Getting Hired: How the University of California Prepares Students for the Workforce
Changing Role of Education in the 21st Century

Historically,
- Universities were proud of their educational past
- Described as “a city of intellect” (Clark Kerr, 1962)
- Focus on learning, knowledge development and creation

In the 21st Century,
- Global economies brought new expectations
- Singular focus on knowledge is no longer adequate
- Universities are urged to transform themselves
- Expect a broader perspective of education with multiple dimensions of learning and experience
Multiple Purposes of an Undergraduate Education

• The broader perspective of universities should include six dimensions (SPACES*):
  - Social skills development,
  - Personal development,
  - Academic knowledge and cognitive skills,
  - Civic engagement,
  - Economic opportunities and careers preparation, and
  - Settings for inclusiveness.

• Cultivate breadth of skills

*Research University Spaces: The Multiple Purposes of an Undergraduate Education (Steven Brint, 2015)
What are soft skills?
What Are Soft Skills

- Personal attributes, ability to interact with others
- A complement to hard skills, enhance job performance

- People skills, transferable skills, work-readiness skills, corporate skills, etc.
- Communication abilities, leadership traits, teamwork, personal and social graces.
## Literature Review on Soft Skills

### Soft skills Defined by Employers (Comparisons)

<table>
<thead>
<tr>
<th>Soft skills definition</th>
<th>UCUES Survey</th>
<th>Career Builder Survey (Harris Poll)</th>
<th>Eastern Kentucky University</th>
<th>Economist Intelligence</th>
<th>Closing the Gap Companies &amp; Colleges</th>
<th>Educational Resources Information Center</th>
<th>Hart Research College Learning &amp; Career Success</th>
<th>Michigan State What's Important to New Graduates</th>
<th>(NACE) Job Outlook</th>
<th>United States Department of Labor</th>
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</table>
Popular Soft Skills Aligned with UCUES

- Social & Interpersonal Skills
- Critical thinking & Problem Solving Skills
- Verbal & written Communication Skills
- Intercultural skills
- Leadership Skills
The Current Study: research questions and methods
Research Questions

• How do UC students rate their soft skills?

• Do UC students report changes in their soft skills by senior year?

• Are student extracurricular activities associated with soft skills development for UC students?

• Do self-reported student soft skills relate to future earnings?
Data Sources

• The University of California Undergraduate Experience Survey (UCUES)
  • 2008 UCUES senior class (N=8,168)
  • 2008 Exit cohort (N=5,633; freshman only)
• California Employment Development Department Earnings Data (EDD)
• University of California administrative data
  • Undergraduate Admissions
  • Student Success
Demographics

Gender
- Female: 37%
- Male: 63%

Race/Ethnicity
- American Indian: 42%
- Asian/Pacific Islander: 1%
- Chicano Latino(a): 7%
- International: 10%
- Other: 0%
- Unknown: 0%
- White: 37%
- African American: 2%
How do UC students rate their soft skills?
### Percentage of UC Seniors in 2008 Rating Themselves Higher, Lower, or the Same in Soft-Skill Proficiency Since Freshman Year, by Area

<table>
<thead>
<tr>
<th>Skill</th>
<th>Gain Skills</th>
<th>No Change</th>
<th>Lose Skills</th>
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<tbody>
<tr>
<td>Analytical and critical thinking</td>
<td>77%</td>
<td>21%</td>
<td>2%</td>
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<tr>
<td>Understanding international perspectives</td>
<td>74%</td>
<td>24%</td>
<td>2%</td>
</tr>
<tr>
<td>Other research</td>
<td>69%</td>
<td>31%</td>
<td>0%</td>
</tr>
<tr>
<td>Be clear and effective when writing</td>
<td>68%</td>
<td>26%</td>
<td>6%</td>
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<tr>
<td>Library research</td>
<td>67%</td>
<td>31%</td>
<td>2%</td>
</tr>
<tr>
<td>Prepare and make a presentation</td>
<td>63%</td>
<td>35%</td>
<td>2%</td>
</tr>
<tr>
<td>Interpersonal/social</td>
<td>62%</td>
<td>33%</td>
<td>5%</td>
</tr>
<tr>
<td>Leadership</td>
<td>60%</td>
<td>34%</td>
<td>6%</td>
</tr>
<tr>
<td>Understanding of personal social</td>
<td>56%</td>
<td>42%</td>
<td>2%</td>
</tr>
<tr>
<td>Appreciate cultural and global diversity</td>
<td>49%</td>
<td>48%</td>
<td>3%</td>
</tr>
<tr>
<td>Appreciate, tolerate, and understand</td>
<td>46%</td>
<td>48%</td>
<td>6%</td>
</tr>
<tr>
<td>Speak clearly and effectively in English</td>
<td>38%</td>
<td>59%</td>
<td>3%</td>
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</table>

ns = 7,987-8,062
Average Starting and Ending Skill Level
Measurement of Soft Skills from UCUES data

• Problem-Solving
  • Analytical and critical thinking
  • Library research skills
  • Other research Skills

• Communication
  • Ability to be clear and effective when writing
  • Ability to speak clearly and effectively in English
  • Ability to prepare and make a presentation

• Interpersonal / Social
  • Leadership
  • Interpersonal (social)
  • Understanding the importance of personal social responsibility

• Intercultural Competency
  • Understanding international perspectives
  • Ability to appreciate, tolerate, and understand racial and ethnic diversity
  • Ability to appreciate cultural and global diversity
Factor Analysis of Soft Skills in 2008 UCUES

• Constructed four soft-skills factors based on the theoretical framework using UCUES data (N = 31,228)

• Used Cronbach’s alphas to check the internal consistency of the items within each factor. (α = .7 – .72)

• For easier interpretability, created Time 1 and Time 2 weighted average scores for each factor based on factor analyses.

• The weighted average score ranged from 1 to 6, the scale for the original variables. (1=Very poor, 2=Poor, 3=Fair, 4=Good, 5=Very Good, 6=Excellent)
Average Starting and Ending Skill Level

[Graph showing the average starting and ending skill levels for various skills such as analytical & critical thinking, non-library research, presentation, leadership, understanding international perspectives, tolerating and understanding racial/ethnic diversity, appreciating cultural and global diversity, personal social responsibility, and speaking clear, effective English.]
Average Starting and Ending Skill Level

Average Self-Reported Skill Level When Freshmen Began at UC

Excellent

Very Good

Good

Fair

analytical & critical thinking
presentation
understand international perspectives
non-library research
library research

social

leadership

tolerate and understand racial/ethnic diversity
appreciate cultural and global diversity
personal social responsibility

speak clear, effective English

UNIVERSITY OF CALIFORNIA
11/13/2017
Problem-Solving Skills

Analytical and critical thinking; Library research skills; Other research Skills

Perceived Skill Level When Starting at UC

- very poor
- poor
- fair
- good
- very good
- excellent

Perceived Skill Level in Senior Year

- very poor
- poor
- fair
- good
- very good
- excellent

Larger Gains for:
- Women
- URM
- Non-STEM
Interpersonal Skills

Leadership; Interpersonal; Understanding the importance of personal social responsibility

Larger Gains for:
- Women
- URM
- Non-STEM
Communication Skills

Clear and effective writing; clearly and effective spoken English; prepare and make a presentation

Larger Gains for:
- Women
- URM
- Non-STEM
Intercultural Competency Factor

Understanding international perspectives; Ability to appreciate, tolerate, and understand racial, ethnic diversity; Ability to appreciate cultural and global diversity

Larger Gains for:
✓ Women
✓ URM
✓ Non-STEM
Perceived Skill Levels by Factor

Freshman and Senior Year

Perceived Skill Level When Starting at UC

P = Problem Solving
S = Social/Interpersonal
C = Communication
D = Diversity
Are Student Activities Associated with Soft Skills Development?
Soft Skills Development

Started at UC
- Soft skills overall
- Problem-solving skills
- Interpersonal skills
- Communication skills
- Intercultural Skills

Graduating from UC
- Soft skills overall
- Problem-solving skills
- Interpersonal skills
- Communication skills
- Intercultural Skills

Undergraduate Experiences

Yes/No
- Academic activities outside of class
- Community or volunteer activities
- Student Club or organization
- Physical exercise or recreational sports

Other campus & life experiences
Comparing students with and without Frequent academic activities

• Directly compare soft skills between students with and without frequent student activities by different starting levels.

• To make a simple straightforward comparison, we:
  - Dichotomized student participation
    (‘<=5 hour’ = Not Frequent, ‘>5 hour’ = Frequent)
  - Three study populations with different starting skills (Low/Medium/High)
  - No control over student demographics
    (age, gender, ethnicity, first-generation status, campus, and discipline.)
## Comparing students with and without Frequent academic activities

<table>
<thead>
<tr>
<th>Starting Level</th>
<th>Skill Dimension</th>
<th>Frequent</th>
<th>Not Frequent</th>
<th>Gap</th>
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<tr>
<td>Low Starting Skill</td>
<td>Softskill Overall</td>
<td>4.51</td>
<td>4.35</td>
<td>0.16</td>
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<tr>
<td></td>
<td>Problem-solving</td>
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<td>4.19</td>
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<td>Medium Starting Skill</td>
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<td></td>
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<td>5.24</td>
<td>5.20</td>
<td>0.04</td>
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</tbody>
</table>

- Participating in frequent academic activities made the biggest difference in students who started with low soft skills.
- The biggest difference was presented in problem solving skills.
- Students who participated in frequent academic activities reported higher soft skills in all dimensions.

**Notes:**

- 1=Very poor, 2=Poor, 3=Fair, 4=Good, 5=Very Good, 6=Excellent

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**Comparing students with and without Frequent academic activities**

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Summary of the Comparison Analysis

• Directly shows the difference in perceived soft skills

• Limitations of the comparison analysis
  - Dichotomized student participation in the activities (F/NF)
  - Starting skills were grouped into three levels (L/M/H)
  - No control over student demographics (age, gender, ethnicity, etc.)

• Regression analysis
  - Eight frequency categories of student participation
    1=0 hours, 2=1-5 hours, 3=6-10 hours, 4=11-15, 5=16-20, 6=21-25, 7=26-30, 8=More than 30
  - Six original levels (1-6) of starting skills
  - Six student demographics (age, gender, ethnicity, first-generation, discipline, campus.)
## Regression Analyses

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<th>Communication</th>
<th>Intercultural</th>
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<td>0.03*</td>
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<tr>
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<td>0.04**</td>
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</tbody>
</table>

**p<0.01  *p<0.05**
Summary of Regression Analyses

The diagram shows the standardized coefficients for different types of activities. The x-axis represents different categories of activities: Academic activities outside of class, Community service or volunteer activities, Student clubs or organizations, and Physical exercise or recreational sports. The y-axis represents the standardized coefficient.

- **Problem-solving** is represented by orange bars.
- **Interpersonal** is represented by blue bars.
- **Communication** is represented by green bars.
- **Intercultural** is represented by purple bars.

The highest standardized coefficient is observed for Student clubs or organizations, with Interpersonal activities having a notably high coefficient compared to the other categories.
Do Soft Skills Translate into Higher Earnings?
Earnings Model Specification

• Dependent variables: Log earnings (two, four and six years after graduation)

• Predictor variables
  • Entry year
  • Demographic controls (age, gender, race/ethnicity)
  • Academic (discipline and graduating GPA)
  • Employment sector
  • Time two soft skills (all) or
  • Time two Interpersonal, problem solving, intercultural and communications skills
Interpersonal skills are related to an increase in earnings.

- Intercultural: -8.2% increase
- Communications: 1.6% increase
- Interpersonal: 8.8% increase
- Problem Solving: 4.8% increase
- Soft Skills: 9.8% increase

Earnings six-years after graduation (N=5,901)
Earnings four-years after graduation (N=5,765)
Earnings two-years after graduation (N=5,901)
### Interpersonal Skills and Earnings

<table>
<thead>
<tr>
<th>Time After Graduation</th>
<th>Earnings Increase</th>
</tr>
</thead>
<tbody>
<tr>
<td>Two years after graduation</td>
<td>$3,017</td>
</tr>
<tr>
<td>Four years after graduation</td>
<td>$6,907</td>
</tr>
<tr>
<td>Six years after graduation</td>
<td>$4,544</td>
</tr>
</tbody>
</table>
Conclusions
Conclusions

✓ Ratings indicate that more students gain skills while at UC in analytical and critical thinking than in any other area.

✓ Student activities positively associated with development of soft skills in all dimensions, especially social and interpersonal skills.

✓ Interpersonal skills are associated with an increase in earnings after graduation.
Some Examples:

- UC San Diego offers quarterly personal skills development workshops
- UCLA Bruin Development Academy
- UC Berkeley’s Undergraduate Student Learning Initiative encompasses both hard skills and soft skills
- UC Riverside’s R’Success workshops
- UC Santa Barbara’s Career Center workshops
Thank You!

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