

## USING RETROSPECTIVE POST DATA FROM QUALTRICS

### April 2020

This document shows how to export retrospective post data from Qualtrics and use it to create the same summary table numbers seen in results produced by Organizational Development for scan forms.

#### Visualizing the End Product

- The goal is to take the output for retrospective post items from the default report in Qualtrics and reproduce the two summary tables below in Excel. Organizational Development provides these tables as a matter of standard procedure for any scan form with retrospective post items.


	Program Content	Mean Before	Mean After	Percent Change
1	Current Water Supply and Demand in Texas	2.14	3.64	50.0%
2	Identifying problems with irrigation system performance	3.00	3.64	21.3%
3	Conducting an irrigation catch can test	2.29	3.71	47.3%
4	Calculating precipitation rate	2.50	3.64	38.0%
5	Determining turf water requirements using ETo	2.36	3.50	38.0%
6	Creating an irrigation Schedule	2.64	3.57	31.0%
7	Resources and Tools for Irrigation Scheduling	2.50	3.64	38.0%

Percent Change = ((Post Mean - Pre Mean) / 3) \* 100

	Program Content	Pct. at Good or Excellent Before the Program	Pct. at Good or Excellent After the Program	Pct. Point Difference (After vs. Before)	Pct. With Any Increase in Understanding
1	Current Water Supply and Demand in Texas	28.6%	100.0%	71.4	
2	Identifying problems with irrigation system performance	78.6%	100.0%	21.4	
3	Conducting an irrigation catch can test	50.0%	92.9%	42.9	
4	Calculating precipitation rate	50.0%	92.9%	42.9	
5	Determining turf water requirements using ETo	50.0%	92.9%	42.9	
6	Creating an irrigation Schedule	50.0%	92.9%	42.9	
7	Resources and Tools for Irrigation Scheduling	42.9%	100.0%	57.1	

## The Retrospective Post

- Below is a retrospective post question built in Qualtrics. It has the standard BEFORE and AFTER columns with the four-point scale for level of understanding. This question was part of survey at the conclusion of an online program on irrigation practices. It has seven items related to the program content.



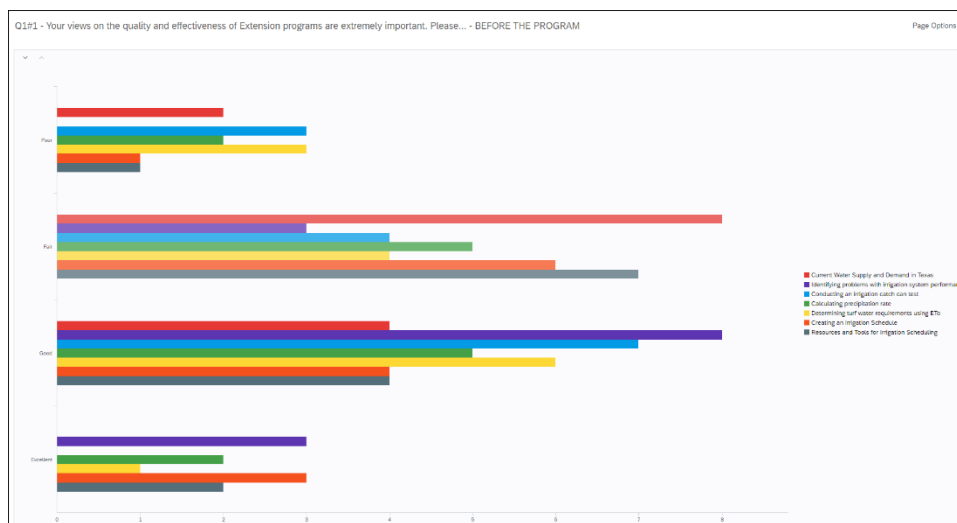
Your views on the quality and effectiveness of Extension programs are extremely important. Please take a few minutes to tell us about your experience with this activity.

For each topic listed below, please indicate your level of understanding **BEFORE** the program and then **AFTER** the program.

	BEFORE THE PROGRAM				AFTER THE PROGRAM			
	Poor	Fair	Good	Excellent	Poor	Fair	Good	Excellent
Current Water Supply and Demand in Texas	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Identifying problems with irrigation system performance	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Conducting an irrigation catch can test	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Calculating precipitation rate	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Determining turf water requirements using ETo	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Creating an Irrigation Schedule	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Resources and Tools for Irrigation Scheduling	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

## Default Report in Qualtrics

- The default report in Qualtrics produces a chart and tables. The chart (below) is cluttered with all seven items and difficult to interpret. It is not usable.



The tables, on the other hand, contains the pieces of information needed to generate summary table numbers (example below for BEFORE). This same table is produced by Qualtrics for both the BEFORE and AFTER portions of the retrospective post for each item. Note it contains the mean value for each item along with the frequency and percent for each point on the scale (Poor, Fair, Good, Excellent).

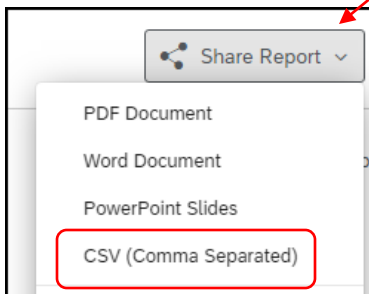
#	Field	Minimum	Maximum	Mean	Std Deviation	Variance	Count
1	Current Water Supply and Demand in Texas	3.00	4.00	3.64	0.48	0.23	14
2	Identifying problems with irrigation system performance	3.00	4.00	3.64	0.48	0.23	14
3	Conducting an irrigation catch can test	2.00	4.00	3.71	0.59	0.35	14
4	Calculating precipitation rate	2.00	4.00	3.64	0.61	0.37	14
5	Determining turf water requirements using ETo	2.00	4.00	3.50	0.63	0.39	14
6	Creating an Irrigation Schedule	2.00	4.00	3.57	0.62	0.39	14
7	Resources and Tools for Irrigation Scheduling	3.00	4.00	3.64	0.48	0.23	14

#	Field	Poor	Fair	Good	Excellent	Total
1	Current Water Supply and Demand in Texas	0.00% 0	0.00% 0	35.71% 5	64.29% 9	14
2	Identifying problems with irrigation system performance	0.00% 0	0.00% 0	35.71% 5	64.29% 9	14
3	Conducting an irrigation catch can test	0.00% 0	7.14% 1	14.29% 2	78.57% 11	14
4	Calculating precipitation rate	0.00% 0	7.14% 1	21.43% 3	71.43% 10	14
5	Determining turf water requirements using ETo	0.00% 0	7.14% 1	35.71% 5	57.14% 8	14
6	Creating an Irrigation Schedule	0.00% 0	7.14% 1	28.57% 4	64.29% 9	14
7	Resources and Tools for Irrigation Scheduling	0.00% 0	0.00% 0	35.71% 5	64.29% 9	14

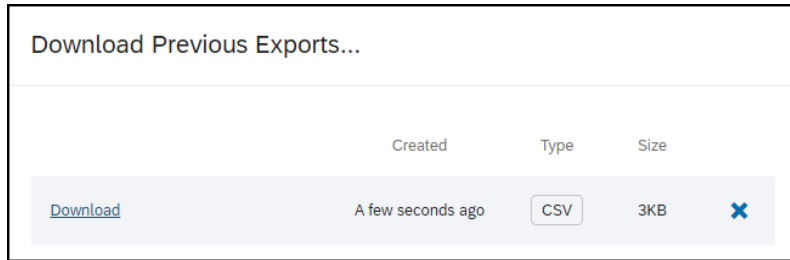
### Export Retrospective Post of the Default Report

- Export just the retrospective post items to CSV format. While in the default report, click on “Share Report” and select “CSV (Comma Separated).”



This brings up the “Export Report” interface. Click on “Select All” which actually deselects all the check boxes. Then click on just the two retrospective post items. Click on Export Pages.

This exports the retrospective post tables to your Downloads folder in CSV format, which is usable by Excel.



- Open the .csv file in Excel. Note it has the relevant tables from Qualtrics for all seven items on both the BEFORE and AFTER columns (see below). Now, it is just a matter of using Excel to produce the summary table numbers.

The screenshot shows an Excel spreadsheet with two main data tables. The first table is titled "Q1#1 - Your views on the quality and effectiveness of Extension programs are extremely important. Please... - BEFORE THE PROGRAM". The second table is titled "Q1#2 - Your views on the quality and effectiveness of Extension programs are extremely important. Please... - AFTER THE PROGRAM". Both tables list seven items and provide summary statistics (Minimum, Maximum, Mean, Std Devial, Variance, Count) and a breakdown by response category (Poor, Fair, Good, Excellent, Total).

#	Field	Minimum	Maximum	Mean	Std Devial	Variance	Count
1	Current Water Supply and Demand in Texas	1	3	2.14	0.64	0.41	14
2	Identifying problems with irrigation system performance	2	4	3	0.65	0.43	14
3	Conducting an irrigation catch can test	1	3	2.29	0.8	0.63	14
4	Calculating precipitation rate	1	4	2.5	0.91	0.82	14
5	Determining turf water requirements using ETo	1	4	2.36	0.89	0.8	14
6	Creating an Irrigation Schedule	1	4	2.64	0.89	0.8	14
7	Resources and Tools for Irrigation Scheduling	1	4	2.5	0.82	0.68	14

#	Question	Poor	Fair	Good	Excellent	Total
1	Current Water Supply and Demand in Texas	14.29%	2 57.14%	8 28.57%	4 0.00%	0 14
2	Identifying problems with irrigation system performance	0.00%	0 21.43%	3 57.14%	8 21.43%	3 14
3	Conducting an irrigation catch can test	21.43%	3 28.57%	4 50.00%	7 0.00%	0 14
4	Calculating precipitation rate	14.29%	2 35.71%	5 35.71%	5 14.29%	2 14
5	Determining turf water requirements using ETo	21.43%	3 28.57%	4 42.86%	6 7.14%	1 14
6	Creating an Irrigation Schedule	7.14%	1 42.86%	6 28.57%	4 21.43%	3 14
7	Resources and Tools for Irrigation Scheduling	7.14%	1 50.00%	7 28.57%	4 14.29%	2 14

#	Field	Minimum	Maximum	Mean	Std Devial	Variance	Count
1	Current Water Supply and Demand in Texas	3	4	3.64	0.48	0.23	14
2	Identifying problems with irrigation system performance	3	4	3.64	0.48	0.23	14
3	Conducting an irrigation catch can test	2	4	3.71	0.59	0.35	14
4	Calculating precipitation rate	2	4	3.64	0.61	0.37	14
5	Determining turf water requirements using ETo	2	4	3.5	0.63	0.39	14
6	Creating an Irrigation Schedule	2	4	3.57	0.62	0.39	14
7	Resources and Tools for Irrigation Scheduling	3	4	3.64	0.48	0.23	14

#	Question	Poor	Fair	Good	Excellent	Total
1	Current Water Supply and Demand in Texas	0.00%	0 0.00%	5 35.71%	9 64.29%	9 14
2	Identifying problems with irrigation system performance	0.00%	0 0.00%	5 35.71%	9 64.29%	9 14
3	Conducting an irrigation catch can test	0.00%	0 7.14%	1 14.29%	2 78.57%	11 14
4	Calculating precipitation rate	0.00%	0 7.14%	1 21.43%	3 71.43%	10 14
5	Determining turf water requirements using ETo	0.00%	0 7.14%	1 35.71%	5 57.14%	8 14
6	Creating an Irrigation Schedule	0.00%	0 7.14%	1 28.57%	4 64.29%	9 14
7	Resources and Tools for Irrigation Scheduling	0.00%	0 0.00%	1 35.71%	5 64.29%	9 14

## Using Excel to Produce Summary Table Numbers

- First, calculate the percent change in means. Remember, percent change for a scale item has a different formula than the traditional calculation of percent change. The formula is (after mean – before mean) / 3 (for a four-point scale). Out to the right, on the same column as the first retrospective post item, enter the calculation. The after mean (cell E26 - blue square below) – the before mean (cell E7 – red square below) / 3.

Q1#1 - Your views on the quality and effectiveness of Extension programs are extremely important. Please... - BEFORE THE PROGRAM																				
#	Field	Minimum	Maximum	Mean	Std Devial	Variance	Count													Percent Change in Means
1	Current Water Supply and Demand in Texas	1	3	2.14	0.64	0.41	14													=(E26-E7)/3
2	Identifying problems with irrigation system performance	2	4	3.00	0.65	0.43	14													
3	Conducting an irrigation catch can test	1	3	2.29	0.8	0.63	14													
4	Calculating precipitation rate	1	4	2.50	0.91	0.82	14													
5	Determining turf water requirements using ETO	1	4	2.36	0.89	0.8	14													
6	Creating an irrigation Schedule	1	4	2.64	0.89	0.8	14													
7	Resources and Tools for Irrigation Scheduling	1	4	2.50	0.82	0.68	14													
#	Question	Poor	Fair	Good	Excellent	Total														
1	Current Water Supply and Demand in Texas	14.29%	2 57.14%	8 28.57%	4 0.00%	0 14														
2	Identifying problems with irrigation system performance	0.00%	0 21.43%	3 57.14%	8 21.43%	3 14														
3	Conducting an irrigation catch can test	21.43%	3 28.57%	4 50.00%	7 0.00%	0 14														
4	Calculating precipitation rate	14.29%	2 35.71%	5 35.71%	5 14.29%	2 14														
5	Determining turf water requirements using ETO	21.43%	3 28.57%	4 42.86%	6 7.14%	1 14														
6	Creating an irrigation Schedule	7.14%	1 42.86%	6 28.57%	4 21.43%	3 14														
7	Resources and Tools for Irrigation Scheduling	7.14%	1 50.00%	7 28.57%	4 14.29%	2 14														
Q1#2 - Your views on the quality and effectiveness of Extension programs are extremely important. Please... - AFTER THE PROGRAM																				
#	Field	Minimum	Maximum	Mean	Std Devial	Variance	Count													
1	Current Water Supply and Demand in Texas	3	4	3.64	0.48	0.23	14													
2	Identifying problems with irrigation system performance	3	4	3.64	0.48	0.23	14													
3	Conducting an irrigation catch can test	2	4	3.71	0.59	0.35	14													
4	Calculating precipitation rate	2	4	3.64	0.61	0.37	14													
5	Determining turf water requirements using ETO	2	4	3.50	0.63	0.39	14													
6	Creating an irrigation Schedule	2	4	3.57	0.62	0.39	14													
7	Resources and Tools for Irrigation Scheduling	3	4	3.64	0.48	0.23	14													

For the first item, the percent change is 0.50. Format to be a percent with one decimal so it appears as 50.0%. Then simply copy that calculation to the other six items (see below). You now have the percent change in means for all seven retrospective post items.

Percent Change in Means	
50.0%	
21.3%	
47.3%	
38.0%	
38.0%	
31.0%	
38.0%	

- Second, calculate the percentage of respondents at the top two levels of understanding (Good or Excellent) – before and after the program – for each of the seven retrospective post items. Again, out to the right on the same column as the first item, enter the calculation. The “good” percentage (cell G16 - blue square below) + the “excellent” percentage (cell I16 – red square below).

	Good	Excellent	Total				% at Good or Excellent
8	28.57%	4 0.00%	0 14				+G16+I16
3	57.14%	8 21.43%	3 14				
4	50.00%	7 0.00%	0 14				
5	35.71%	5 14.29%	2 14				
4	42.86%	6 7.14%	1 14				
6	28.57%	4 21.43%	3 14				
7	28.57%	4 14.29%	2 14				

For the first items, the combined percentage is 28.57% (since the percentage at Excellent was 0). Then copy the calculation to the other BEFORE items.

A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
Q1#1 - Your views on the quality and effectiveness of Extension programs are extremely important. Please... - BEFORE THE PROGRAM															
#	Field	Minimum	Maximum	Mean	Std Deviat	Variance	Count								
1	Current Water Supply and Demand in Texas	1	3	2.14	0.64	0.41	14								
2	Identifying problems with irrigation system performance	2	4	3	0.65	0.43	14								
3	Conducting an irrigation catch can test	1	3	2.29	0.8	0.63	14								
4	Calculating precipitation rate	1	4	2.5	0.91	0.82	14								
5	Determining turf water requirements using ETo	1	4	2.36	0.89	0.8	14								
6	Creating an irrigation Schedule	1	4	2.64	0.89	0.8	14								
7	Resources and Tools for Irrigation Scheduling	1	4	2.5	0.82	0.68	14								
#	Question	Poor	Fair	Good	Excellent	Total									
1	Current Water Supply and Demand in Texas	14.29%	2 57.14%	8 28.57%	4 0.00%	0 14									
2	Identifying problems with irrigation system performance	0.00%	0 21.43%	3 57.14%	8 21.43%	3 14									
3	Conducting an irrigation catch can test	21.43%	3 28.57%	4 50.00%	7 0.00%	0 14									
4	Calculating precipitation rate	14.29%	2 35.71%	5 35.71%	5 14.29%	2 14									
5	Determining turf water requirements using ETo	21.43%	3 28.57%	4 42.86%	6 7.14%	1 14									
6	Creating an irrigation Schedule	7.14%	1 42.86%	6 28.57%	4 21.43%	3 14									
7	Resources and Tools for Irrigation Scheduling	7.14%	1 50.00%	7 28.57%	4 14.29%	2 14									
Q1#2 - Your views on the quality and effectiveness of Extension programs are extremely important. Please... - AFTER THE PROGRAM															
#	Field	Minimum	Maximum	Mean	Std Deviat	Variance	Count								
1	Current Water Supply and Demand in Texas	3	4	3.64	0.48	0.23	14								
2	Identifying problems with irrigation system performance	3	4	3.64	0.48	0.23	14								
3	Conducting an irrigation catch can test	2	4	3.71	0.59	0.35	14								
4	Calculating precipitation rate	2	4	3.64	0.61	0.37	14								
5	Determining turf water requirements using ETo	2	4	3.5	0.63	0.39	14								
6	Creating an irrigation Schedule	2	4	3.57	0.62	0.39	14								
7	Resources and Tools for Irrigation Scheduling	3	4	3.64	0.48	0.23	14								
#	Question	Poor	Fair	Good	Excellent	Total									
1	Current Water Supply and Demand in Texas	0.00%	0 0.00%	0 35.71%	5 64.29%	9 14									
2	Identifying problems with irrigation system performance	0.00%	0 0.00%	0 35.71%	5 64.29%	9 14									
3	Conducting an irrigation catch can test	0.00%	0 7.14%	1 14.29%	2 78.57%	11 14									
4	Calculating precipitation rate	0.00%	0 7.14%	1 21.43%	3 71.43%	10 14									
5	Determining turf water requirements using ETo	0.00%	0 7.14%	1 35.71%	5 57.14%	8 14									
6	Creating an irrigation Schedule	0.00%	0 7.14%	1 28.57%	4 64.29%	9 14									
7	Resources and Tools for Irrigation Scheduling	0.00%	0 0.00%	0 35.71%	5 64.29%	9 14									

Then copy the same calculation to the AFTER items.

- At this point, you can move cells in the spreadsheet to better resemble a table. Here the BEFORE and AFTER means were copied from the original table to the left of the “Percent Change in Means” calculation.

	Mean Before	Mean After	Percent Change in Means
Current Water Supply and Demand in Texas	2.14	3.64	50.0%
Identifying problems with irrigation system performance	3.00	3.64	21.3%
Conducting an irrigation catch can test	2.29	3.71	47.3%
Calculating precipitation rate	2.50	3.64	38.0%
Determining turf water requirements using ETo	2.36	3.50	38.0%
Creating an irrigation Schedule	2.64	3.57	31.0%
Resources and Tools for Irrigation Scheduling	2.50	3.64	38.0%
% at Good or Excellent			
	Before	After	Pct. Point Difference
Current Water Supply and Demand in Texas	28.6%	100.0%	71.4
Identifying problems with irrigation system performance	78.6%	100.0%	21.4
Conducting an irrigation catch can test	50.0%	92.9%	42.9
Calculating precipitation rate	50.0%	92.9%	42.9
Determining turf water requirements using ETo	50.0%	92.9%	42.9
Creating an irrigation Schedule	50.0%	92.9%	42.9
Resources and Tools for Irrigation Scheduling	50.0%	92.9%	42.9
	42.9%	100.0%	57.1

- Do the same for the percentage of respondents at “good” or “excellent.” Move cells so the BEFORE and AFTER columns are next to each other. Then do the final calculation – the Pct. Point Difference which is simply the difference between the two percentages (After – Before) \* 100. Multiply by 100 prepares the resulting calculation for formatting from a percentage to a number.

% at Good or Excellent		
Before	After	Pct. Point Difference
28.6%	100.0%	$+(T17-S17)*100$

Format the result to be a number with one decimal place.

- The calculations are complete. Save your spreadsheet! You now have all the numbers that go into the same summary table typically produced by Organizational Development – with one exception – Percent of Respondents with Any Increase in Understanding. This calculation is not possible with the export of the report. It requires exporting the raw data and doing record-level calculations, which is beyond the scope of this help guide.

- The next page shows the summary numbers in the Excel spreadsheet vs. the summary numbers produced by Organizational Development using SPSS.

	Mean Before	Mean After	Percent Change in Means
Current Water Supply and Demand in Texas	2.14	3.64	50.0%
Identifying problems with irrigation system performance	3.00	3.64	21.3%
Conducting an irrigation catch can test	2.29	3.71	47.3%
Calculating precipitation rate	2.50	3.64	38.0%
Determining turf water requirements using ETo	2.36	3.50	38.0%
Creating an irrigation Schedule	2.64	3.57	31.0%
Resources and Tools for Irrigation Scheduling	2.50	3.64	38.0%

	% at Good or Excellent Before	% at Good or Excellent After	Pct. Point Difference
Current Water Supply and Demand in Texas	28.6%	100.0%	71.4
Identifying problems with irrigation system performance	78.6%	100.0%	21.4
Conducting an irrigation catch can test	50.0%	92.9%	42.9
Calculating precipitation rate	50.0%	92.9%	42.9
Determining turf water requirements using ETo	50.0%	92.9%	42.9
Creating an irrigation Schedule	50.0%	92.9%	42.9
Resources and Tools for Irrigation Scheduling	50.0%	92.9%	42.9
	42.9%	100.0%	57.1

**Table: Pre Means, Post Means & Percent Change**

	Program Content	Mean Before	Mean After	Percent Change
1	Current Water Supply and Demand in Texas	2.14	3.64	50.0%
2	Identifying problems with irrigation system performance	3.00	3.64	21.3%
3	Conducting an irrigation catch can test	2.29	3.71	47.3%
4	Calculating precipitation rate	2.50	3.64	38.0%
5	Determining turf water requirements using ETo	2.36	3.50	38.0%
6	Creating an irrigation Schedule	2.64	3.57	31.0%
7	Resources and Tools for Irrigation Scheduling	2.50	3.64	38.0%

Percent Change = ((Post Mean - Pre Mean) / 3) \* 100

**Table: % at Good/Excellent, Pct Who Increased Understanding**

	Program Content	Pct. at Good or Excellent Before the Program	Pct. at Good or Excellent After the Program	Pct. Point Difference (After vs. Before)	Pct. With Any Increase in Understanding
1	Current Water Supply and Demand in Texas	28.6%	100.0%	71.4	
2	Identifying problems with irrigation system performance	78.6%	100.0%	21.4	
3	Conducting an irrigation catch can test	50.0%	92.9%	42.9	
4	Calculating precipitation rate	50.0%	92.9%	42.9	
5	Determining turf water requirements using ETo	50.0%	92.9%	42.9	
6	Creating an irrigation Schedule	50.0%	92.9%	42.9	
7	Resources and Tools for Irrigation Scheduling	42.9%	100.0%	57.1	