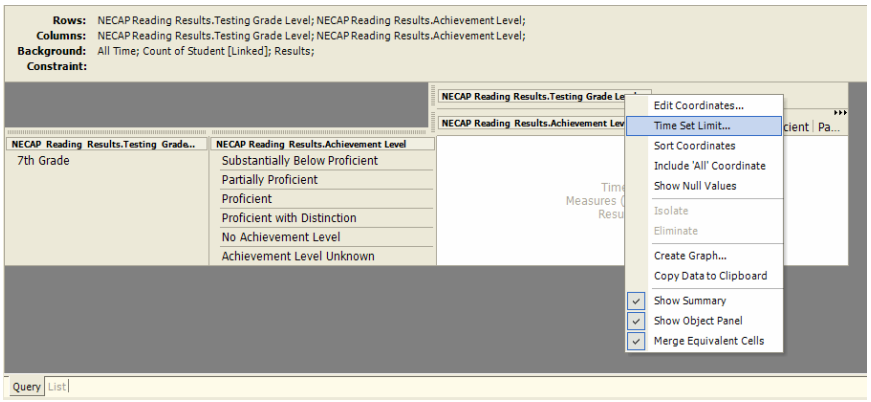
While this does show us how the state as a whole performed on the test between the two years, it doesn't show us specific student movement from level to level between the two years. In order to view that information, we'll create the query a different way and use Time Set Limits.

1) Select a Measure of Count of Student.
2) **Do not select a time period** – these will be added to the individual coordinates of the query.
3) From the Objects Panel, drag and drop NECAP, Reading Achievement Levels into the Columns.
4) Also Drag and Drop the NECAP Reading, Testing Grade Level, 8th Grade into the Columns
5) From the Objects Panel, drag and drop NECAP, Reading Achievement Level into the rows.
6) Also Drag and Drop the NECAP Reading, Testing Grade Level, 7th Grade into the Rows

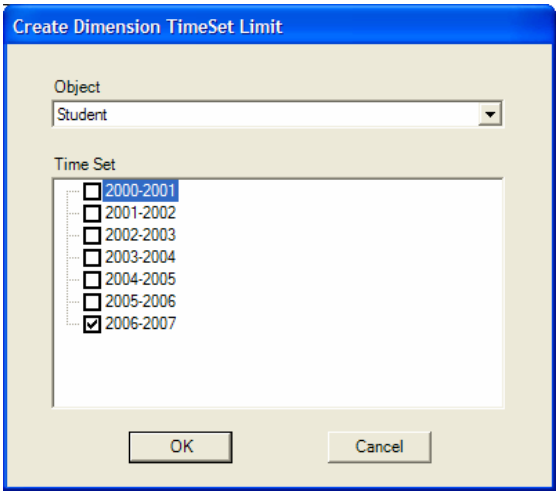
Rows: NECAP Reading Results.Testing Grade Level; NECAP Reading Results.Achievement Level;
Columns: NECAP Reading Results.Testing Grade Level; NECAP Reading Results.Achievement Level;
Background: All Time; Count of Student [Linked]; Results;
Constraint:



7) Right-click in the NECAP Reading Testing Grade Level 8th Grade and select Time Set Limit...



Select Student from the Object drop-down list and select 2006-2007 as the time set to apply to this coordinate.



8) Click OK.
9) Repeat this process for the other Column Attribute NECAP Reading Achievement Level
10) Right-click in the rows and select Time Set Limit for EACH Coordinate on the Rows
11) Select Student from the Object drop-down list and select 2005-2006 as the time set to apply to these Coordinates.
12) Click OK.
13) Run the query and view the results.

This query applies specific time sets to each Achievement Level Students ON the highlighted diagonal stayed the same from one year to the next. Students above the diagonal went UP and students below it went DOWN Student with No Achievement Level in 2005-06 had results in each Achievement Level in 2006

Rows: NECAP Reading Results.Testing Grade Level (Student:2005-2006); NECAP Reading Results.Achievement Level (Student:2005-2006);
Columns: NECAP Reading Results.Testing Grade Level (Student:2006-2007); NECAP Reading Results.Achievement Level (Student:2006-2007);
Background: All Time; Count of Student [Linked]; Results;
Constraint:

		NECAP Reading Results.Testing Grade Level (Student:2006-2007)				
		8th Grade				
		NECAP Reading Results.Achievement Level (Student:2006-2007)				
NECAP Reading...	NECAP Reading Results.Ac...	Substantially Below Pro...	Partially Proficient	Proficient	Proficient with Distinction	No Achievement Level
7th Grade	Substantially Below P...	330	264	33		2
	Partially Proficient	172	822	603	7	
	Proficient	33	470	2,735	429	
	Proficient with Distinc...		1	278	397	
	No Achievement Level	216	48	16	1	26

Exercises

1. Why would you want to use a Time Set Limit in your query instead of selecting your time sets from the Time Period window in the toolbar?

2. Is there a relationship between how students do on the NECAP Reading test in 4th and 7th grades and how they do on the NECAP writing test in grades 5 and 8? Construct a Time Set Limit query to examine each of these pairs of tests. What results would indicate a relationship?

3. As a follow-up question to Exercise 2, is there also a relationship between the Reading and Writing NECAP results for the same testing grades and years? Would you use a Time Set Limit to answer this question?

Shared > EDW Training > Advanced > Pg 28 Ex 2 Time Set Limit Starter

Chapter

7

Creating Thresholds and Distributions

Objectives

When you complete this chapter, you will be able to:

- Create distributions and thresholds
- Create queries that contain more than one distribution or threshold

Overview

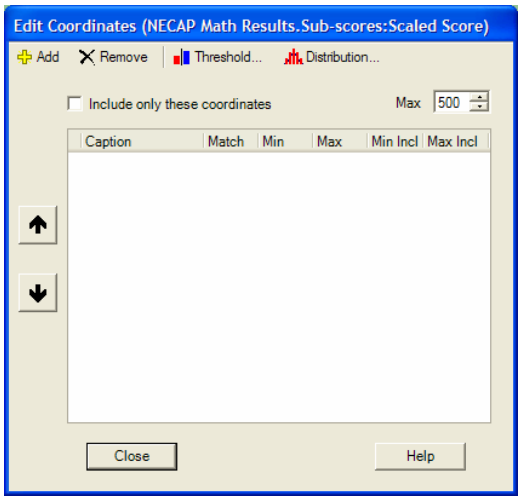
When working with non-enumerated numeric attributes such as percentile ranks or scale scores, you will often want to create distributions and/or thresholds to look at the available data. Creating distributions and thresholds allow you to view information such as test scores, student days absent, and teacher years of experience broken down into small, manageable groups. For example, if I want to see my school's NECAP, Math scores, I may not want to see each individual score for all 500 students who took the test. Instead, I may want to see a summary of the scores for my school i.e. how many students in Grade 4 scored between the 435 and 445 or how many scored above the 440 Proficient Level. This gives me a high level look at how my school preformed as a whole.

Basically, distributions and thresholds are a combination of grouping and counting. Custom groups are created using the Edit Coordinates feature and by using a Measure type of Count, we get the number of records in each of these custom groups.

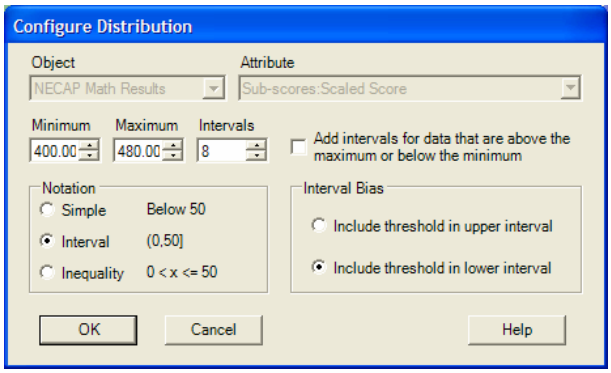
Creating Distributions with Numeric Attributes

For our sample query, we'll be creating a distribution of the NECAP, Math, Scaled Scores. The NECAP Scaled Scores range between X00 and X80 with X being the grade level of the test, i.e. Grade 4 would be between 400 and 480. We'll look at this data for your County for 2006-2007.

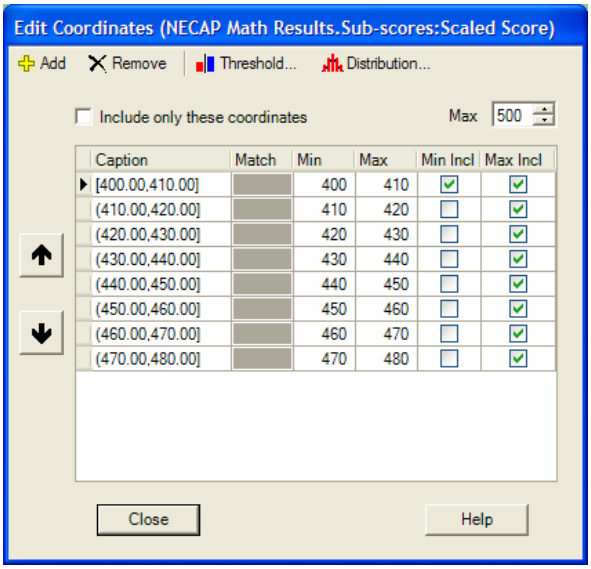
1) Select a Measure of Count of Students.
2) Select 2006-2007 as the time period.
3) Add NECAP Math Results, Testing Grade Level, Grade 4 to the Rows
4) From the Objects Panel, drag and drop Organization – County – *your County* to the Rows.
5) From the Objects Panel, drag and drop NECAP Math Results, Sub-Scores, Scaled Score into the Rows.
6) Double-click on the Scaled Score coordinate to open the Edit Coordinates window.



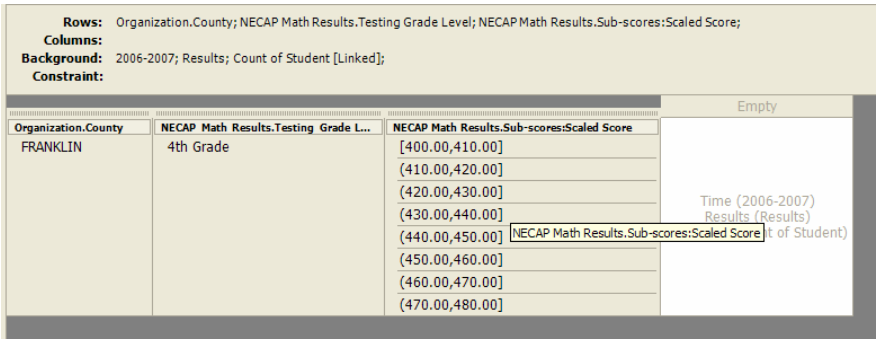
7) Click the Distribution button at the top right of the window to open the Configure Distribution window.



8) In the Intervals field, enter 8. This will create the 8, 10 point groups we want the scores broken into. We can enter 400 for the Minimum and 480 for the Maximum since our score range is 80 points.
9) Click OK to return to the Edit Coordinates window. Your newly created groups display as coordinates for your query.



10) Check the Include only these coordinates checkbox and click Close.
11) Run the query.



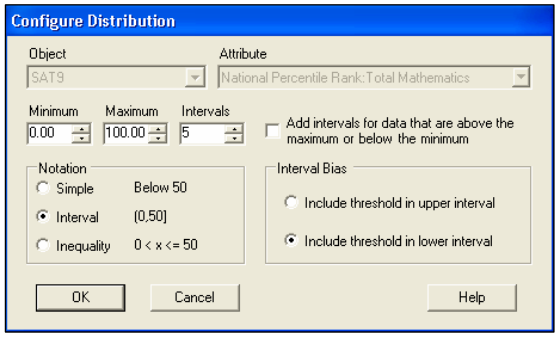
12) Save this query as a personal favorite named "Math Distribution." It will be used in a future exercise.

Note that if a grouping has no records, the group will drop out of the final query results.

More Information About Creating Distributions

In the sample query created above, just a simple change was made to the default selections in the Configure Distribution window. While the defaults worked fine for the query above, that may not always be the case. The explanations of the fields in the Configure Distribution window are detailed below.

- **Object and Attribute:** These are automatically filled in based on the Attribute added to the Row or Column.



- **Minimum:** This is the lowest value in the attribute's numeric range that you want included in the groups you're creating. Note that this is not always the minimum number in the available range. For example, you may want to create a distribution that looks only at those students who scored above the 50th percentile. In this case, your minimum would be 50, not the minimum possible score of 1.

- **Maximum:** This is the maximum value in the attribute's numeric range that you want included in the groups you're creating. Note that this is not always the maximum number in the available range. For example, you may want to create a distribution that looks only at those students who scored below the 50th percentile. In this case, your maximum would be 50, not the maximum possible score of 99.

- **Intervals:** The number of groups you want to create. For example, if you want to see a break-down of your NPR scores into quartiles (4 groups); enter 4 as the number of intervals.

- **Add intervals for data that are above the maximum or below the minimum:** If this checkbox is selected, two additional groups will be created for your distribution. These two groups will count any records that fall outside of the minimum and maximum values that you specified. If no records fall outside of the provided range, the two additional groups drop out of the final query.

- **Notation:** This area allows you to select the format of the text to be used for the caption of each coordinate. The resulting displays are shown below.

Simple	Interval	Inequality
Caption 0.00 to 25.00 25.00 to 50.00 50.00 to 75.00 75.00 to 100.00	Caption [0.00,25.00] (25.00,50.00] (50.00,75.00] (75.00,100.00]	Caption 0.00 <= x <= 25.00 25.00 < x <= 50.00 50.00 < x <= 75.00 75.00 < x <= 100.00

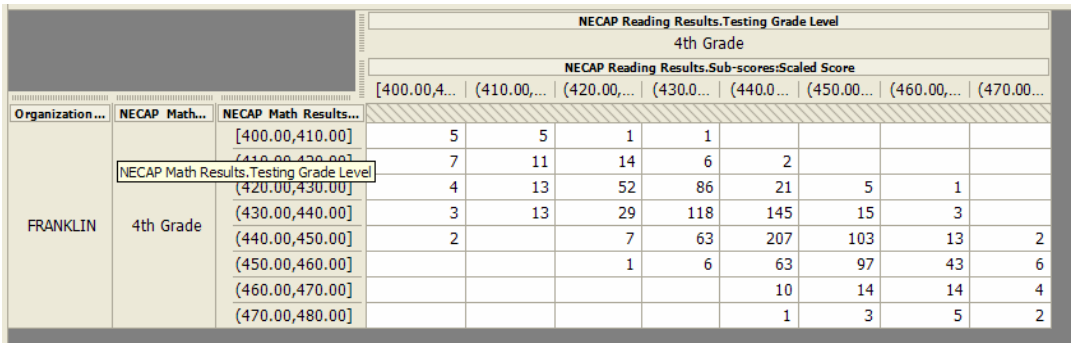
- **Interval Bias:** These two options allow you to decide where the cut score between your groups should be counted. For example, if I create a 4-group distribution for NPR scores, I will get the following coordinates: 0-25, 25-50, 50-75, and 75-100. Since you wouldn't want to count scores of 25 in both the 0-25 group and the 25-50 groups, you must specify which group should include scores of exactly 25. If you select the *upper interval* option, a score of 25 will be counted in the 25-50 group. If you select the *lower interval* option, a score of 25 will be counted in the 0-25 group.

Once you click OK and close out of the Configure Distribution window, you can customize your distribution groupings even further on the Edit Coordinates window. All of the text in the Caption column can be modified to suit your specific query needs. You can also modify the actual groupings as well. The Match column allows you to indicate a specific number – only one value – as the coordinate. The Min column represents the minimum value of the coordinate. The Max column represents the maximum value of the coordinate. These options are covered in greater detail in the "Creating Manual and Uneven Distributions" section later in this chapter.

More than One Distribution

Building on the query created above (the personal favorite named "Math Distribution"), add NECAP Reading Scaled Scores to the columns.

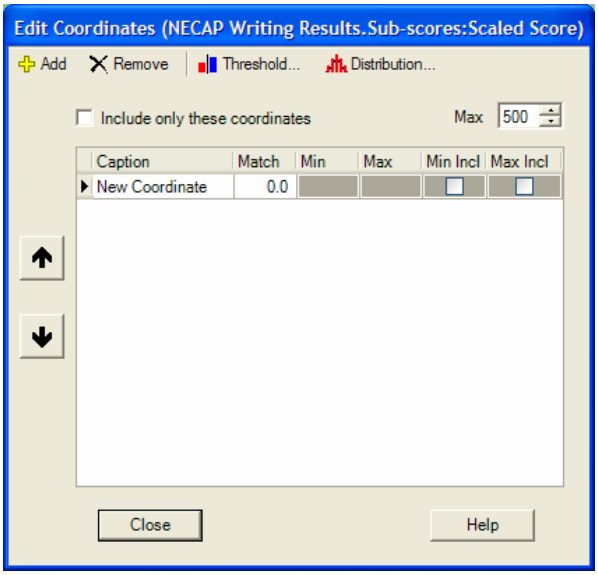
1) After adding the NECAP Reading Scaled Scores to the columns, double-click on it to Edit Coordinates and then setup the same distribution parameters as for NECAP Math Scaled Scores
2) Remember to check the 'Include Only These Coordinates' checkbox.
3) Add NECAP Reading Results, Testing Grade Level, 4th Grade to the Columns also
4) Run the query again.



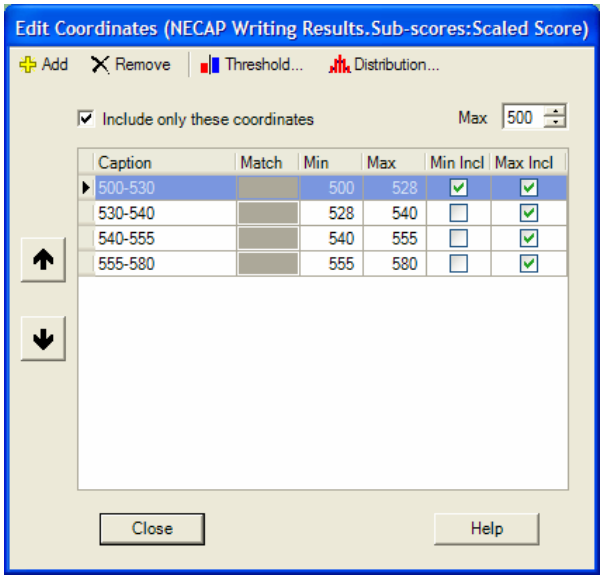
Creating Manual and Uneven Distributions

As stated above, you can edit your distribution groups from the Edit Coordinates window. When editing coordinates this way, by changing Match, Min, and Max, you can create any series of coordinates. For example, a school may use the NSRE assessment to identify 4th grade at-risk students as well as 4th grade gifted students in mathematics. The at-risk students may be identified as those who score below the 30th percentile on Percentile Rank Mathematics while gifted students are those who score above the 90th percentile. Follow the steps below to create these groups through the non-enumerated Edit Coordinates option.

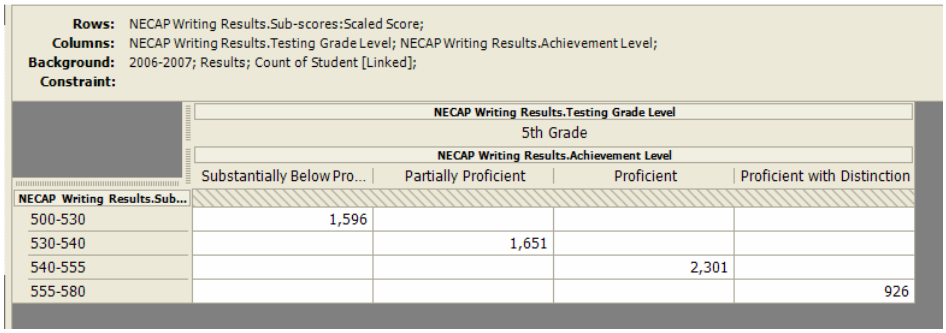
1) Select a Measure of Count of Students.
2) Select 2006-2007 as the time period.
3) Drag and drop NECAP Writing Results, Testing Grade Level, 5th Grade to the columns.
4) Drag and drop NECAP Writing Scaled Score into the Rows.
5) Double-click in the NECAP Writing Scaled Score coordinate to access the Edit Coordinates window.
6) Click Add.



7) Do not modify the Match column for this exercise.
8) In the Caption field for the new coordinate, enter 500-530
9) Set the Min field to 500, and enter 530 in the Max field.
10) Check the Min Incl and Max Incl checkboxes.
11) Click Add to add a second coordinate.
12) In the Caption field, enter 530-540
13) Enter 530 in the Min field, and enter 540 in the Max field.
14) Check the Max Incl checkbox
15) Repeat this procedure adding 540-555 and a 555-580 Coordinates.
16) Select the Include only these coordinates checkbox.
    a. Your coordinates should resemble the illustration below.



17) Click Close and run the query.



This query shows the "Cut Points" for each of the Achievement Levels for Grade 5 NECAP Writing

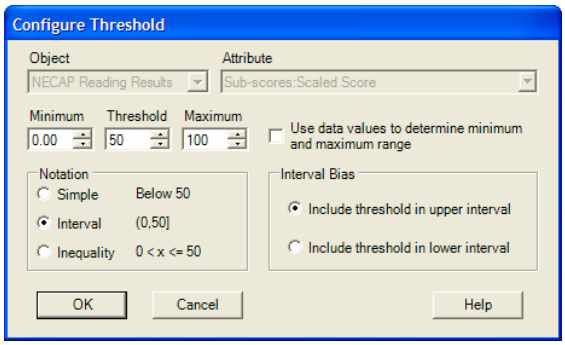
Editing Coordinates in this manner can be used for many purposes. *What are some other examples of using uneven intervals or creating coordinates manually?*

Creating Thresholds with Numeric Attributes

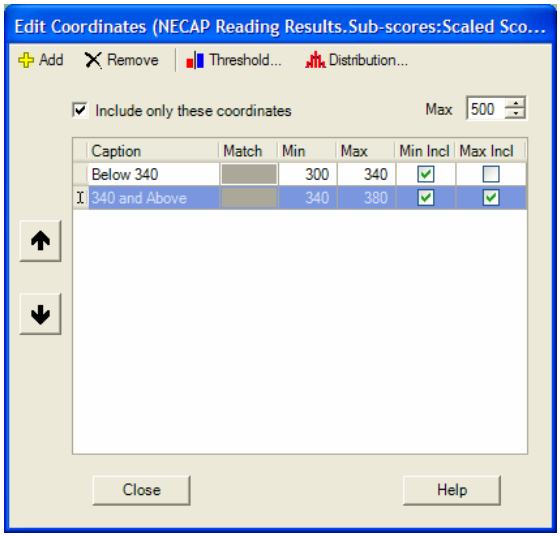
Thresholds are very similar to distributions. When you create distributions, you're creating multiple groupings from a range of numbers. With a threshold, you're basically always creating a two-group distribution. You can also think of a threshold as a cut score. For example, if 340 is the score that separates Below Proficient from Proficient students on an NECAP assessment , we could use a threshold to see how many students fell into the Below Proficient group versus how many were Proficient and above.

For our sample query, we'll create a query with a threshold of 340 for the NECAP 3rd Grade Reading in 2006-2007.

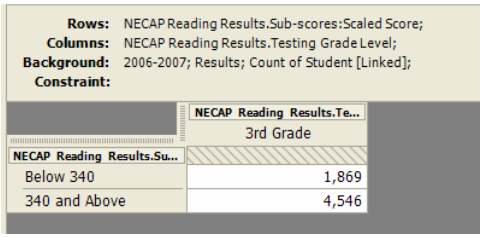
1) Select a measure of Count of Students.
2) Select 2006-2007 for the time period.
3) Drag and drop NECAP Reading, Testing Grade Level, 3rd Grade to the Columns.
4) Drag and drop NECAP Reading, Scaled Scores to the Rows.
5) Double-click on the NECAP Reading, Scaled Scores coordinate to access the Edit Coordinates window.
6) Click the Threshold button.



7) The Object and Attribute fields are automatically filled in.
8) Set the Minimum to 300 and the Maximum to 380.
9) For the threshold field, enter 340.
10) Leave the remaining fields set to their default values.
11) Click OK.



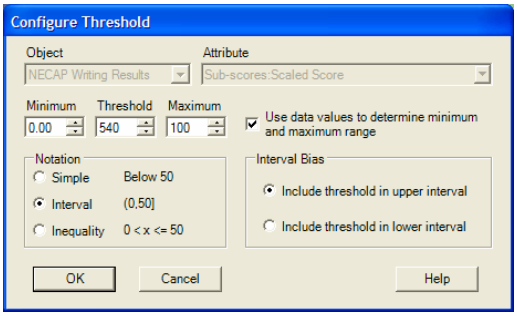
12) Modify the Captions for each coordinate with the following text: Below 340 and 340 and Above.
13) Check the Include only these coordinates checkbox and click Close.
14) Run the query.

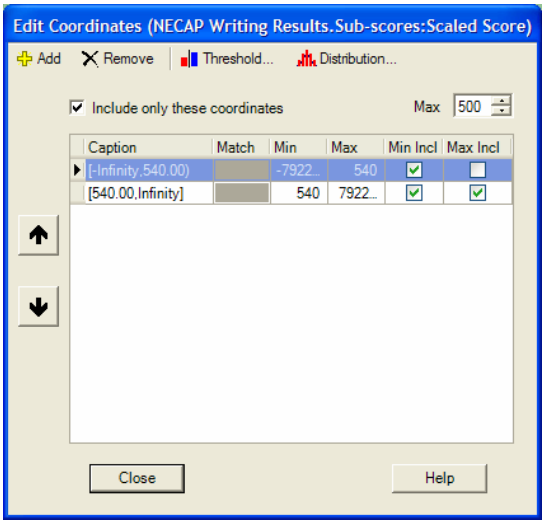


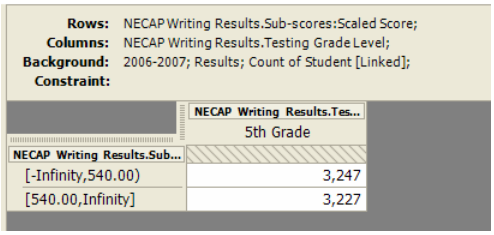
Note that the Configure Threshold window has almost the same fields as the Configure Distribution window. The Interval Bias area works the same as for the Configure Distribution window – the only difference is that for thresholds, the cut score is included in the upper interval by default.

The "Use Data Values to determine minimum and maximum range" checkbox allows you to create a threshold without knowing the full range of the scores. If you check this box, as long as you know what the cut score is, you don't have to worry about entering anything into the min and max fields. The program automatically counts all scores below the cut score and all of those above the cut score.

Example: Find the number of student above and below the cut score of 540 in the NECAP Writing for Grade 5



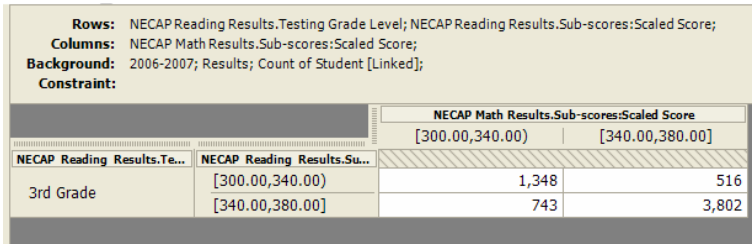




More than One Threshold

More than one threshold can be used to compare Cut Point distributions for two assessments. An example could be comparing NECAP Reading and NECAP Writing

1) Create a Threshold for NECAP 3rd Grade Reading by adding NECAP Testing Grade Level 3rd Grade and NECAP Reading Results, Scaled Score to the Rows.
2) Double-click on the Scaled Score Coordinate and create a Threshold with a Cut Score of 340
3) Add the NECAP Math Sub-scores, Scaled Score to the Columns
4) Create a similar Threshold of 340 for this Coordinate
5) Run the query
6) The results show how student who are Below Proficient in Reading tend to also be Below Proficient in Math



Rows: NECAP Reading Results.Testing Grade Level; NECAP Reading Results.Sub-scores:Scaled Score;
Columns: NECAP Math Results.Sub-scores:Scaled Score;
Background: 2006-2007; Results; Count of Student [Linked];
Constraint:

		NECAP Math Results.Sub-scores:Scaled Score	
		[300.00,340.00)	[340.00,380.00]
NECAP Reading Results.Te...	NECAP Reading Results.Su...		
3rd Grade	[300.00,340.00)	1,348	516
	[340.00,380.00]	743	3,802

Can you give some other examples of how more than one threshold could be used in a query?

Exercises

1. In your own words, describe a distribution.

2. What will a threshold show you?

3. Create a 4-group distribution of the NECAP Math Scaled Score. Use the following headings for the coordinates: Substantially Below, Below Proficient, Proficient, Proficient with Distinction for 4th grade. Include scores for 2005-2006.

4. Create a threshold of 40 for the NECAP Reading Scaled Score for 8th graders and show a count of students for a school in your supervisory union.

5. Create a query showing an 8-group distribution of NECAP Writing Grade 5 for 2006-2007 for one of your elementary schools. Keep this query on the screen and proceed to Question 6

6. Add to the Query above, another 8-group distribution of NECAP Reading for Grade 5 for 2006-2007 as a cross reference comparison. Is Reading a predictor of Writing achievement?

7. Create a query showing how many students scored within 5 points below the cut score of 340 and 5 points above the cut score on the NECAP Math for grade 3 in 2006-2007.

Appendix

A

Hierarchy Constraints

Objectives

When you complete this chapter, you will be able to:

- Use hierarchy constraints to filter queries and lists.

Overview

The Hierarchy Constraints wizard is a way to add multiple filters without editing coordinates individually.

Using Hierarchy Constraints to Filter Queries

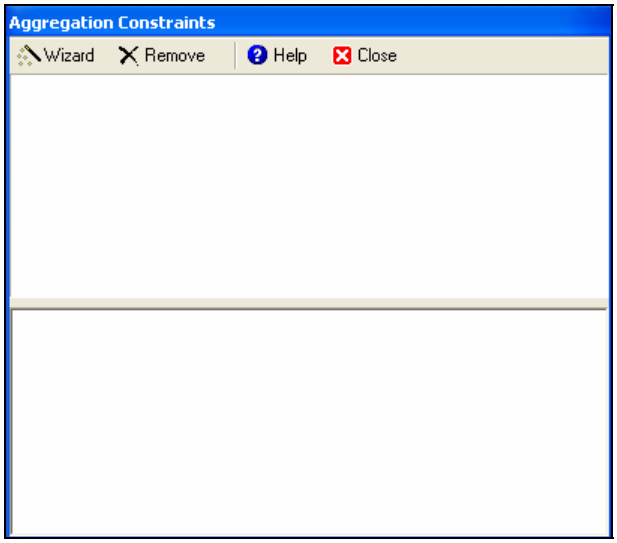
For our sample query, create a query displaying a count of Students, NECAP Reading, Achievement Levels versus NECAP, Math Achievement Levels for 7th Grade 2006-2007.

1) Select a measure of Count of Student.
2) Select 2006-2007 for the time period.
3) Drag and drop Organization – County – *your County* on the Rows
4) Drag and drop NECAP Reading, Achievement Levels to the Rows.
5) Drag and drop NECAP Math, Achievement Levels to the Columns.
6) Run the query.

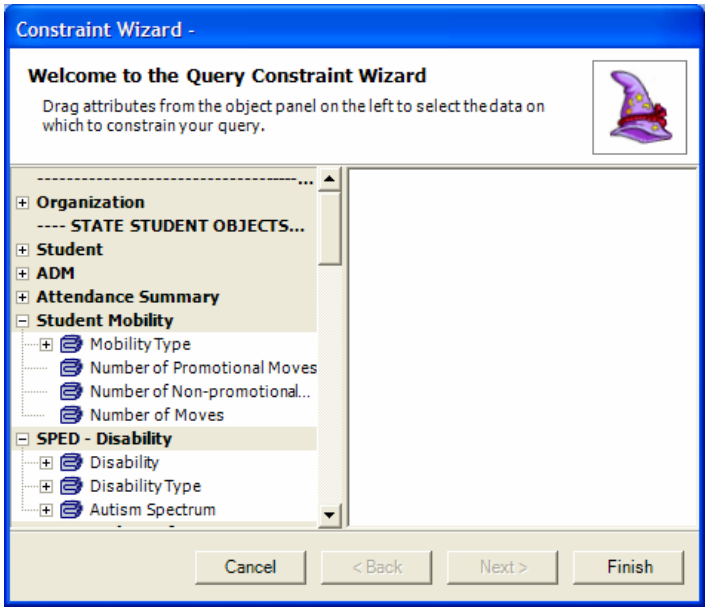
Rows: Organization.County; NECAP Reading Results.Achievement Level;
Columns: NECAP Math Results.Achievement Level;
Background: Count of Student [Linked]; 2006-2007; Results;
Constraint:

		NECAP Math Results.Achievement Level				
		Substantially Belo...	Partially Proficient	Proficient	Proficient with Distinction	No Achievement Level
Organization.County	NECAP Reading Results.Ac...					
FRANKLIN	Substantially Below P...	395	112	26	3	11
	Partially Proficient	355	311	238	2	3
	Proficient	147	451	1,130	245	3
	Proficient with Distinc...	1	10	233	232	
	No Achievement Level	14	4	1		16

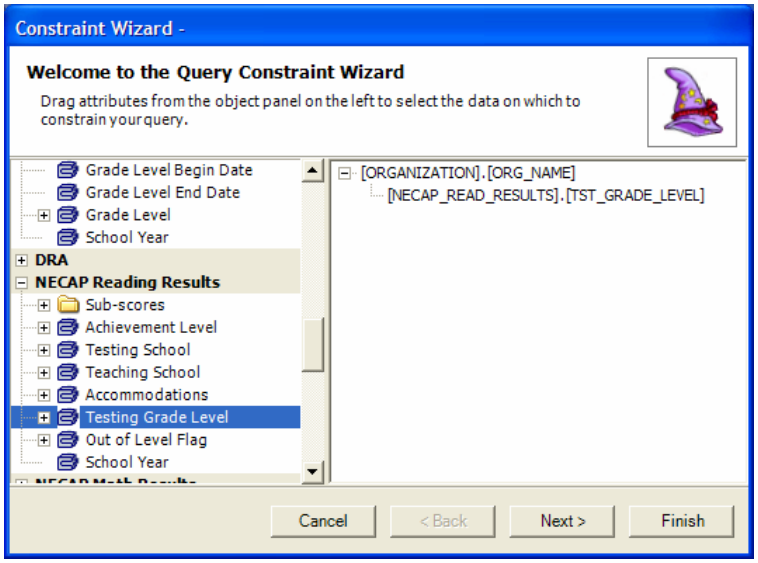
7) To apply multiple filters at one time, click the Constraints icon and click Wizard.



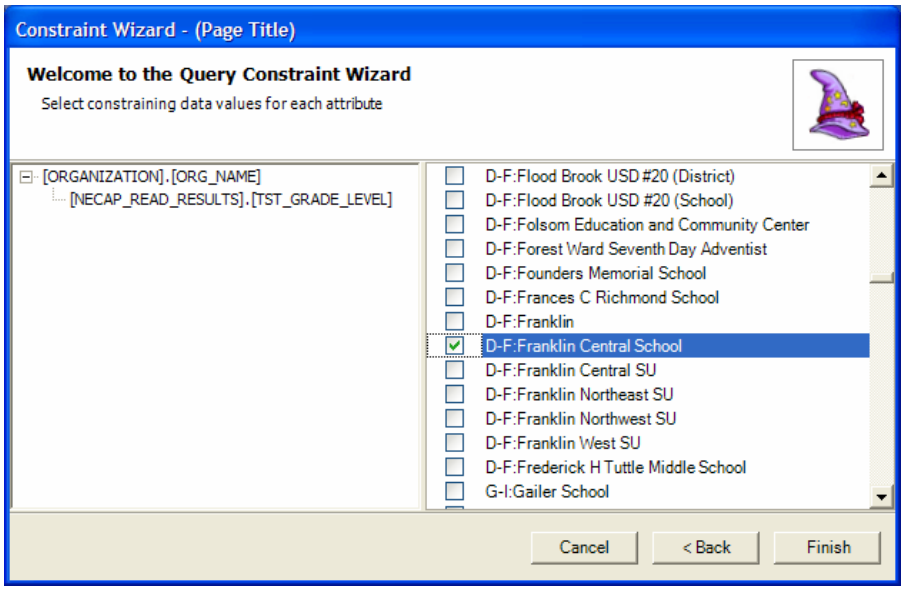
8) From the Constraint Wizard window, the query can be filtered to show only 4th grade at Franklin Elementary School.

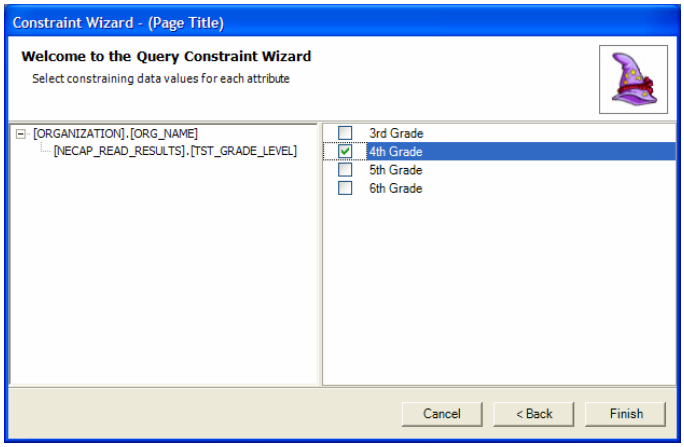


9) Open the Organization object, highlight Organization Name and drag it into the window at the right.
10) Open the NECAP Readingt object, highlight Testing Grade Level and drag it into the right-hand window also. The order of the filters will determine how the query processes. When applying multiple filters, it is best to move down from the most organized to the least organized.

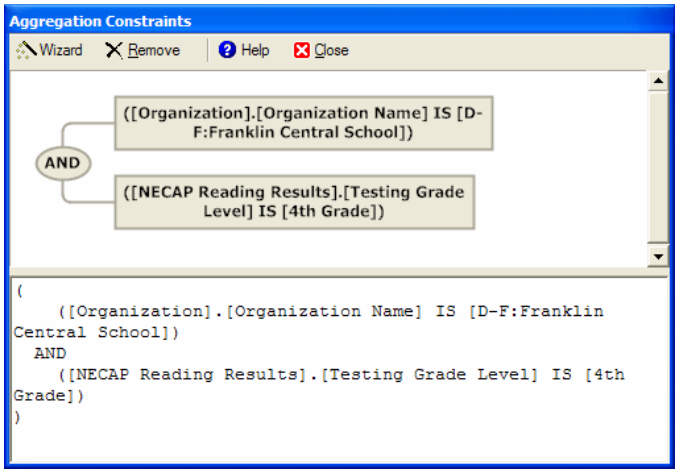


11) Click Next. The following window allows you to pick the school by highlighting [ORGANIZATION].[ORG_NAME] on the left and then selecting from the values on the right.
12) After selecting the desired school, on the left, highlight [NECAP_READ_RESULTS].[TST_GRADE_LEVEL], then click the appropriate value on the right.

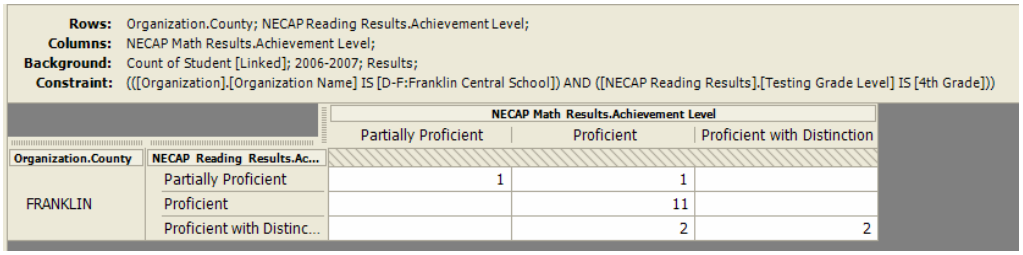




13) After selecting all of the Constraints, click Finish. The Constraints display in the Constraints window.



14) Close the Constraints window and run the query. Note that even though this query is constrained by a specific school and grade, you cannot tell this by the query itself. You must view the Summary area or return to the Constraints window to view the actual constraints.



Note: The same results can be achieved by the adding the Organization and Testing Grade Level Attributes to the query, but using a constraint allows you to add these filters in the background leaving the results less cluttered

Note: Hierarchy Constraints can be used on the List tab as well.

Appendix

B

Custom Formulas

Objectives

When you complete this chapter, you will be able to:

- Apply custom formulas to your query results.

Overview

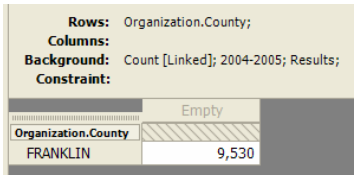
Oftentimes you may need to perform calculations on your data results that aren't possible with the available measures. With VT EDW, you can add custom formulas to any query. The custom formulas available in VT EDW are similar to those available in Excel formulas or simple sql statements. Knowledge of these two areas isn't necessary however, as sample formulas and formula variables and structure are provided for reference.

Using Custom Formulas

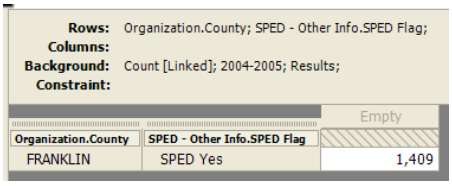
A common educator request is to look at the percentage a certain group comprises compared to the entire student population. For example, I may want to see what percentage of my total student population is classified as Special Education. Many schools track Special Education information outside of the regular student information system. Because of this setup, all of the student population is rarely accounted for when looking at Special Education data; therefore, it sometimes seems impossible to look at how the percentage of students listed as Special Ed compares to the district population as a whole. With custom formulas, this information can be calculated within the VT EDW program.

Scenario: There is an Object in my warehouse called SPED Flag YES that tracks data about my special education student population. Because this information is tracked by the Special Ed coordinator in a different system from the remainder of our student data, only information for those students who are classified as Special Ed are included. I need to see the percentage of students out of the total school population who are in this program for the 2004-2005 school year.

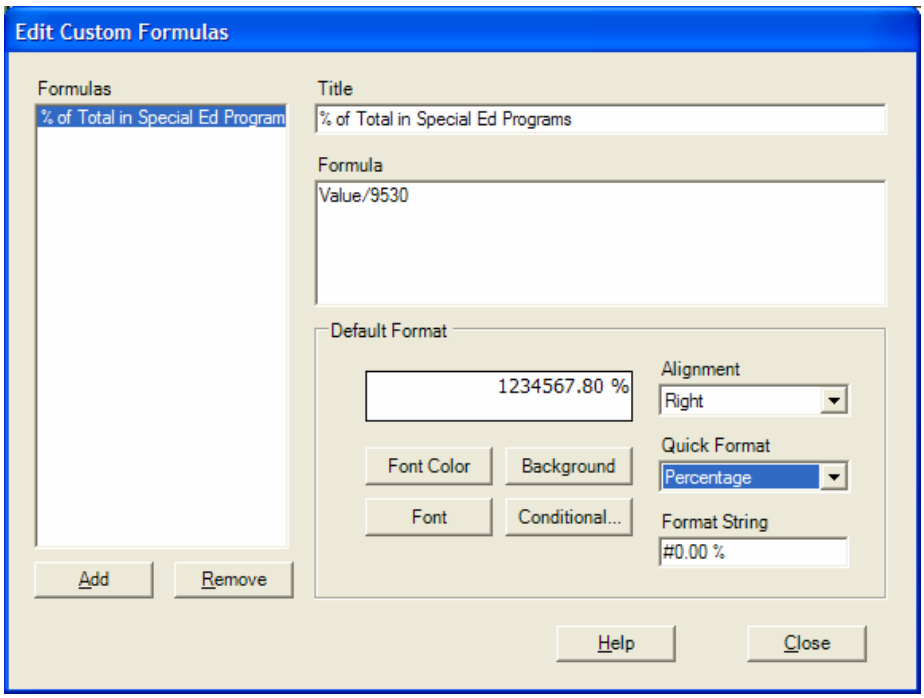
1) Select a Count of Students as the Measure.
2) Select 2004-2005 as the Time Period.
3) Drag and drop Organization – County – *your County* into the Rows
4) Run the Query. This simple student count will give us the total student population count which will be used later in our custom formula.



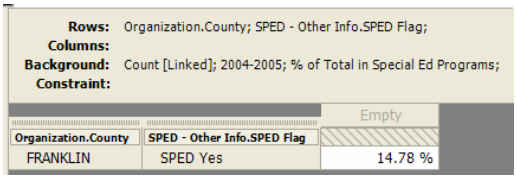
5) Drag and Drop the SPED Other Info, SPED Flag YES coordinate to the Rows.
6) Run the Query. View the results. We'll now add the custom formula.



7) Right-click within the results area and choose *Display* | *Edit Custom Formulas…* Once the Edit Custom Formulas window opens, click **Add**.

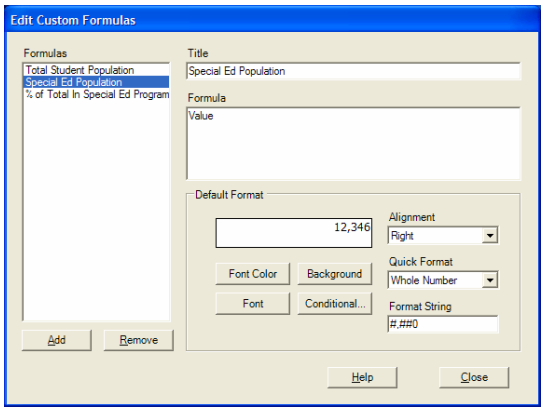


8) In the *Title* field, enter an appropriate title for the formula such as `% of Total in Special Ed Programs.`
9) In the Formula field, beside the `Value` text, enter the following: `/9530`. *(Or the total for your County)* This will divide the cell's value by the total student population figure.
10) In the Quick Format dropdown list, select Percentage. This will show the calculation as a percentage rather than as a decimal figure. Click Close and view the results.

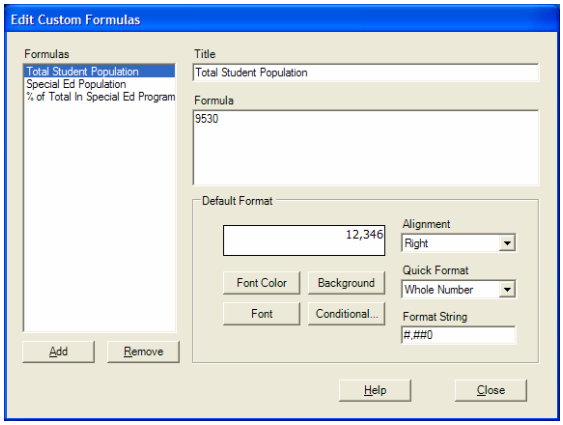


If you wanted to display more information in the query such as the original number of special ed students and the value for the total student population as well, you could just add additional formulas to the query. If we start with our original query which displayed a count of the special ed students, we can add three separate formulas that will provide for a more detailed query.

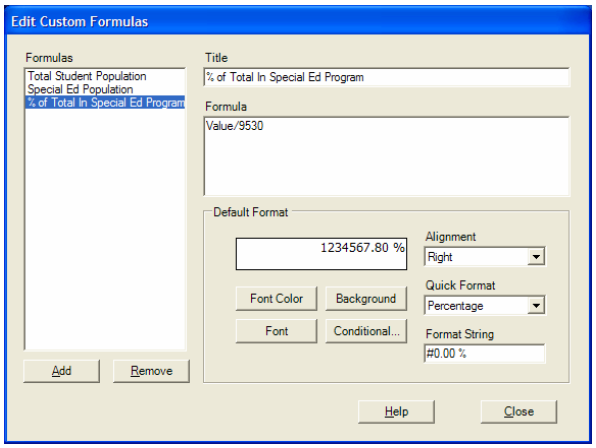
1) To return to the original query, right-click in the results area and select the option that displays the title of the custom formula we added previously *(% of Total in Special Ed Programs*). This will delete the custom formula.
2) To apply multiple custom formulas, right-click in the results area and select *Display | Edit Custom Formulas...* After clicking **Add**, enter the following formulas.
3) For the first formula, enter `Special Ed Population` as the Title and select *Whole Number* from *the Quick Format* dropdown list. Click **Add.**



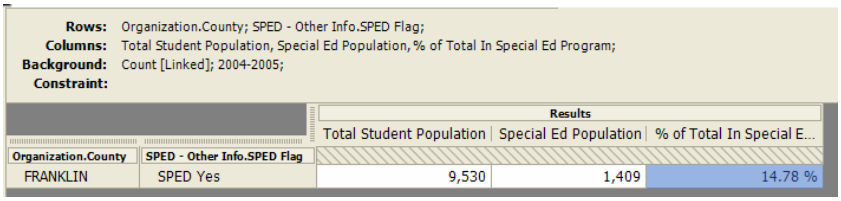
4) For the second formula, enter `Total Student Population` as the Title and enter 9530 *(or the Total for your County)* in the Formula box. Select *Whole Number* from the *Quick Format* dropdown list. Click **Add.**



5) For the third formula, enter `% of Total in Special Ed Program` as the Title and enter `/16755` beside `Value` in the *Formula* box. Select *Percentage* from the *Quick Format* dropdown list.



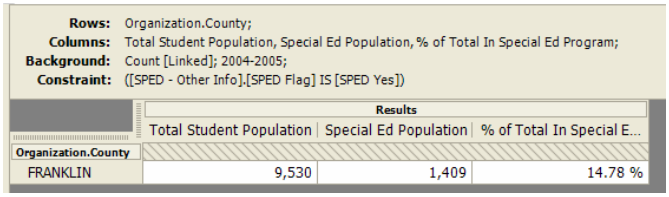
6) After entering all of the formulas, click **Close** and view the results.



Rows: Organization.County; SPED - Other Info.SPED Flag;
Columns: Total Student Population, Special Ed Population, % of Total In Special Ed Program;
Background: Count [Linked]; 2004-2005;
Constraint:

		Results		
		Total Student Population	Special Ed Population	% of Total In Special E...
Organization.County	SPED - Other Info.SPED Flag			
FRANKLIN	SPED Yes	9,530	1,409	14.78 %

You could add the SPED Flag Yes member by adding it through the Constraints Wizard if you didn't want it to display as part of the query coordinates. The result is displayed below. Notice the constraint takes the place of the Row coordinate above.



Rows: Organization.County;
Columns: Total Student Population, Special Ed Population, % of Total In Special Ed Program;
Background: Count [Linked]; 2004-2005;
Constraint: ([SPED - Other Info].[SPED Flag] IS [SPED Yes])

	Results		
	Total Student Population	Special Ed Population	% of Total In Special E...
Organization.County			
FRANKLIN	9,530	1,409	14.78 %

Glossary of Terms

Age Norms

The distribution of test scores by age of the test takers. For example, a norms table may be provided for nine-year-olds who were administered a certain assessment. This age-norms table would present such information as the percentage of nine-year-olds who scored below a certain point on the test.

Aggregations

Combining the results of all groups that make up the sample or population. For example, an aggregate query that looks at student population would include district-wide counts, not broken down by building, ethnicity, etc.

Attributes

In the VT EDW, Attributes are different characteristics of Objects. That is, an Attribute is a descriptive or quantitative element of an Object that is itself made up of Members. For instance, the Object "Student" may have an Attribute "Gender," the members of which are "male" and "female."

Axis

Axis refers to how data is positioned in a query (i.e., rows, columns, or background).

Background

When data is chosen for display in the background, that member name will appear above the Columns heading of the table in the data viewing area.

Column

When data is chosen for display as a column, that data selection will appear in the Columns heading of the table in the data viewing area.

Constraint Expression

A Constraint Expression limits the results of a new query and adheres to a formal syntax: `[Object Name].[Attribute Name] | operator | value`. Constraint Expressions use the mathematical operators <,>,=,!=,<=,>=,+,-,*,/,% and the Boolean operators AND, OR and NOT.

For instance, to limit a query to Grades 3 and below, enter the constraint `[Students].[Grade Level] <= 3.` In this expression, [Grade Level] corresponds to the Attribute named 'Grade Level' that belongs to the Object group named [Students]. Equally valid would be `[Schools].[School Name] = 'Holly Elementary School'`. This expression limits the query to those schools where the school name equals 'Holly Elementary School'. A text string, such as Holly Elementary School, must be set off by single quotation marks.

Correlation Coefficient

A measure of the degree to which two values are linearly related. A number between -1 and 1, measuring the linear relationship between two variables:

A value of 1: a perfect linear relationship, with a positive slope between the two variables.
A value of -1: a perfect linear relationship, with a negative slope between the variables.
A value of 0: no linear relationship exists between the two variables.

Count

A measure that is the number of scores matching the dimensions and members selected. For example, a count of students in a school tells you how many students are in the school.

TetraData discovery

The process of understanding the dynamics of your organization by starting with highly aggregated information and moving into more detailed data. TetraData discovery options enable viewing higher and lower levels of organizational data.

TetraData mining

Techniques for finding patterns and trends in large data sets. The process of automatically extracting valid, useful, previously unknown, and ultimately comprehensible information from large databases.

TetraData warehouse

A database built to support information access. A data warehouse is typically fed from one or more transaction databases. The data needs to be cleaned and restructured to support queries, summaries, and analyses.

Diagnostic Test

A test used to "diagnose" or analyze. A diagnostic test works to locate an individual's specific areas of weakness or strength, to determine the nature of his or her weaknesses or deficiencies, and, if possible, to suggest their cause. Such a test yields measures of the components or subparts of some larger body of information or skill. Diagnostic achievement tests are most commonly prepared for the skill subjects.

Discrete

An option on the distribution measure that makes the resulting divisions discrete rather than continuous. For example, quartiles of 0-24, 25-49, 50-74, 75-100 are discrete, while divisions of 0-25, 25-50, 50-75, 75-100 are not.

Distribution

A *Distribution* of scores or other measures has a distinctive bell-shaped appearance when it is displayed on a graph. In a normal distribution, the measures are distributed symmetrically about the mean. Cases are concentrated near the mean and decrease in frequency, according to a precise mathematical equation, the farther one departs from the mean. The assumption that many mental and psychological characteristics are distributed normally has been very useful in test development work.

Eliminate

Eliminate is a data-discovery method that removes selected items from the current display of data.

Expand

Expand is a data-discovery method that enables viewing lower levels of a dimension's hierarchy. When you expand a collapsed item, all the items in the level immediately below it in the hierarchy appear in the current display of data.

Hierarchy

A set of data with pre-defined sub-sets that allows the user to drill-down to the student level.

HTML

HyperText Markup Language. The coding system used to create WWW pages. A page written in HTML is a text file that includes tags in angle brackets that control the fonts and type sizes, insertion of graphics, layout of tables and frames, paragraphing, calls to short runnable programs, and hypertext links to other pages. Files written in HTML generally use an .html or .htm extension.

Linear Regression

A regression is often depicted as a line drawn through the points on a scatter plot. This summarizes the relationship that exists between variables. A downward sloping line indicates a negative relationship. An upward sloping line indicates a positive relationship.

Mean

A value that is determined by dividing the sum of a set of terms by the number of terms (the average).

Measures

Measures, or Aggregations, are quantitative values. Some examples of measures are Grade, School, Gender, and Ethnicity. Measures are analyzed against Objects. For example, you can analyze the measure Mean Score against Grade or Gender.

Median

A value in an ordered set of values below and above which there is an equal number of values or which is the arithmetic mean of the two middle values if there is no one middle number.

Members

Members, also referred to as items, are the elements of an Attribute. Members appear in the Objects Panel when you select an Attribute.

Multidimensional analysis

Multidimensional analysis is a process of analyzing data that is organized according to the variables (such as Grade, Lunch Status, Time, and so forth) that decision makers find most useful in looking at their organizations.

Normal Curve Equivalent

Normalized standard scores with a mean of 50 and a standard deviation of 21.06. The standard deviation of 21.06 was chosen so that NCEs of 1 and 99 are equivalent to percentiles of 1 and 99. There are approximately 11 NCEs to each stanine.

Normal distribution

A distribution of scores or other measures that in graphic form has a distinctive bell-shaped appearance. In a normal distribution, the measures are distributed symmetrically about the mean. Cases are concentrated near the mean and decrease in frequency, according to a precise mathematical equation, the farther one departs from the mean. The assumption that many mental and psychological characteristics are distributed normally has been very useful in test development work.

Norm-referenced test

Any test in which the score acquires additional meaning by comparing it to the scores of people in an identified norm group. A test can be both norm- and criterion-referenced. Most standardized achievement tests are referred to as norm-referenced.

Norms

The distribution of test scores of some specified group called the norm group. For example, this may be a national sample of all fourth graders, a national sample of all fourth-grade males, or perhaps all fourth graders in some local district.

Objects

Objects describe attributes (categories) of a measure. For example, objects of a Mean Score measure might include Gender, Grade, Course, and School. Attributes of a dimension are called members or items.

ODBC

Open database connectivity is a Microsoft standard, now adopted by most database programs, that allows a database, spreadsheet and other programs to link to ODBC compliant databases. It then allows for the importing/exporting of data.

Percentile

A point on the norms distribution below which a certain percentage of the scores fall. For example, if 70% of the scores fall below a raw score of 56, then the score of 56 is at the 70th percentile. The term "local percentile" indicates that the norm group is obtained locally. The term "national percentile" indicates that the norm group represents a national group.

Quartiles

One of three points that divided the scores in a distribution into four groups of equal size. The first quartile, or 25th percentile, separates the lowest fourth of the group; the middle quartile, the 50th percentile or median, divides the second fourth of the cases from the third; and the third quartile, the 75th percentile, separates the top quarter.

Query

Queries are requests for data about measures and attributes that you select. The results of your queries are displayed on the screen.

Raw score

A person's observed score on a test. While raw scores do have some usefulness, they should not be used to make comparisons between performances on different tests, unless other information about the characteristics of the tests is known.

Row

Represents one occurrence of an entity (record). When data is chosen for display as a row, that data selection will appear in the row heading of the table in the data viewing area.

Scaled score

A mathematical transformation of a raw score. Scaled scores are useful when comparing test results over time. Most standardized achievement test batteries provide scaled scores for such purposes. Several different methods of scaling exist, but each is intended to provide a continuous score scale across the different forms and levels of a test series.

SQL

Structured Query Language is the standard database language used by database programs. In most database programs, actions one takes to add and retrieve data are converted behind the scenes to SQL commands to communicate your requests between and among database tables.

Standard deviation

A number that indicates the amount of variation across all test scores and is calculated for each test.

Stanines

Expressed as a nine-point normalized standard score scale with a mean of 5 and a standard deviation of 2. Only the integers 1 to 9 occur. The percentage of scores at each stanine is 4, 7, 12, 17, 20, 17, 12, 7, and 4, respectively. While stanines are popular, they are actually less informative than, say, percentiles. For example, for three students with percentiles of 39, 41, and 59, the first would receive a stanine of 4, and the next two stanines of 5. We would thus be misled into inferring that the latter two students were the same, and different from the first with respect to the characteristic measured, when in reality the first two individuals are essentially the same, and different from the third.

Table

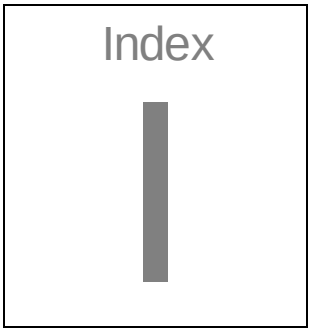
A data structure for relational databases, comprised of rows and columns, like a spreadsheet. The Table is displayed in the data viewing area.

Threshold

A *Threshold* is a value used to divide the results of a query into two groups - one group whose test scores are less than the threshold value and one group whose test scores are greater than or equal to the threshold value.

Variance

The square of the standard deviation.



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