Definition: Quantitative and qualitative assessment is the ability to understand data for the purposes of drawing accurate conclusions and taking appropriate action.

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| **Categories** | **Needs Improvement**  **(poor)**  **1** | **Developing**  **(low satisfactory)**  **2** | **Proficient**  **(high satisfactory)**  **3** | **Outstanding**  **(exceeds expectations)**  **4** | **Score** |
| **Compiling data and information** | * Too small (or large) a set of data are compiled for analysis. * Data are not relevant for the assessment purposes. * The data are from unreliable sources, or are inaccurate. * The concept of data precision is not understood. | * A seemingly adequately sized database is compiled. * Some data are not relevant, or relevancy is not questioned. * Some of the data are from unreliable sources, or shown to be inaccurate. * A false level of precision is accepted and used, without general understanding of its pitfalls. | * There are enough data in the compiled database. * Compiled data are relevant. * The data are from a reliable source, and are shown to be accurate prior to use. * A proper level of precision is used when compiling data. | * There are both enough data and yet not excessive data in the compiled database. * Compiled data are both relevant and representative of the topic under assessment. * The data are from a reliable source, and are shown to be accurate using acceptable quality assurance (QA) techniques. * Precision checks are used to demonstrate appropriate precision level. |  |
| **Transforming data and information** | * Tabulations are simply “data dumps” without statistical or graphical analysis. * Graphics are poorly presented, and not meaningful. * Statistics are poorly applied. * There are many math errors. | * Tabulated data are useful summaries. * Graphical techniques are used. * Simple statistics are used. * There are some math errors. | * Tabulations are effective and arranged well for analysis. * Graphics are appropriate and give further insight. * Statistical analysis is sophisticated and appropriate. * Math errors are few. | * Tabulated data convey the essence of the assessment, and give new insights. * Graphics are powerful, employing special effects (e.g., 3-D) well. * Special statistics are used which allow better acceptance of conclusions. * No math errors. |  |
| **Interpreting data and information** | * There is no interpolation of data. * There is no extrapolation of data. * Trend analysis is not used. | * Some data interpolation is used in analysis. * Some extrapolation of data is used in data analysis. * Data trends are developed. | * An appropriate level of data interpolation is used during analysis. * Data extrapolation is credibly used. * Data are trended to appropriate limits. | * Data interpolation is used, and the limitations are shown & understood. * Data extrapolation is used, and the limitations are shown & understood. * Data trends are sophisticated, and not necessarily linear. |  |
| **Using data and information** | * The conclusions from data assessment are not credible or supported by the data. * The assessed data are not applicable to the studied problem. | * The data’s assessment is credible and the conclusions are accepted. * The assessed data seem applicable to the studied problem. | * The credibility of the assessment and the conclusions are demonstrated to be acceptable. * The assessed data are critically challenged to demonstrate their acceptance and applicability. | * The assessment and conclusions are shown to be credible and acceptable using an independent second approach. * The assessed data are critically challenged to demonstrate their acceptance and applicability. |  |