

### The Origins of Color Scripting

At the [D23 Expo](#) in Anaheim, California in 2015, there was a session with John Lasseter, Andrew Stanton, Pete Doctor, Ralph Eggleston, and others from Disney-Pixar, talking about the 20<sup>th</sup> anniversary of *Toy Story*. Mr. Eggleston mentioned a story boarding adaptation called [color scripting](#) that he created, where he would change the main colors of each panel to reflect the emotion the animated film was supposed to portray at that time. It helped the Pixar team understand what was going on in the film emotionally at a quick glance, and it also made it easier to create a musical score to enhance those emotions.

A few weeks later, when observing from the back of the room at an event held in a large auditorium for a client, I started taking notes on the engagement and energy of the audience based on who was presenting. I planned to create a simple chart with a timeline of the event, highlighting who was presenting at different times, and indicating if engagement was high/medium/low and if energy was high/medium/low. That's when it hit me – color scripting! Without the artistic ability of Mr. Eggleston, color scripting in the evaluation world was born. In sharing the graphic created with the clients who put on the event, they could clearly see how the audience reacted to the various elements of the event and use the data to help determine how to improve the event in the future.

~Wendy L. Tackett, Ph.D., iEval

## When to Use Color Scripting

Color scripting is a tool to be used when 1) you do not have much time for data collection; 2) the literacy of your participants is low; 3) you have multiple groups participating in the same classes or programs or stations; or 4) you do not have the resources to do a full pre-/post-test or retrospective post-test. The time needed for the implementation of color scripting is minimal up front (i.e., developing the *right* question and asking the question as participants leave your session) and can be as simple or complicated in the analysis process as you want it to be.

## Step 1: Data Collection

### Type of Question

The most important step in color scripting is to determine the *right* question to ask your participants. You will have the opportunity to ask them only one question as they are leaving your workshop, station, food-tasting booth, etc. You want to make sure that question accomplishes the following:

- Uses easy to understand language
- Is framed in a positive way
- Relates directly to what the participants just learned
- Can be answered in one or two words (but not yes or no)
- Addresses the one of the first three levels of Bloom's Taxonomy – the level that you need to know more about from your participants in order to improve your programs (i.e., knowledge, comprehension, application)

### Example Questions

To give you an idea of what types of questions are appropriate, here are some examples of what has previously been used:

- What one word would you like to tell your parents about today's workshop?
- What one word describes how you feel about the food you tasted today?



- Please share, in one word, how you are feeling about the content you learned in today’s professional development.
- In one or two words, please tell me an idea or activity you learned today that you want to use in your own classroom.

### Asking the Questions

You can ask the question in a variety of ways, depending on the space, time, literacy level of the participants, and staff members you have to help with the exit question. Your delivery method for this may also depend on your audience (e.g., if you’re worried that people will just copy what others say, then pick an option that doesn’t allow for that). Typically the question responses are recorded anonymously. Here are several suggestions for how you can ask the question:

- Give everyone a slip of paper to write down the 1-2 word answer to the question and put it in a box as they leave the room.
- Have several staff members stand near the exit and record the word(s) verbally told to them upon exit.
- Put a flipchart (or several flipcharts) near the door and have people write their word(s) down on there.
- If you have an attendance sheet where people have to sign in and out (typically used for professional development where teachers, social workers, etc. get credit for the time they are in the session), you can have each participant also write the answer to the exit question next to their name as they sign out. This is particularly helpful if you have people sign out at lunch and the end of the day because then you have multiple measures to use within a day. This is also useful if you want to be more sophisticated in your data analyses and examine how individual participants evolve in their word choice over a lengthier professional development (e.g., one week, two weeks).

## Step 2: Data Analysis

### Creating an Excel Spreadsheet

The first step in the data analysis is to create a spreadsheet that includes any identifying information you may have including location of training, topic of presentation, age group, gender, time of day, presenter, order of lessons, etc. To the right is an example from a nutrition program provided in the summer at schools that was also accompanied by a taste-testing opportunity.

Location	Lesson	Grade	Food	What will you share with your families at home that you learned today?
School A	1	2	Broccoli & cauliflower	Like little trees
School A	1	3	Broccoli & cauliflower	Vitamin C
School A	1	3	Broccoli & cauliflower	Gives me gas
School B	1	3	Pineapple	Sweet and wet
School B	1	5 & 6	Pineapple	Juicy.
School B	1	5 & 6	Pineapple	Yuck
School A	1	5 & 6	Pineapple	Chewy & juicy
School A	2	2	Tomatoes & grapes	Both are fruits
School B	2	2	Tomatoes & grapes	The seeds look alike
School A	2	5 & 6	Tomatoes & grapes	They look similar but taste very different.
School A	2	5 & 6	Tomatoes & grapes	Grapes are sweet, I only liked them.
School B	3	2	Chickpeas	Seeds make plants grow
School A	3	2	Chickpeas	Fun to make hummus
School A	3	5 & 6	Chickpeas	I tried but didn't like it
School B	3	5 & 6	Chickpeas	Liked making recipes

Recoding the Data

The next step takes a little bit of time to figure out what categories to recode all of the responses into, and this will be different for each program you do (programs of the same type will have the same categories). The easiest way to do this is to start creating categories (in separate columns in the spreadsheet) for the responses, adding on new categories as you go down the list. You may find that you're able to collapse categories as you continue on in the analysis. See the example below, continuing with the previous example.

What will you share with your families at home that you learned today?	Look	Knowledge	Taste	Texture	May take action	Other
Like little trees	x					
Vitamin C		x				
Gives me gas						x
Sweet and wet			x			
Juicy.				x		
Yuck			x			
Chewy & juicy				x		
Both are fruits		x				
The seeds look alike	x					
They look similar but taste very different.			x			
Grapes are sweet, I only liked them.			x			
Seeds make plants grow		x				
Fun to make hummus					x	
I tried but didn't like it			x			
Liked making recipes					x	

Collapsing the Recoded Data

Next you need to collapse the coded columns into one column. You can do this several ways, but one of the easiest ways is to sort the spreadsheet by columns and replace the X's with the column header, as shown in the example to the right.

What will you share with your families at home that you learned today?	Recoded
Like little trees	Look
Vitamin C	Knowledge
Gives me gas	Other
Sweet and wet	Taste
Juicy.	Texture
Yuck	Taste
Chewy & juicy	Texture
Both are fruits	Knowledge
The seeds look alike	Look
They look similar but taste very different.	Taste
Grapes are sweet, I only liked them.	Taste
Seeds make plants grow	Knowledge
Fun to make hummus	May take action
I tried but didn't like it	Taste
Liked making recipes	May take action

Creating a Pivot Table

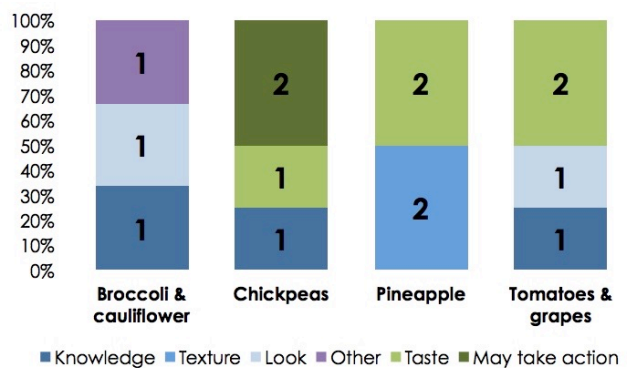
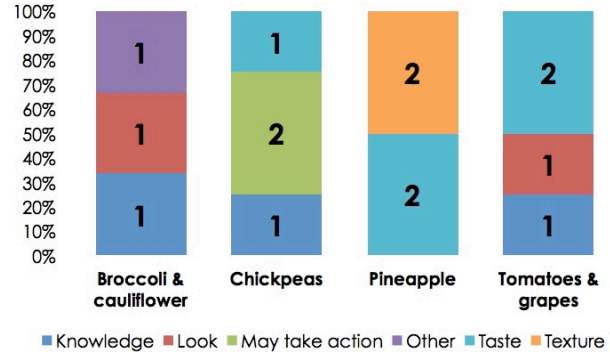
Excellent directions on how to create a pivot table can be found at <http://chandoo.org/wp/excel-pivot-tables>. For this pivot table, you'll want to highlight your entire spreadsheet, then select PivotTable. The fields shown in the example are type of food and the recoded category. You can change the variables on the pivot table to look at categories by location, lesson order, or grade level in our example.

The screenshot shows an Excel spreadsheet with a PivotTable. The PivotTable has 'Row Labels' (Food types) and 'Column Labels' (Recoded categories). The PivotTable Builder interface is open on the right, showing the 'Field name' list with 'Food' and 'Recoded' selected. The 'Report Filter' area is empty, and the 'Column Labels' area contains 'Recoded'. The 'Row Labels' area contains 'Food', and the 'Values' area contains 'Count of R...'. The PivotTable data is as follows:

Row Labels	Knowledge	Look	May take action	Other	Taste	Texture (blank)	Grand Total
Broccoli & cauliflower	1	1		1			3
Chickpeas	1		2		1		4
Pineapple					2	2	4
Tomatoes & grapes	1	1			2		4
(blank)							
Grand Total	3	2	2	1	5	2	15

### Graphing the Data

The next step is to take the totals from the pivot table and put them in charts. The example to the right uses the 100% stacked chart option. In this example, a chart was inserted in the pivot table page, with the data from the pivot table highlighted to populate the chart (and formatting changes were made to the chart for easier readability). You may choose to do simple analyses here, examining the data as it is originally graphed. In this example, it is clear that the chickpea lesson was the only one that could potentially result in behavior change and the pineapple lesson did not result in any knowledge reported (note: these were not the actual findings, this represents a tiny portion of the data). Analyses may get more complex, reordering categories to show how they potentially connect to each other (see second example to the right, with the blue categories more knowledge-based and the green categories more action-based) or analyzing by different variables (e.g., location of training, order of lessons).



### Step 3: Discussion

You now have your data recoded and illustrated in colorful visuals that allow for the easy interpretation of data. Use these graphs with your colleagues to discuss if your programs are having the impact you intend them to have. **This is the most important part of the process!** Facilitate discussions around the data, asking questions like:

- Should you change the timing of specific content?
- Did different presenters result in different participant reactions?
- What portions of your training lead to more changes in knowledge, attitudes, or behaviors?