National Partnership for Careers in LPSCS Conference

Rubrics to Assess Basic IT User Skills In LPSCS Career Training

Wednesday, December 12, 2007
Las Vegas, Nevada

Today's Session

- Basic IT Skills for LPSCS
- What do we mean by "proficiency"?
- *Rubrics to Assess Basic IT User Skills*
- ITAC rubrics: an integrated teaching tool
- Rubrics = structure for learning & assessment in LPSCS Career Training
- Designing Rubrics for Investigation

Access

Define

Create

INFORMATION

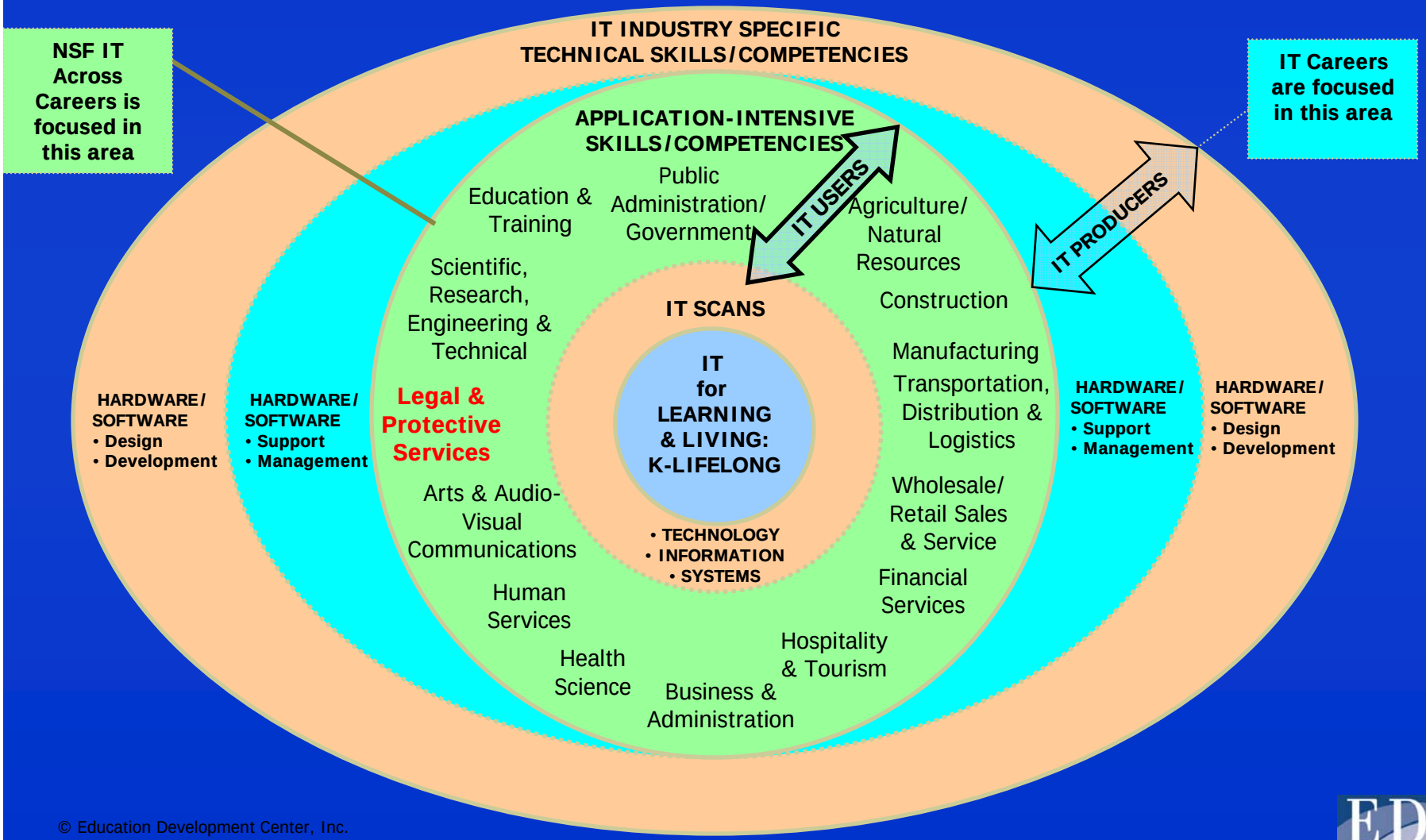
Evaluate

Integrate

Manage

Source: ETS *iSkills/ICT Proficiencies*

Making Sense of IT for Learning, Living, & Working



EDC

IT Across Careers

An integrated approach to teaching IT "core" applications *across* Career Clusters:

Agriculture
Architecture & Construction
Arts/AV Technology/Communications
Business Management & Administration

Education & Training
Finance
Government & Public Administration
Health Science

Hospitality & Tourism
Human Services
Information Technology
Law/Public Safety/ Corrections/Security
Manufacturing
Marketing/Sales/Service
STEM
Transportation, Distribution, & Logistics

IT Core Applications for . . .

Communications & Productivity

- PIM/Productivity
- Collaborative/Groupware
- Electronic Mail
- Internet
- Writing/Publishing
- Presentation

Analysis

- Spreadsheet
- Database
- Geographic Positioning/Geographic Information Systems (GPS/GIS)

Equipment

- Computer Operations
- Computer-Based Equipment

Rubrics to Assess Workplace Skills

1. Identify skills to be assessed
2. Establish 2-3 most important things learner needs to be able to do for each skill
3. Identify a continuum or progression of skills
4. Define what **proficiency** is for the skill
5. Align with validated skill sets
6. Use technical language of the industry

ITAC Presentation Applications Rubric

Performance Elements	Level 1 Novice → Measurement Criteria	Level 2 Approaching Proficiency → Measurement Criteria	Level 3 Proficiency Measurement Criteria	Level 4 Above Proficiency Measurement Criteria
PE 1: Prepare presentations for training, sales and information sharing.	• Create a new presentation using default slide layout and design. • Edit text elements in an existing presentation. • Does not use animations.	• Create a new presentation using text layouts. • Select a slide design for the presentation. • Add text elements to an existing presentation. • Add content (e.g., table, chart, graph, clip art, picture) using automated content wizard. • Edit existing slide transitions.	• Create a new presentation using both text and content layouts. • Change color scheme for a slide design. • Create and edit external graphic elements (e.g., a scanned photo or drawing into a slide. • Create new animations and action buttons. • Create new slide transitions.	• Create a new presentation template. • Modify slide masters (e.g., fonts, graphic elements, colors, layout) for a presentation. • Add audio (e.g., voice or music) to a slide.
PE 2: Deliver presentations with supporting materials.	• Use slide format exclusively. • Print an entire presentation in slide format. • Run a slide show manually (e.g., using the mouse).	• Create and distribute presentation outline. • Print either key slides or an entire presentation in slide or outline format. • Start an automated slide show.	• Create and distribute presentation handouts or speaker notes. • Print either key slides or an entire presentation in handout or notes format. • Create an automated slide show.	• Distribute presentation materials using the WWW (e.g., create a web page) or in a PDF.

ITAC Spreadsheet Rubric

Performance Elements	Level 1 Novice → Measurement Criteria	Level 2 Approaching Proficiency → Measurement Criteria	Level 3 Proficiency → Measurement Criteria	Level 4 Above Proficiency Measurement Criteria
PE1: Create spreadsheet.	• Input numeric or text data to an existing spreadsheet or template. • Edit existing spread-sheet(s) using basic edit functions (cut, copy, paste, find-and-replace). • Adjust rows and columns to accommodate data. • Apply formatting options for clear display of data (e.g., cell alignment, wrap text, bold, borders and shading...). • Print worksheet so that output is readable.	• Create new spreadsheet based on given tables of data. • Apply cell type formatting (e.g., date, dollar, text, decimal...) appropriate to data type. • Add document identification (e.g., page numbers, dates, and titles) in headers and footers. • Print only relevant data so that it is readable (e.g., use set print area to fit into one or multiple pages).	• Create new spreadsheet based on a set of data where you must identify the appropriate structure (e.g., rows and columns) for data display and analysis. • Create new worksheets within the same file for related analyses. • Save spreadsheets in multiple formats (e.g., CSV, text-delimited, SYLK...) to share data with other applications or colleagues. • Edit existing spreadsheet(s) using program functions (series auto-fill, repeat, clear). • Hide columns and rows. • Print requested data so that it is legible, accurately labeled, and aligned well in the page.	• Create new spreadsheet by importing data from data files or other spreadsheet programs. • Apply protection to work-sheet data elements and/or workbook using protection tools. • Define a range name for a cell, a range of cells, formula, and/or a constant value. ▪ Record a new macro for a repeated action.
PE2: Perform calculations and analysis on data.	• Do not create graphs or charts. • Build a simple calculation using two cells or values and one operand (+, -, *, /). • Create a simple database by making a list on a worksheet.	• Use chart wizard to create a chart or graph from an adjacent selection with appropriate chart type. • Build calculations using the formula wizard. • Use sort functions to organize data by columns in a list.	• Write simple formulas. • Use chart wizard to create a chart or graph from adjacent selections with appropriate chart type and labels. • Use filter and comparison criteria to find specific values in rows in a list. • Link data between two or more worksheets in a single file.	• Create a chart or graph independently from adjacent or non-adjacent selections (different worksheets or files) with appropriate chart type and labels. • Build calculations indepen-dently using the correct function and data references. • Create a simple pivot table based on a list created in a spread-sheet program or database. • Link data between two or more files.

5 Ways to Use ITAC Rubrics

1. Check for assessment gap between curriculum and proficiency level of rubrics
2. Benchmark IT skills requirements against proficiency level of the rubric
3. Observe students using IT applications
4. Student self-evaluation: Circle what things they can do
5. Framework to review student output

Benefits of ITAC RUBRICS

- Skills based assessment tool
- Compatible with any part of the curriculum
- Not tied to any grade level or specific type of environment
- Generic language
- Vendor neutral

Rubrics to Benchmark LPSCS Knowledge & Skills

Purpose

- **Establish baseline learning of program fundamentals**
- **Give students clear understanding of program learning progression**

Using rubrics in LPSCS programs of study:

1. For students, instructors, and curriculum developers: To clearly outline what next level learning should be and/or where it should begin.
2. For employers hiring our graduates: To provide a consistent understanding of depth & breadth of the students' mastery of the subject.
3. For students: To articulate in interviews and via resumes and portfolios the breadth of their skills and mastery of the subject to employers.

For program graduates seeking additional credits toward promotion: To offer more advanced training in a subject via a credit-based course.

For instructors and curriculum planners/developers: To clearly mark where next level of training should begin for post-graduate credit based courses (especially those courses taken for credit toward promotion).

6. For similar courses, to show how course extends the learning by broadening the knowledge base of the previous course.

Rubric to Benchmark Knowledge & Skills for Investigation of Evidence

- "Rubric" = a process to establish skill-based proficiency
- Establish 2-3 most important things a person needs to be able to do for investigation of evidence
- Identify a continuum or progression of skills from Novice, Approaching Proficiency, Proficiency, Above Proficiency]
- Determine what PROFICIENCY is for investigation of evidence
- Align the rubric with validated skill sets
- Vet language of rubrics with industry experts
- Educational Development Center (EDC)
- National Partnership for Careers in Law, Public Safety, Corrections, and Security

What do the Practitioners Need?

Personnel

- *Many departments use interns.*
- *Most departments surveyed hire primarily within law enforcement.*

  Benefits: *Criminal Justice Background*

  Drawbacks: *Little computer or statistical background*
- *Some agencies hire "civilians.*

  Benefits: *Computer and statistical background.*

  Drawbacks: *No Criminal Justice Background*

What do the Practitioners Need?

" Criminal Justice programs do not come close to filling our analytical and technical requirements."

"It is becoming common for analytical units to hire people away from other police departments in different parts of the country. This was not the case several years ago."

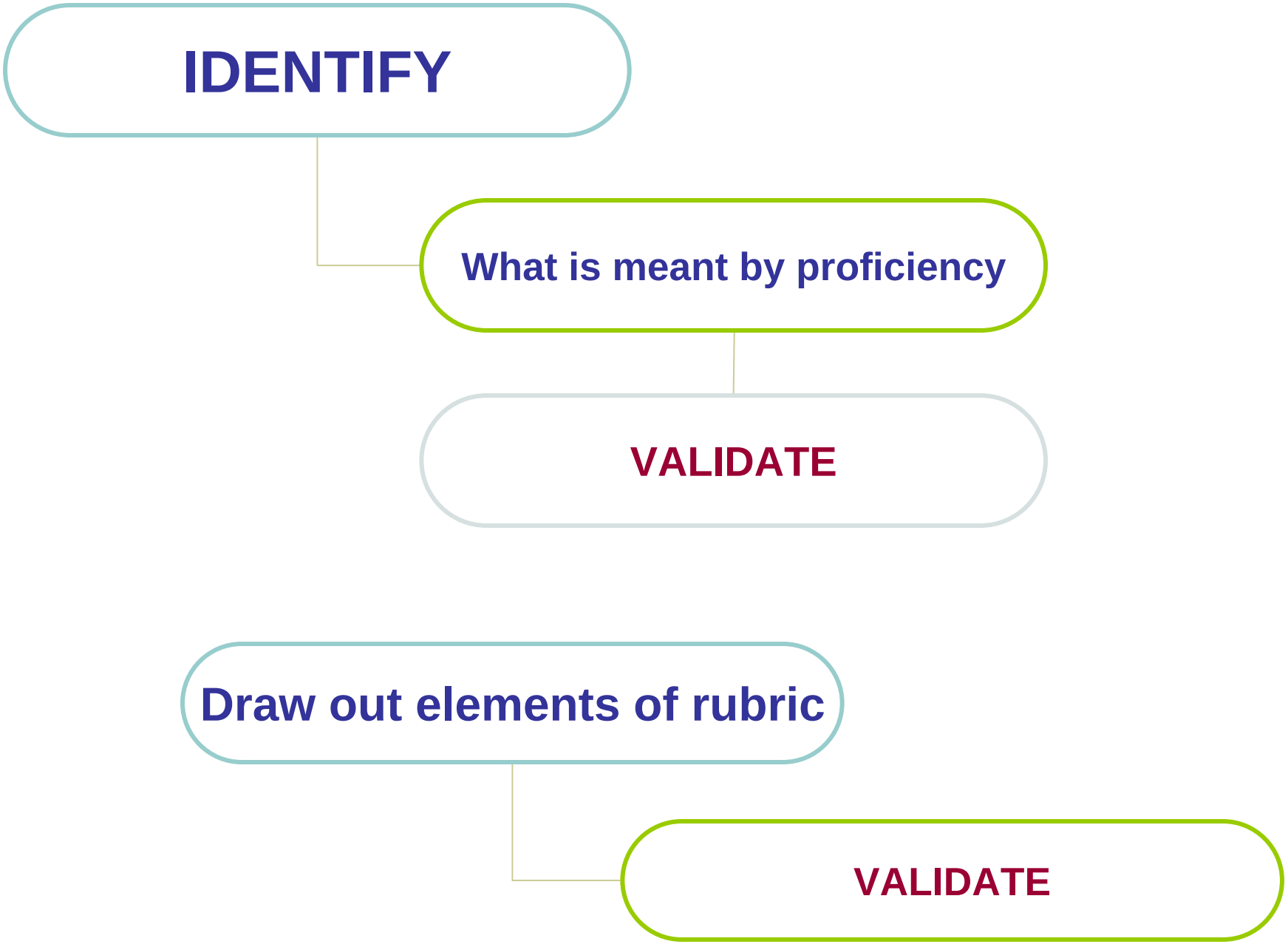
Most Frequent Complaints

- *Lack of personnel with "hands-on" experience and/or training.*
- *Persons with the best technological skills often leave for better-paying jobs.*

Where do you start?

Investigation of Evidence Rubric Development

INVESTIGATON OF EVIDENCE


IDENTIFY
What is meant by proficiency
VALIDATE
Draw out elements of rubric
VALIDATE

Finding Experts in Evidence Investigation

If someone you cared about was involved in an event that was being investigated, who are the people you would want involved in the investigation?

Who would you want on that investigation team?

Investigation of Evidence Rubric

Performance Elements	Level 1 Novice Measurement Criteria	Level 2 Approaching Proficiency Measurement Criteria	Level 3 Proficiency Measurement Criteria	Level 4 Above Proficiency Measurement Criteria
PE1: **Secure the crime scene.**			1. 2. 3. 4.	
PE2: **Examine & document crime scene.**			1. 2. 3. 4.	
PE3: **Collect & preserve evidence.**			1. 2. 3. 4.	
PE4:				

5 Ways to Use Investigation of Evidence Rubrics

1. Check for assessment gap between curriculum and proficiency level of rubrics
2. Benchmark **investigation of evidence** skills requirements against proficiency level of rubric
3. Observe students investigating evidence
4. Student self-evaluation: Circle what things they can do
5. Framework to review student output

Importance of Rubrics for LPSCS Training and Programs

- ✓ Clear & public expectations & standards:
  - No tricking the students
  - Students know in advance on what they will be assessed
- ✓ Not reliant on any one piece of software (ITAC)
- ✓ Anyone can succeed

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