Targeted Coaching Skills for Instructors Preparing a Diverse Technician Workforce

Webinar
February 26, 2020

SRI Education™
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Please use the chat window to ask questions

Complete our brief survey at the end, we want to hear from you
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atecentral.net/webinars
Introductions

Louise Yarnall, Ph.D
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Diego Navarro
Advisor; Emeritus, Cabrillo College
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Agenda

01 Introduction & Agenda 5 minutes
02 What the research says about coaching 15 minutes
03 Example 1: Classroom Coaching, ACE 15 minutes
04 Example 2: Workforce Coaching, CCSF 15 minutes
05 Closing Q&A 10 minutes
Project context

- Funded by National Science Foundation’s Advanced Technological Education (ATE) program, which supports technician education, particularly in community colleges

- This project was led by SRI Education, which is a division of SRI International, a nonprofit research institute based in Menlo Park, CA. SRI does work mostly funded by government grants and contracts. We partnered with Ann Beheler of Collin County College in Texas.
Quick Poll #1, Part 1

What do you do in workforce education?
[ ] Community college educator
[ ] Other educator (e.g. K-12, 4-yr. coll.)
[ ] Employer
[ ] Other – please describe in webinar comments
Quick Poll #1, Part 2

Do you specialize in a technical field? If so, which one?
[ ] Yes, Information technology
[ ] Yes, Advanced manufacturing
[ ] Yes, Biotechnology or biomanufacturing
[ ] Yes, something else – please specify in webinar comments
[ ] No, I do not specialize in a technical field
Why is coaching for diversity important?

- **Retirements & New Skills**
  - Labor shortages & Diverse recruitment
  - Working with people different from yourself

- **Rapid tech change**
  - Changes toward virtual communication
  - Working with people at a distance

- **Less job security**
  - Fluid workplace expectations
  - Working with those who have different work expectations
Our study focused on employability skills

- Built on this model from U.S. Department of Education
  - Applied Knowledge
  - Effective Relationships
  - Workplace Skills
- Our report may be found here:
  - employabilityskills.org
Five High-Priority Employability Skills for STEM Technicians

Essentials: For more info: https://www.necessaryskillsnow.org/2019SRI/

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Focused essentials for groups underrepresented in STEM fields

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What Our Interviewees said: Targeted Coaching Needs

Relationship Building

- **Watch stereotypes:** “For the most part, physically, anyone can do this work, but there is still a perception that this is a man’s job...Women can be just as good...Usually when they come out of the training, they are confident and ready to build a career up in this industry.” -- Advanced Manufacturing Employer 17

- ** Communicate clearly about life challenges:** “Being able to adapt – if you have no flexibility with childcare, what do you do?” – Advanced Manufacturing Educator 7
What Our Interviewees said: Targeted Coaching Needs

Personal Qualities

▪ **Lifelong learning to build confidence**: “They can see that they are doing just as well as the person next to them. They get the confidence as they are working on different hands-on projects...” – Advanced Manufacturing Employer 17

▪ **Watch assumptions about “work ethic”**: “[Instructors] need to understand the issues affecting the students ... staff must have empathy, insight, and an understanding of ... cultural awareness and social justice matters.” – Advanced Manufacturing Educator 3
What Our Interviewees said: Targeted Coaching Needs

Business Fundamentals

Reframing the mission of technician work to build appeal: “We need some way to take the STEM component and make it not such a focus on STEM itself, but on the career opportunity for [women/diverse learners] in the technical field...” – IT Employer 16
Quick Poll #2

What diversity programming does your organization offer?
[ ] Understanding implicit bias, stereotyping
[ ] Sensitive communication strategies
[ ] Targeted career promotion programs
[ ] Backup transportation, childcare, counseling
[ ] Special interest groups, clubs, outreach, recruitment
[ ] Other – please describe in webinar comments
[ ] None
How do people learn employability skills?
Key themes on how such skills develop

**Learners:**
- It takes time and practice
- You may encounter those who think if you’re not born with these skills, you cannot do them
- This isn’t accurate. You can learn them at any time

**Coaches:**
- Coaching can and should happen at any time
- Coaching around these skills can be intimidating; it’s important to support educators and managers who do the coaching
- More should be done to foster a “partnered” approach between education and industry
Quick Poll #3

How comfortable do you, OR those who support, feel coaching learners around diversity awareness and skills?

[ ] Very comfortable
[ ] Somewhat comfortable
[ ] Somewhat uncomfortable
[ ] Very uncomfortable
[ ] Don’t know or not applicable
A Better Way: Collaborate and Coordinate Employability Skills Development
How to teach and learn these skills?
Using learning principles to build diversity skills

- Confront Misconception and Explain
- Reflect and Grow
- Play
- Practice
- Support
Our website offers examples

- We will post this webinar for reference
- We will link to other useful resources for diversity coaching

**Promoting Employability Skills**

Educators and employers described the need to provide more targeted strategies to prepare underrepresented technicians for the experiences they will face. Based on these findings, the research team tailored the employability skills (see table below) and reframed how the learning principles and the developmental model can support targeted diversity coaching. To help designers of diversity coaching programs, a February 26, 2020 webinar presents the overall approach along with two exemplar programs. A link to the webinar recording will be posted here along with a set of additional materials from ATE programs by March 31, 2020.

**THE FIVE FOCUSED ESSENTIAL EMPLOYABILITY SKILLS SUPPORTING HISTORICALLY UNDERREPRESENTED POPULATIONS IN TECHNICIAN FIELDS**

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Preparing a Diverse Workforce

Diego Navarro
ACE Founder, Senior Fellow-WGU Labs, Professor Emeritus - Cabrillo College
Discussion Outline

1. Needs of Diverse Workforce
2. ACE Model for CTE Programs
3. Evidence of Effectiveness:
   - Increase in Salaries & Psychological Factors
4. Why ACE works
Sabbatical Research on Affective Theories

Diego Navarro, Visiting Scholar, 2016

Carnegie Foundation for the Advancement of Teaching at Stanford
Finding 1: Poverty and Stress
Sabbatical Research Carnegie Foundation for the Advancement of Teaching

- High Stress Backgrounds Create Physiological, Emotional and Academic Challenges
- Human stress response system’s sensitivity is developed during childhood
- Experience of chronic scarcity creates cognitive overload and results in chronic stress
- Chronic stress has an effect on academic performance
- Affective learning approaches mitigate these issues
Children Living in Poverty in the U.S.  
(from 2010 census data)

In 2010

- 37.3% of poor children were Latino,
- 30.5% were white and
- 26.6% were black

according to an analysis of data from the U.S. Census Bureau by the Pew Hispanic Center, a project of the Pew Research Center.

Finding 1: Poverty and Stress
Sabbatical Research Carnegie Foundation for the Advancement of Teaching

- High Stress Backgrounds Create Physiological, Emotional and Academic Challenges
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- Chronic stress has an effect on academic performance

Affective learning approaches mitigate these issues
Brain, Poverty, and Trauma Axis

Adrenal Cortex/Cortisol mediate:

- Cardiovascular adaption
- Vigilance
- Catabolism
- Immune suppression
- Growth suppression

Modulates and inhibits HPA Axis

Image source: Murgatroyd C and Spengler D (2011)
https://commons.wikimedia.org/wiki/File:Hypothalamo%E2%80%93pituitary%E2%80%93adrenal_(HPA)_stress_axis.jpg
Finding 1: Poverty and Stress
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Photo by Eye for Ebony on Unsplash
Finding 2: Faculty and Student Success
Sabbatical Research Carnegie Foundation for the Advancement of Teaching

- Students’ experience powerlessness in face of authority
- Punitive discipline has negative impact
- Faculty need to avoid “attribution errors”

- Affective approaches increase the quality of teacher-student relationships:
  - They build mutual respect, understanding and trust
Finding 2: Faculty and Student Success
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Finding 3: Belonging, Autonomy, and Growth
Sabbatical Research Carnegie Foundation for the Advancement of Teaching

- Most effective education for community college students
  - Social belonging, autonomy and feeling competent
  - Social belonging strongest predictor

- Paradoxical effect
  - Student misbehavior leads to more control and diminishes feeling of autonomy & damages student/teacher relationships
  - Limited connection with peers diminishes belonging

- Teachers can create environments conducive to connection and engagement by moving beyond cognitive and seeing students holistically

Feelings of Belonging

Leads to Autonomy

Promotes Growth
Quick Poll #1 -- Diego Presentation

Your interest in learning more about Affective theories and practices?
[  ] Very Interested
[  ] Interested
[  ] Not Interested
[  ] Not Sure

For Diego’s research report email: Diego.James.Navarro@gmail.com
Discussion Outline

2. ACE Model for CTE Programs
ACE Affective Support Model for CTE Students

Prepare Students for Affective Success
“21st Century Professional Skills”

ACE Foundation Course 1-Week Intensive on 21st Century Prof. Skills

2 credits

Student Cohort

CTE Program

8 to 15 credits
Discussion Outline

3. Evidence of Effectiveness:
   - Increase in Salaries & Psychological Factors
CTE/Nursing Wage Outcomes

Post 6 year median wages
ACE Nurse: 84,077
Pre-ACE Nurse: 44,853

Difference in Annual Mean Salary

<table>
<thead>
<tr>
<th>Before year 1</th>
<th>Year 1</th>
<th>Year 2</th>
<th>Year 3</th>
<th>Year 4</th>
<th>Year 5</th>
<th>Year 6</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pre-ACE Nursing*</td>
<td>$(5,100)</td>
<td>$(6,524)</td>
<td>$(6,918)</td>
<td>$(7,611)</td>
<td>$(503)</td>
<td>$(5,349)</td>
</tr>
<tr>
<td>ACE Nursing*</td>
<td>$(9,998)</td>
<td>$(9,832)</td>
<td>$(18,183)</td>
<td>$(6,518)</td>
<td>$(33,939)</td>
<td>$(42,625)</td>
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*Matched Pairs
Study Conclusions

• Adding the Foundation Course to CTE programs enhance academic and wage outcomes

• ACE approach boosts potential in earnings over time for all students, but especially for males of color and underrepresented minorities
Survey responses were based on a five-point scale, from “strongly disagree to strongly agree” for the non mindfulness items and from “never or very rarely true” to “always or almost always” true for the mindfulness items.
Affective-Learning approaches improves psychological outcomes

- Students improved in 7 of the 8 psychological factors after the two-week *Foundation of Leadership Course* (FC)

- With the exception of two factors, the change remains consistent or improved four months later (at the end of the semester)
Discussion Outline

1. Needs of Diverse Workforce
2. ACE Model for CTE Programs
3. Evidence of Effectiveness:
   • Increase in Salaries & Psychological Factors
4. Why ACE works
Quick Poll #2 -- Diego Presentation

What affective Professional Development topics interest you?
[  ] Increasing persistence of diverse student populations
[  ] Student Equity -- Meeting diverse students needs
[  ] Theories of affective learning & adaptive mindset skills
[  ] ACE’s 1-week CTE course on 21st Century Professional Skills
[  ] All the above

For more info. on Prof. Dev. email: Diego.James.Navarro@gmail.com
Q & A
Evolving Work-Based Learning Program

Technical Skills Training

Work-Based Learning (Internship)

Employability Skills & Support Course

Skilled Work-Based Learning/Internship Mentor

Work-based Learning Relationship Foundational to Student Success

How do we get more skilled mentors?
CCSF-UCSF Mentor Training Team

Laurence Clement, PhD
Director, Research in Career Education
UCSF Office of Career and Professional Development

James B. Lewis
Program Director/Bridge to Biosciences
City College of San Francisco

Naledi Saul, MPM
Director
UCSF Office of Career and Professional Development

Karen Leung, PhD
Biotechnology Faculty & Internship Coordinator
City College of San Francisco
UCSF-CCSF Mentor Training Workshops: TRAIN-UP

Workshop 1 - Mentoring & Supervising 101
Being an effective mentor and supervisor

Workshop 2 - Supervising People Who Aren’t You
Creating a positive work environment for all trainees

Workshop 3 - Identifying the Right Candidates for Your Team
How to strategically select candidates to reach your goals

Workshop 4 - Evaluating performance
How to evaluate performance as a new supervisor and mentor
### Inclusive & Effective practices for Internship Mentors & Employers

<table>
<thead>
<tr>
<th>Practice</th>
<th>Description</th>
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<tbody>
<tr>
<td>Mitigate bias in hiring/selecting</td>
<td>Set clear expectations</td>
</tr>
<tr>
<td>Provide equitable access to resources and support</td>
<td>Evaluate progress systematically</td>
</tr>
<tr>
<td>Provide regular, actionable feedback</td>
<td>Be transparent about rewards and consequences</td>
</tr>
<tr>
<td>Manage conflict (culture, values and behaviors)</td>
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</tbody>
</table>

Create an inclusive culture that takes into account work styles and learning styles, cultural backgrounds, lifestyle and responsibilities, cultural and social capital.
### Employability Skill Alignment

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[Image of a group of people working together]
Internship Support Course
Mentor Training Workshops

Trainings & Tools Implemented & Assessed

Intern-Mentor Issue Arises
Issue Discussed with CCSF-UCSF Collaborative Team

Trainings & Tools Developed to Address Intern-Mentor Issues

Current Frameworks & Tools Examined for Actionable Response

Employability Skill Training Development
Backward Design for Expectation Setting for Mentors/Employers

- What does your intern need to do well by the end of their internship for you to feel confident recommending them to another lab, an employer or an educational program?

- How will you and your intern know they have attained this expectation/goal? How will you measure their success?
  - Specifically, if you were to have them prove to you and themselves that they can achieve a certain level of expertise or mastery for a specific skill, what would you ask them to say or do?

- How will you directly assess your intern’s baseline level of competency with this expectation/goal at the beginning of the internship?
  - Specifically, how will you determine what they do and do not already know/have the skills/ability for in relation to this expectation/goal?

- What will you do to help the trainee reach this expectation/goal from their baseline level?
  - Consider a variety of resources: videos, articles, discussions, mini presentations, providing examples (consider what you know about your intern’s learning and work styles to best assess what teaching, training or resources might be best - if you don’t know, just ask!)
## Backward Design for Expectation Setting for Mentors/Employers

<table>
<thead>
<tr>
<th>Goals/Expectations:</th>
<th>Conceptual Knowledge</th>
<th>Technical Skills</th>
<th>Performance</th>
<th>Professional Skills and Attitudes</th>
</tr>
</thead>
<tbody>
<tr>
<td>What final goal would you like your trainee to reach?</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Start the sentence with &quot;Be able to...&quot;</td>
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**Evaluation:**
(**Measure of success**)  
How will you and the trainee know they have attained this goal?

**Assessing baseline level:**  
How will you directly assess the trainee’s level of competency before they start?

**Teaching Strategy/ Support:**  
What will the mentor do to help the trainee reach the goals/expectations from their baseline level?
Becoming an Inclusive & Effective Mentor Requires

1. learning about mentoring best practices

2. applying best practices in an experiential setting

3. reflecting on mentoring experiences, applying best practices on real case studies

Goal: Becoming an effective and inclusive mentor for all trainees

Support & Recognition: CCSF-UCSF Inclusive Mentoring Fellows Program

TRAIN-UP Mentoring Workshops
Communicating the Value of Employability Skills

**Being an Effective & Inclusive mentor means:**

- Building strong working relationships that accommodate & value diversity
- Retention & Success for all trainees/employees
- Increased productivity
- Skills they can communicate in their next review or interview
Q & A
Resources

- **SRI Website**: employabilityskills.org
  - louise.yarnall@sri.com
- **CCSF Website**: career.ucsf.edu/NSFATE2018
  - karen.leung@mail.ccsf.edu
- **ACE Website**: academyforcollegeexcellence.org
  - diego.james.navarro@gmail.com
Grant Information

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- Any opinions, findings, and conclusions or recommendations expressed in this material are those of the author(s) and do not necessarily reflect the views of the National Science Foundation.
Evaluation Link

Please help us improve our work by filling out a brief survey:

https://sriedu.quickbase.com/db/bp5g3v8fi?a=nwr