**4.5. Apply technology in a variety of ways to chart, track, and analyze data, including assessment of student learning.**
**CO 7.4, NETS 3a, 3d**

| | Basic (1.0 - 1.9) | Developing (2.0 - 2.9) | Proficient (3.0 - 3.9) | Advanced (4.0) |
|---|---|---|---|---|
| *Performance Evaluation Software* | No evidence of this dimension OR monitors progress by recording grades in gradebook | Demonstrates knowledge of characteristics & uses of electronic gradebooks, rubric builders, spreadsheets or other software to monitor learning; creates some electronic evaluation tools but may need support of faculty and peers to use tools | Creates & utilizes electronic evaluation tools to monitor learning, including appropriate use of rubric development of other software AND electronic gradebooks or spreadsheets (e.g.: shows student data using basic features) | Independently and routinely uses electronic evaluation tools to compile, analyze, interpret, and display student assessment data (e.g., uses advanced program features of these tools) |
| *Compile, analyze, and communicate Performance* | No evidence OR has only basic understanding and minimal ability to use productivity tools to collect, analyze, and interpret student assessment data; Cannot use technology tools such as Excel, to compile, analyze, interpret, represent, and communicate student performance data | Utilizes spreadsheet (Excel),or other charting software to compile & analyze data with support of faculty and peers (in clssroom assignments); may need support and instruction to complete the task | Independently utilizes database, spreadsheet or charting software to compile, analyze, & display data (histograms, graphs, or other visual displays); disaggregates information & displays data about individual and group performance in field experiences or student teaching | Meets criteria for "proficient" and uses statistical applications of Excel (or other charting software) to guide instruction AND/OR involves students in using technology for self-assessment and progress monitoring |
| *District, School, and Classroom assessment Tools to access* | No evidence of this dimension or cannot/does not use computer to display student data, even with support | Uses computer to display group and individual student data, with support of faculty and peers | Reviews & prints student performance data accessed from school, state, district or classroom based technology tools and disaggregates/organizes to gain meaning from it | Reviews & prints student performance data accessed from school, state, district or classroom based technology tools; uses technology to draw conclusions (e.g., comparing and contrasting student performance and demographics) |

## Operationalization/Criteria:

**Guidelines for Admission to Education:** *not evaluated at admission*

**Guidelines at Admission to Student Teaching:**
1. Benchmark at admission to student teaching is "developing" on dimensions 1 and 2.
2. Technology examples may be examples used in "planning"  -- not use of technology in assessing actual student learning.

**Examples of Evidence:**

Electronically generated  histograms, graphs, and other analyses of student data, progress monitoring data (may be embeded in TWS, unit plans, intervention plans, curriculum based measurement tracking, IEP progress reports, portfolio assessment, or diagnostic assessment reports); grade reports generated using technology; assessment reports for parents; rubrics generated using technology

**Guidelines for Program Completion/Student Teaching:**

1. Required for program completion are ratings of "proficiency" on all dimensions.
2.  Check level of independence in utilizing technology software.  Proficient = utilizes technology without ongoing assistance; may require assistance to learn new software.
3.  Evaluate variety of applications; higher ratings = sought out applications or developed own applications.
4. To determine the OVERALL rating, average the ratings for the three dimensions.
5. The narrative for the Inventory should specify an example of a skill/observation that led to the rating, e.g.: D*emonstrated use of Excel in monitoring data and visually displaying it in line graphs for a student acquiring reading fluency goals.*

**Examples of Evidence:**

Electronically generated histograms, graphs, and other analyses of student data; progress monitoring data (may be embeded in TWS, unit plans, intervention plans, curriculum based measurement tracking, IEP progress reports, portfolio assessment or diagnostic assessment reports); grade reports generated using technology, assessment reports for parents; rubrics generated using technology

**Rationale:**

Barrett, H. (2004). Electronic portfolios as digital stories of deep learning: Emerging digital tools to support reflection in learner-centered portfolios. Retrieved from http://electronicportfolios.org/digistory/epstory.html.

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Greenwood, C. R., & Rieth, H. (1994). Current dimensions of technology-based assessment. *Exceptional Children, 61* , 197-209.

Quellmalz, E.S. & Haertel, G. D. (2000). Breaking the mold: Technology-based science assessment in the 21st century. Retrieved from http://pals.sri.com/papers/21stC/21stcentury.htm

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Pare, K., & Elouitz, L.H. (2005). Data warehousing: An aid to decision-making. *T.H.E. Journal, 32* (9), 32-33.

Smaldino, S.E., & Lowther, D.L. (2007). I*nstructional technology and media for learning* , 9th ed. New York: Allyn & Bacon.

Stiggins, R. (2004). *Student-involved assessment FOR learning*  (4th ed.). Upper Saddle River, NJ: Prentice-Hall.

Tetreault, D.R. (2005). Administrative technology: New rules, new tools. *T.H.E. Journal, 32* (9), 39-43.

Barett's web site on portfolio assessment: http://electronicportfolios.org/portfolios.html

Center for Research in Educational Technology: http://caret.iste.org/ -- includes resources and links/information on electronic assessment tools

The Technology Applications Center for Educator Development: http://www.tcet.unt.edu/START/assess/