

Training Cost Analysts

A Cohesive Pedagogical Framework for Success



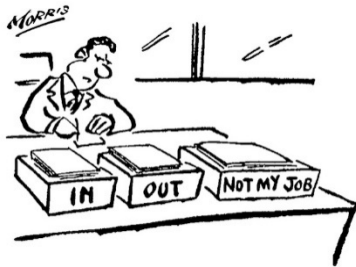
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ICEAA Workshop 2016
Atlanta, GA

The purpose of this effort was to identify: the current state of the Cost Analyst training program, the best practices in the industry, and training gaps.

Understand

Training Available



Best Practices (Industry and Research)



Assess

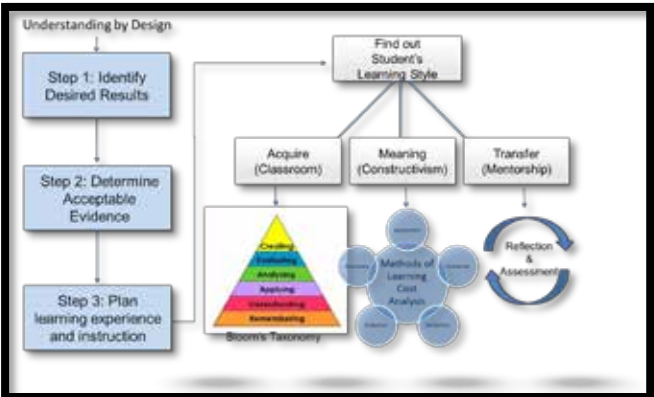
Required Skills



Gaps in Training



Recommendation



Combine information to produce a proposed pedagogical framework & recommendations

How do you Learn Cost Analysis?

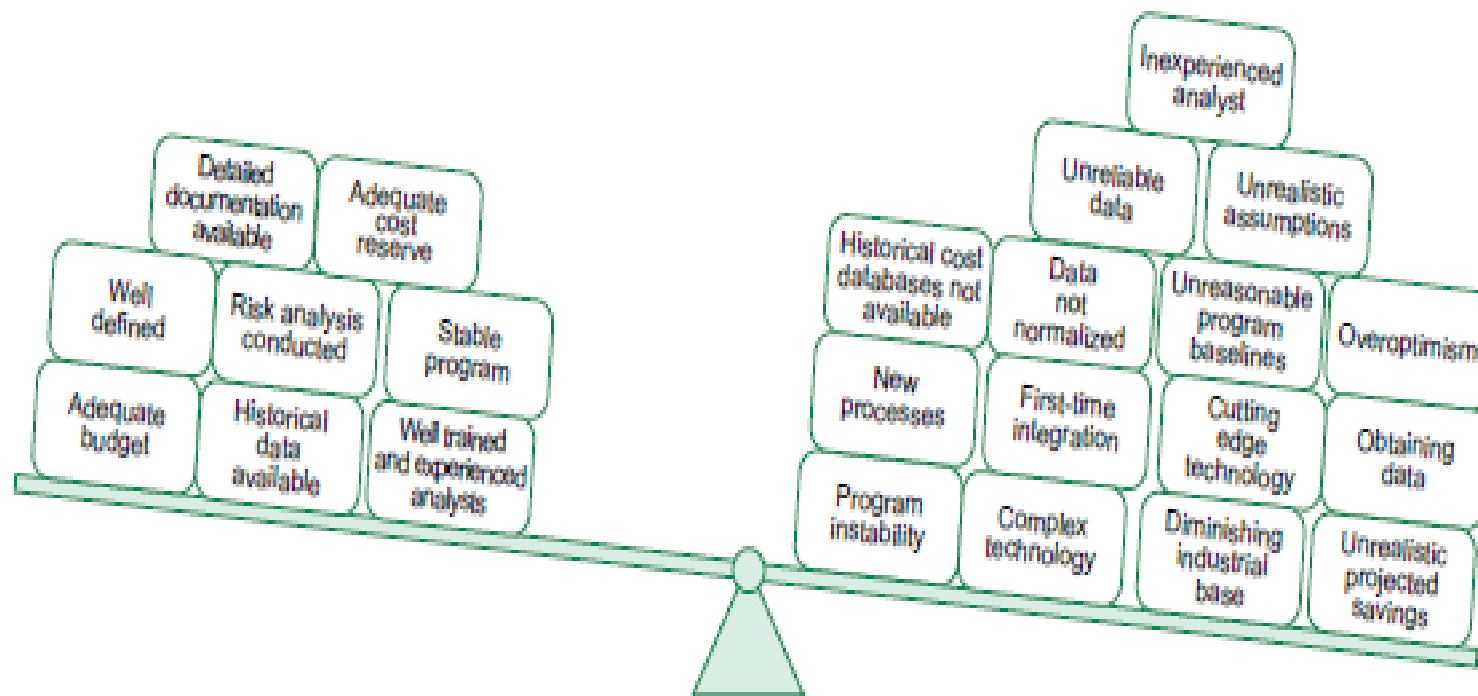
Field of Education	Percent
Business/Management	20%
Engineering	28%
Math/Statistics	11%
Economics	11%
Accounting/Finance	15%
Operations Research	5%
Computer Science/Information Systems	1%
Physical Sciences	2%
Other	7%

Current State/Challenges

– “Weather Man” analogy



Challenges Cost Estimators Typically Face



Source: GAO.

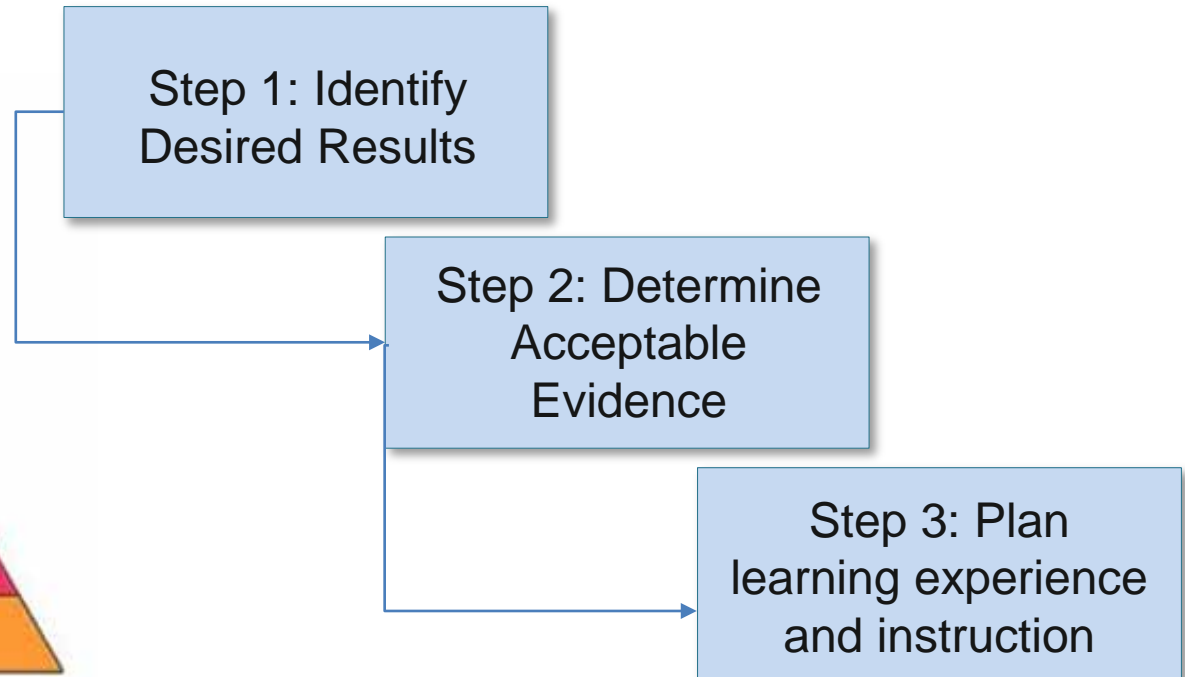
Academic Literature Review

- **Students learn by doing design/hands-on activities vs. traditional lectures (“Sage on the Stage”)**
- **Problem/Project based learning shows higher knowledge retention rates**
- **Constructivism – knowledge is learned through experience**
- **Continuous feedback and assessment, tailor to individual student’s learning style**
- **Cooperative/cross-functional team learning is integral to prepare students for the work force**

Pedagogical Frameworks



Bloom's Taxonomy



Understanding by Design

An understanding of what drives effective training is knowledge of positions, anticipated schedule, and data availability

Essential Question: Does current training meet training needs?

Survey Feedback

What we did: Conducted a Survey of ICEAA members

Purpose:

- Provide quantitative story on training drivers

Themes:

- On the job mentoring most profitable
- Computer Science/math and Statistics desired further training
- Recurring drivers stem from lack of on the job mentoring

Training Analysis

What we did: Reviewed CEBoK, DAU, CCEA and contractor training programs

Purpose:

- Identify available training and certification programs
- Tie the qualitative story to quantifiable events

Themes:

- Continuing education lacking
- Training to become future leaders/mentors lacking

Best Practices Analysis

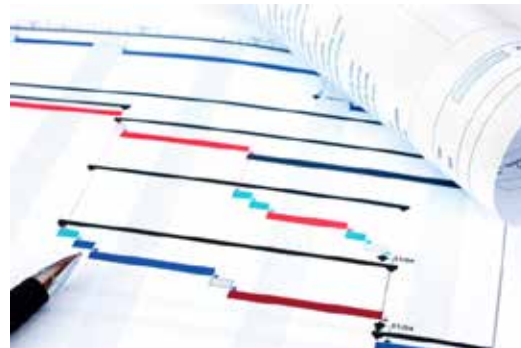
What we did: Studied policies and documents to understand best practices

Purpose:

- Determine framework and best practices
- Determine if policy roadmap is consistent with survey feedback

Themes:

- Framework provides applicable building blocks
- Few opportunities for continuing education



Initial Outputs

Phase 1 Data Collection

Survey

- Ø 73 ICEAA members
- Ø Top Issues
- Ø Pain Points
- Ø Roles/Responsibilities

Interviews

- Ø 15 cost analyst from O5C and Herren
- Ø Top Issues
- Ø Pain Points

Documentation

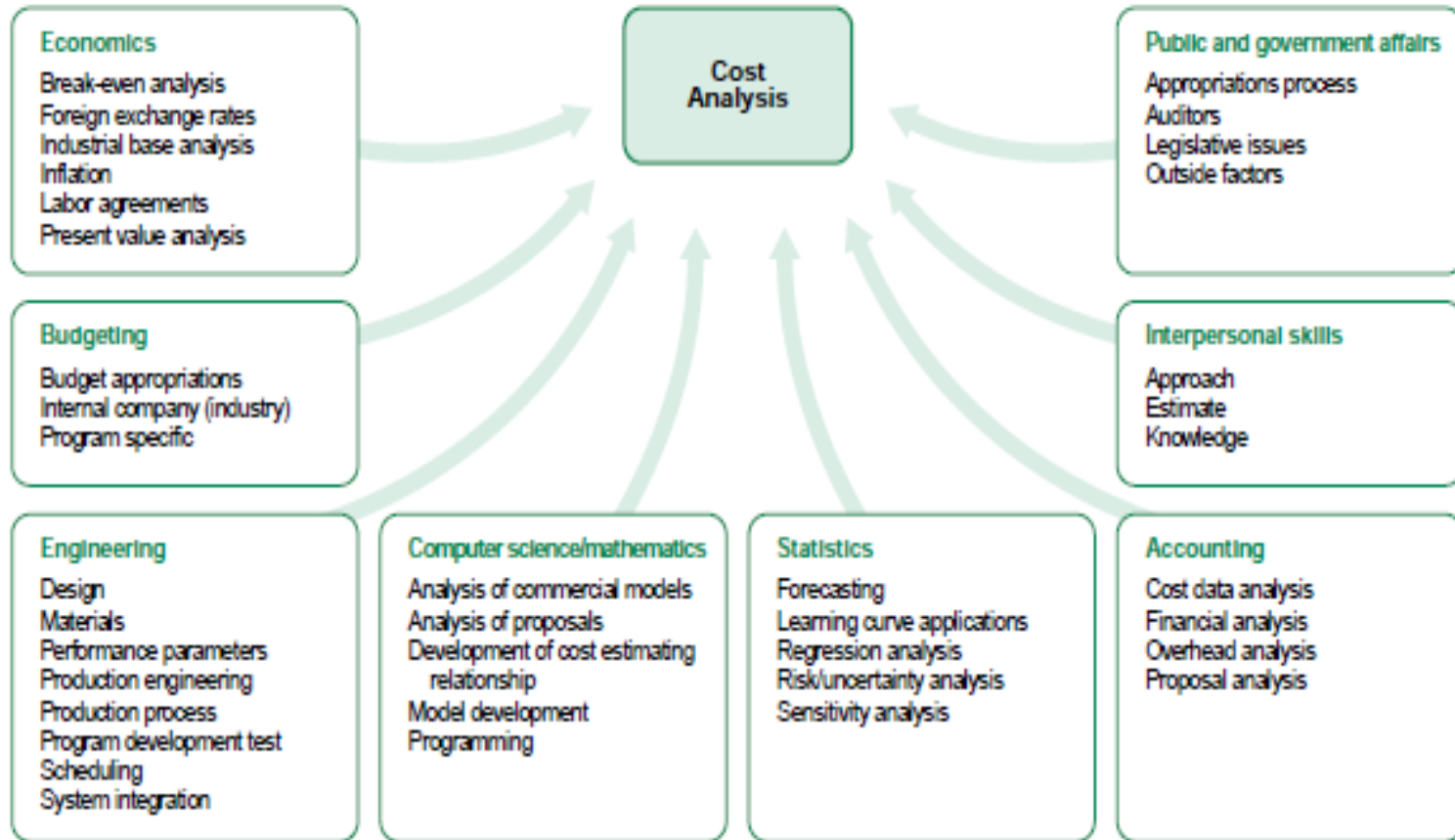
- Ø GAO Cost Guide
- Ø CEBoK

Round Two

Assessment

Feedback

Disciplines and Concepts in Cost Analysis



Source: GAO.

An questionnaire was developed as a guide to drive discussion about training for Washington Area Chapter ICEAA members

Key Questions



Most Profitable Training?



Gaps in Training?



Applicability of DAU?



Areas for Improvement?



Job Satisfaction?

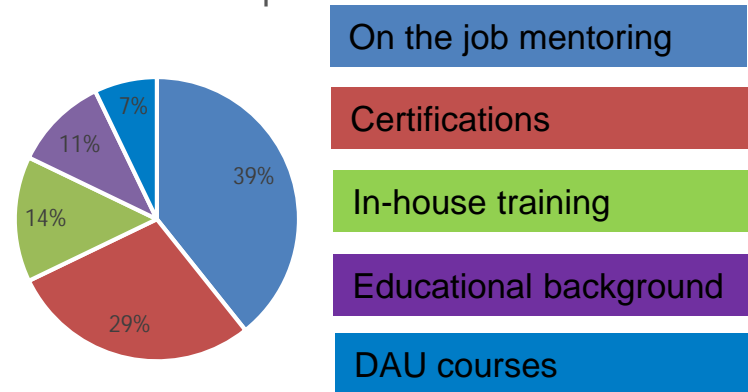
Survey Feedback: The goal of the survey process was to be able to tie anecdotal evidence to specific observed training gaps

Output

- § Formal classrooms have the least effect on overall learning
- § Mentorship has the greatest effect on overall learning
- § There is a desire for a collaborative/team environment between departments and organizations

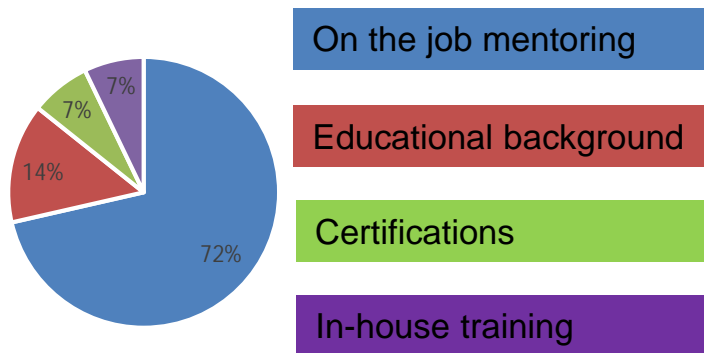
Preferences for 20+ years

Years of Experience: 20+



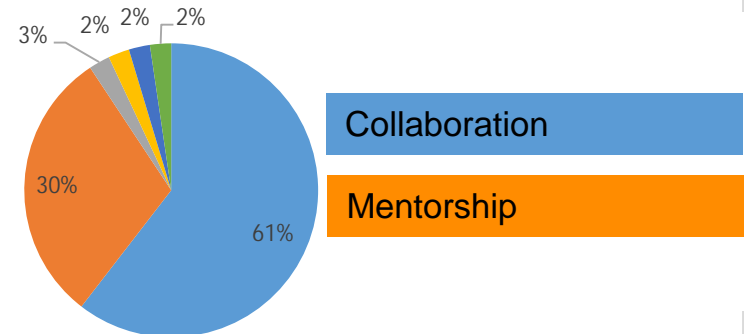
Preferences for 0-5 years

Years of Experience: 0-5



Area for Improvement

Greatest Area for Improvement



Common Themes - Interviews

Pressures that Limit Progress

- Ø Absence of continuing education
 - § Sources limited exclusively to ICEAA
- Ø Absence of leadership track
 - § Need future and leaders mentors
- Ø Lack of collaboration and understanding
 - § Cross-functional departments and agencies
- Ø Lack of on the job mentoring

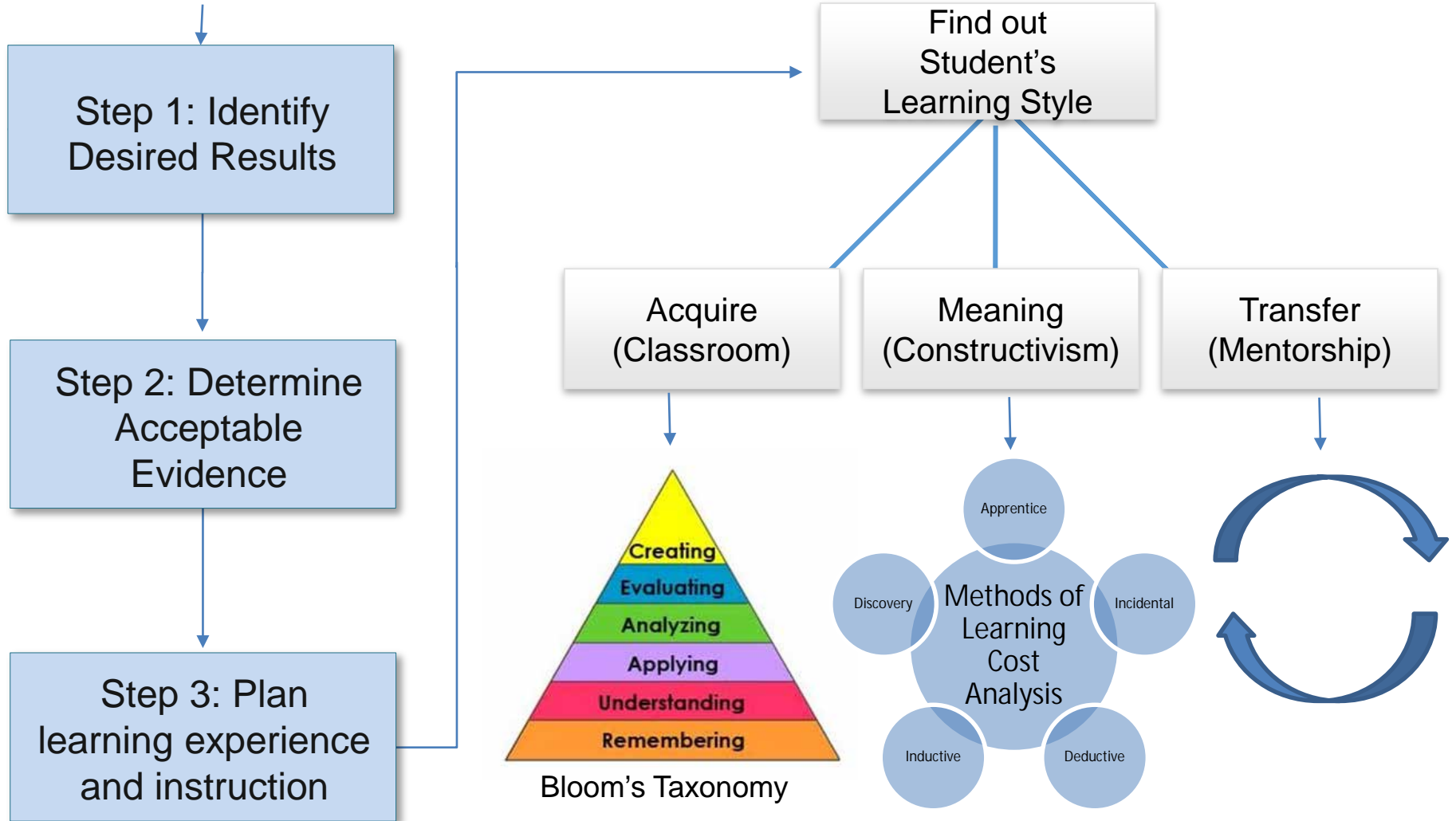
Common Themes - Interviews

Advice for Training

- Ø Two-week intensive course
 - § Create road-map with accompanied training
- Ø Increase job-specific training
 - Ø Continued training after basic is completed
- Ø Offer mentorship programs

Proposed Framework

Understanding by Design



Recommendations

Proposed Training Schedule for New Analysts

Future Work/Research

Questions?

Contact Us!

Backup

Citations List

http://www.defense.gov/pubs/2014_Estimated_Impacts_of_Sequestration-Level_Funding_April.pdf>.

<http://www.roe11.k12.il.us/GES%20Stuff/Day%204/Process/Blooms/Mary%20Forehand%20discussion-Bloom%27s%20Taxonomy.pdf>

Citations List (Part 2)

<https://www.engr.ncsu.edu/learningstyles/ilsweb.html>

[support-effective-teaching-and-learning/](#)

<http://nccscurriculum.org/2014/01/22/understanding-by-design-a-framework-to->

<https://www.engr.ncsu.edu/learningstyles/ilsweb.html>