

E-CURE: Guide to Data and Instructor Score Reports

Welcome!

The information in this guide will help you to make the most of the data collected using E-CURE.

View and Export Data

After students complete their assessment and open-ended questions, they will receive an automated email with a link that takes them to their Score Report. The Score Report shows each outcome and the score assigned to the item by the student and the score the CURE instructor assigned to the student. Following each assessment, the Score Report will add another set of columns making it relatively easy to see how scores changed (or did not change) over time. An example of a Score Report is shown below. To call attention to outcome components with a difference of 2 or more are highlighted by boxes. While it is helpful to discuss all of the components following assessments, it is particularly important to discuss those components with a difference of 2 or more.

E-CURE Short Demo
Research Evaluation Page

View Completed Forms You are logged in as: Sam Cat | Change Accounts

Beginning of Research Research On-Going End of Research

1 2 3 4 5 6 7 8 9 10 11

[return to forms](#) Print

Assessment Scores for Sam Cat

	Initial Assessment		Mid-Research Assessment		Final Research Assessment	
	Student	Instructor	Student	Instructor	Student	Instructor
Communication						
Uses and understands professional and discipline-specific language.	1		3	2	5	3
Expresses ideas orally in an organized, clear, and concise manner.	3		4	1	4	3
Conventions of scientific communication are conveyed appropriately with respect to grammar, spelling, syntax, and sentence structure	2		3	2	4	3
Creativity						
Shows ability to approach problems from different perspectives	2		3	3	4	4
Uses information in ways that demonstrate intellectual resourcefulness.	2		4	2	4	4
Effectively connects multiple ideas/approaches	3		4	2	4	3
Autonomy						
Demonstrates an ability to work independently and identify when guidance is needed.	2		3	3	3	4
Accepts constructive criticism and uses feedback effectively.	4		4	3	3	4
Uses time well to ensure work gets accomplished.	4		3	3	4	4
Ability to deal with obstacles						
Is not discouraged by setbacks or unforeseen events and perseveres when challenges are encountered.	3		4	2	2	4
Shows flexibility and a willingness to take risks and try again.	3		4	3	4	5
Trouble-shoots problems and searches for ways to do things more effectively.	2		3	3	3	4
Intellectual development						
Recognizes that problems are often more complicated than they first appear.	2		3	*	3	3
Approaches problems with an understanding that there can be more than one right explanation or even none at all.	2		4	*	4	4
Displays accurate insight into the limits of his/her own knowledge and an appreciation for what isn't known.	2		3	2	4	3

Critical thinking and problem solving						
Maintains a posture of open-minded skepticism when considering potential solutions to problems.	3	3	1	4	4	
Looks for the root causes of problems and develops or recognizes the most appropriate corrective actions.	3	2	2	3	3	
Recognizes flaws, assumptions and missing elements in arguments.	3	2	*	4	4	
Practice and process of inquiry						
Demonstrates ability to formulate questions and hypothesis within the discipline.	1	3	2	4	4	
Demonstrates ability to properly identify and/or generate reliable data.	1	3	3	3	3	
Shows understanding of how knowledge is generated, validated and communicated within the discipline.	2	2	3	3	4	
Nature of disciplinary knowledge						
Shows understanding of the criteria for determining what is valued as a contribution in the discipline.	2	4	4	4	3	
Shows awareness of important contributions in the discipline and who was responsible for those contributions.	1	3	3	3	2	
Reads and applies information obtained from professional journals and other sources.	1	3	3	4	3	
Content knowledge skills/methodology						
Displays knowledge of key facts and concepts.	3	3	4	3	3	
Displays a grasp of relevant methods and is clear about how these methods apply to the research project being undertaken.	2	3	3	3	4	
Demonstrates an appropriate mastery of skills needed to conduct the project.	2	3	3	3	3	
Teamwork/Collaboration						
Demonstrates ability to manage conflict among colleagues	1	3	2	3	3	
Displays ability to share distribution of tasks	2	4	*	4	4	
Shows ability to work effectively in a team	2	4	1	4	4	

While the CURE instructor also is able to review the score report for each individual student, it is recommended that you follow the steps outlined here.

1. Go to the 'View and Export Data' tab found at the top right of your CURE dashboard.



When you click on the Tab, the menu below will appear.

To select an option, [View and Export Data](#) click on it.

2. Click on '[Refresh the Data](#)' (blue arrow) first to ensure you are using the most current data.

View and Export Data

This page provides a variety of ways to access summaries and aggregations of the individual student and mentor responses visible on the main dashboard.

2022

[Refresh the Data](#)

- [View Student Survey Summary](#)
This provides a collated set of responses to the student surveys.
- [View Assessment Summary](#)
This provides a summary the outcome data from the assessment forms.
- [Download all data as a CSV](#)
This is a complete copy of all the student and mentor data. Useful if you want to archive the data or explore it in other ways.

3. Selecting 'View Student Survey Summary' (yellow arrow) provides the responses to the Pre- and Post-Open-Ended Questions for each student.

- Link to Initial Survey Questions
- Link to Final Survey Questions

4. View Assessment Summary (orange arrow) is a view of assessment summaries for all outcome components you have selected for your CURE, by initial, early/mid, and final time periods. Note that the view will change if it is a two semester CURE, and will display: initial, early/mid, late, and final.

Averages are calculated for the mean score for the responses: 5=always, 4=usually, 3=often, 2=seldom, 1=not yet, 0=not yet observed. Responses with a 0 value are not included when calculating the means (because they really reflect a type of 'no response' rather than having actual numeric meaning.) The maximum average value is 5.0 and the minimum is 1.0. This display has three tabs at the top. Select the option you are interested in by clicking on the tab.

- Only Class Averages - By overall class average (both student and instructor) for each of the outcome categories.
- Individual Student Averages – By individual student average (names visible) and CURE instructor score by component
- Individual Student Averages (names omitted) - By individual student average (names omitted) and instructor score by component. This is useful in case the CURE instructor wants to share the data with the class anonymously or with colleagues.

One semester CURE, Only Class Averages view

Only class averages		Individual student averages		Individual student averages (names omitted)			
		Initial Assessment Average	Early/Mid Assessment Average		Final Assessment Average		
		Student	Student	Instructor	Student	Instructor	
Communication	class mean (standard deviation)	3.96 (0.82) n=57	4.28 (0.72) n=57	4.19 (0.69) n=57	4.44 (0.62) n=57	4.74 (0.48) n=57	
Autonomy	class mean (standard deviation)	4.14 (0.89) n=57	4.72 (0.52) n=57	4.40 (0.62) n=57	4.68 (0.54) n=57	4.95 (0.22) n=57	
Ability to deal with obstacles	class mean (standard deviation)	3.91 (0.92) n=57	4.51 (0.60) n=57	4.25 (0.54) n=57	4.53 (0.65) n=57	4.81 (0.44) n=57	
Practice and process of inquiry	class mean (standard deviation)	3.63 (0.91) n=57	4.26 (0.71) n=57	4.14 (0.71) n=57	4.40 (0.72) n=57	4.82 (0.46) n=57	

Two semester CURE, Only Class Averages view

Only class averages		Individual student averages		Individual student averages (names omitted)				
		Initial Assessment Average	Early/Mid Assessment Average		Late Assessment Average		Final Assessment Average	
		Student	Student	Instructor	Student	Instructor	Student	Instructor
Communication	class mean (standard deviation)	3.19 (1.02) n=36	3.56 (0.93) n=36	3.19 (0.40) n=36	3.58 (0.49) n=36	3.86 (0.48) n=36	4.11 (0.57) n=36	4.11 (0.46) n=36
Creativity	class mean (standard deviation)	3.03 (1.07) n=36	3.75 (0.95) n=36	3.25 (0.43) n=36	3.78 (0.67) n=36	4.08 (0.28) n=36	4.08 (0.64) n=36	4.58 (0.49) n=36
Autonomy	class mean (standard deviation)	3.67 (0.94) n=36	4.06 (0.78) n=36	3.60 (0.60) n=35	4.00 (0.67) n=36	4.44 (0.55) n=36	4.33 (0.67) n=36	4.72 (0.45) n=36
Ability to deal with obstacles	class mean (standard deviation)	3.47 (0.99) n=36	4.03 (0.73) n=36	3.28 (0.45) n=36	3.67 (0.62) n=36	4.44 (0.55) n=36	4.31 (0.52) n=36	4.67 (0.47) n=36

One semester CURE, Individual Student Averages view


Only class averages		Individual student averages		Individual student averages (names omitted)			
		Initial Assessment Average	Early/Mid Assessment Average		Final Assessment Average		
		Student	Student	Instructor	Student	Instructor	
Communication	class mean (standard deviation)	3.96 (0.82) n=57	4.28 (0.72) n=57	4.19 (0.69) n=57	4.44 (0.62) n=57	4.74 (0.48) n=57	
		4.67	5.00	4.67	4.00	5.00	
		4.00	4.00	4.00	4.00	4.67	
		3.00	4.67	4.00	5.00	4.33	

Two semester CURE, Individual Student Averages view

Only class averages		Individual student averages		Individual student averages (names omitted)				
		Initial Assessment Average	Early/Mid Assessment Average		Late Assessment Average		Final Assessment Average	
		Student	Student	Instructor	Student	Instructor	Student	Instructor
Communication	class mean (standard deviation)	3.19 (1.02) n=36	3.56 (0.93) n=36	3.19 (0.40) n=36	3.58 (0.49) n=36	3.86 (0.48) n=36	4.11 (0.57) n=36	4.11 (0.46) n=36
		3.67	3.67	3.00	4.00	3.33	3.67	3.33
		2.67	2.33	3.67	3.00	4.00	4.33	4.00
		3.67	3.67	3.00	3.67	4.00	3.67	4.67
		1.33	2.33	3.33	3.33	4.00	4.00	4.00
		3.00	4.67	3.00	3.67	4.00	3.67	4.00

5. Download all data to a .CSV file (blue arrow) which can be opened by most spreadsheet software (e.g., MS Excel). The columns will represent the variables and the rows will represent the student and instructor cases. The columns will be sorted by time, but will not be in chronological order. The file includes:

- Initial assessment includes all outcome components
- All assessments with the components selected
- Initial Student Survey
- Final Student Survey

- [View Student Survey Summary](#)
This provides a collated set of responses to the student surveys.
- [View Assessment Summary](#)
This provides a summary the outcome data from the assessment forms.
- [Download all data as a CSV](#) 
This is a complete copy of all the student and mentor data. Useful if you want to archive the data or explore it in other ways.

IMPORTANT: To ensure you are generating and using meaningful data, it is essential that all E-CURE steps be completed at the appropriate time during the research experience. Any significant time lag in completing E-CURE steps will compromise the findings.

BE AWARE: Because the SERC server will automatically delete all current academic year E-CURE data after one year, we recommend that you download all data that you might want to use either for reports or for additional analyses in the future. Keep in mind that if you decide to use your data to conduct your own research, you will need to go through your institutional review process.

Explanation of Statistical Measures

Sample Size

The number of respondents (n) is provided. It is useful to compare this value to the total number of student-mentor pairs participating in your program. Any difference – that is, when 'n' is less than the number of pairs that you registered and activated – is due to one or more of the student-mentor pairs not completing all the EvaluateUR steps.

Means

The statistical mean refers to the average for the data and is determined by adding all the assessment score points assigned to a given population of students and then dividing that total by the total number of students. It is not unusual for students to tend to score themselves higher at the initial assessment and then to adjust (decrease) their score on many of the items at the early/mid research assessment when they know more about the research and what they are capable of, and then score themselves higher at the final assessment because they have gained appreciable skills. This is common in student pre-mid-post self-assessments. The Dunning-Kruger effect is a psychology term to describe the cognitive bias in which people incorrectly overestimate their knowledge or ability in a specific area. This tends to occur because a lack of self-awareness prevents them from accurately assessing their own skills. This effect and resulting score pattern is a hallmark of metacognitive growth and is demonstrated with a curvilinear (U-shaped) growth line. As the student becomes more self-aware they adjust their scores downward because they recognize their lack of knowledge / experience and then proceed to resolve the deficit as shown in the final score.

Standard Deviation

The standard deviation (SD) is a measure of the spread of the data around the mean. By definition: 68.3% of data are within one standard deviation of the mean; 95.5% of data are within two standard deviations of the mean; and 99.7% of data values are within three standard deviations of the mean. Basically, the larger the SD, the more scatter you have around the mean (average value). This would suggest that there is a greater range in the responses reported by you and/or the students in the CURE. There is no clear definition for what constitutes a low or high standard deviation as it depends on the sample and the tolerance for variability. For example, you might see a high variation if some of your students are completing their first undergraduate research experience while others are on their second.