3-3-2017

Examining the Correlation Between Professionalism and Quality of Life in Computer Science Careers

Aditi Shrestha
Southwestern Oklahoma State University

Jeremy Evert
Southwestern Oklahoma State University, jeremy.evert@swosu.edu

Abstract

Advances in technology are changing life. Exciting careers in STEM related fields, especially Computer Science, are key enablers of these advancements. However; there is a concern that a low quality of life in Computer Science careers may be leading to too few programmers pursuing these careers, with especially low representation amongst females. One indication of this is the gender gap in University degrees granted to females, where half of... **Read More**

Follow this and additional works at: https://dc.swosu.edu/cpgs_edsbt_bcs_student

SWOSU

COLLEGE OF PROFESSIONAL & GRADUATE STUDIES

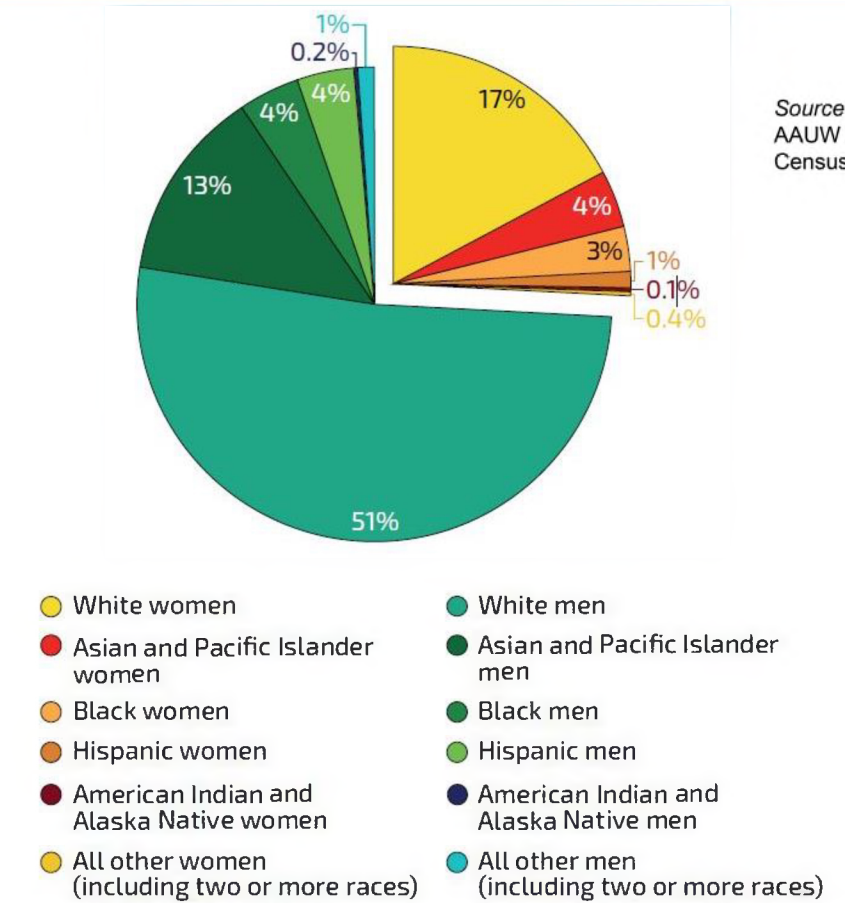Aditi Shrestha | Dr. Jeremy Evert | Department of Computer Science

Abstract

Advances in technology are changing life. Exciting careers in STEM related fields, especially Computer Science, are key enablers of these advancements. However; there is a concern that a low quality of life in Computer Science careers may be leading to too few programmers pursuing these careers, with especially low representation amongst females. One indication of this is the gender gap in University degrees granted to females, where half of college grads are women but only 25% of Computer Science degrees are granted to women. This research reviews literature related to measures of professionalism and quality of life across careers, including average wages, age, length of career, work-life balance, upward mobility, support for professional accreditation, and gender equality, and looks for correlation between measures of quality of life. This research examines the hypothesis that increased professionalism in the Computer Science career could lead to a higher quality of life, as measured by average age, career length, salary, and gender gab size. One of the best example of professionalism would be "ACM Code of Ethics and Professional Conduct" adopted by ACM Council in 1992. Although many people and organizations have talked about professionalism in Computer Science field, few official standards of conduct are officially implemented. The research goal is increased awareness of the value of professionalism and discipline, especially for career Computer Scientists.

Bachelor's Degrees Earned by Women, Selected Fields, 1970-2013

Note: "All science and engineering" includes biological and agricultural sciences; earth, atmospheric, and ocean sciences; mathematics and computer science; physical sciences; psychology; social sciences; and engineering.
Source: AAUW Report (Corbett & Hill 2015) from L.M. Frehill analysis of data from National Science Foundation, Division of Science Resources Statistics (2013), and National Science Foundation, National Center for Science and Engineering Statistics (2014a)

What and Why of Professionalism

- What: "Professionalism refers to the mindset with which individuals view their occupation. Occupation professionalism is associated with membership in specific group defined by shared knowledge and experience, such as the legal, medical, or IT fields. Professionalism is in fact a sense of higher standards and beliefs towards work in the occupation and how it should be constructed and conducted.
    - (Dinger et al., 2015; Hall, 1968; Smith & McKeen, 2003; Lui et al., 2003)
- "Professionalism is
    - Knowledge: Gaining the initial competence to do your job through professional qualifications
    - Skills: Continuing Professional Development and ongoing learning which enables you to maintain competence through professional body membership.
    - Behavior: Upholding the highest standards of integrity by signing up to a professional body's code of conduct" (CISI):
- Why: "Professionalism positively impacts job satisfaction and job performance"
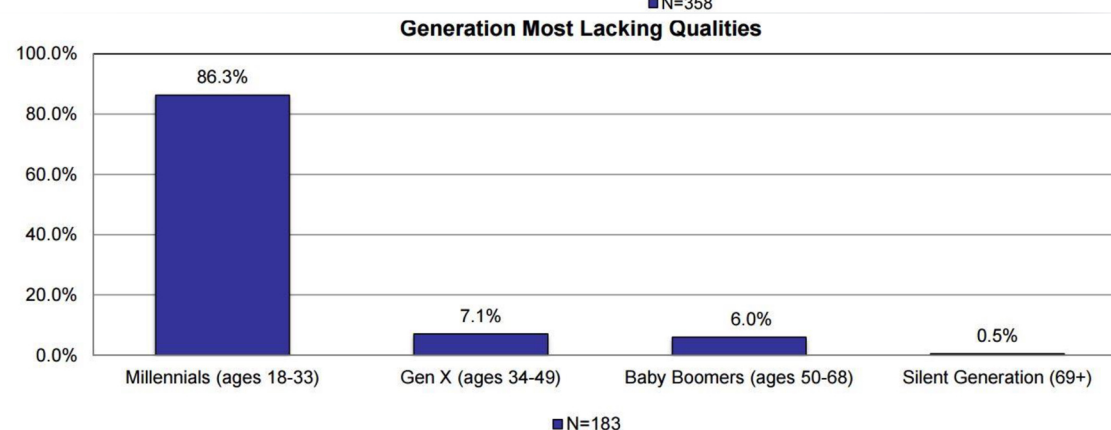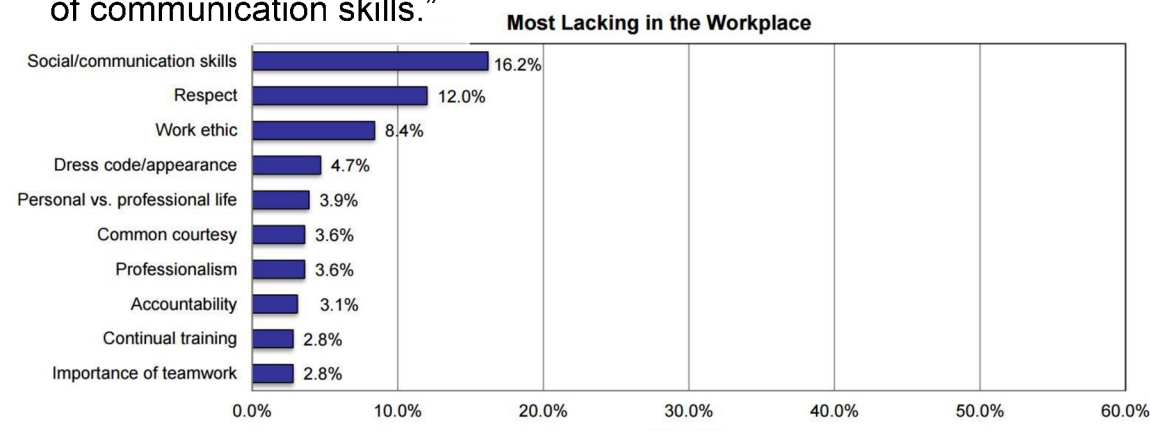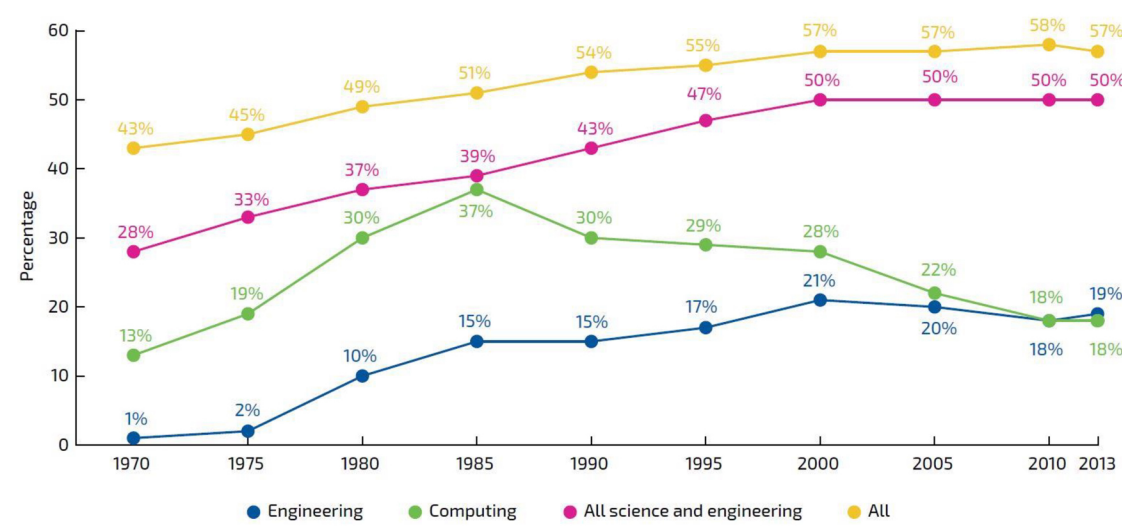   - (Dinger et al., 2015; Bartol, 1983; Kalbers & Fogarty, 1983)

National Professionalism Study

- Each year the Leadership Development Center at York College of Pennsylvania conducts a survey of recent college graduates. They have posted their 2015 data. Their sample size suggests their data has a 95% confidence level with a margin of error of +/- 4.3%.
- According to their survey, "the five qualities most associated with professional employees are: Focused, Punctual/attentive, Humble, Diligent, and possession of communication skills. While the five qualities most associated with being unprofessional are: Disrespectful, Irresponsible, Not ambitions, Late/absent, and Lack of communication skills."

Source: Graphs published by Polk-Lepson Research Group, York Pennsylvania, https://www.ycp.edu/about-us/offices-and-departments/student-success/leadership-development-center/national-professionalism-study/

Computing Workforce, By Gender and Race/Ethnicity, 2006-2010

Source: (Corbett & Hill 2015) AAUW analysis of U.S. Census Bureau(2011a).

- White women
- Asian and Pacific Islander women
- Black women
- Hispanic women
- American Indian and Alaska Native women
- All other women (including two or more races)
- White men
- Asian and Pacific Islander men
- Black men
- Hispanic men
- American Indian and Alaska Native men
- All other men (including two or more races)

Recommendations for Future Study

- Broader literature review:
    - Examine publications on advantages of professionalism in other fields.
    - Find documented examples of how to increase professionalism in careers
    - Greater documentation of the advantages of professionalism in other careers
    - Explore accreditation and standards bodies that help maintain professionalism for the computer science field.
- Survey of Employers
    - How professional are SWOSU students?
    - What do SWOSU students do well?
    - What can SWOSU students do better?
    - How would you like SWOSU to change its professional development?
- Survey of Students:
    - What are student perceptions of professionalism?
    - What are students doing to improve professionalism?

Works Cited

Bartol, Kathryn M. "Turnover among DP personnel: a casual analysis." *Communications of the ACM* 26, no. 10 (1983): 807-811.

Chartered Institute for Securities & Investment, UK, http://www.cisi.org/cisiweb2/cisi-website/integrity-ethics/promoting-professionalism

Corbett, Christianne, and Catherine Hill. "Solving the equation: the variables for women's success in engineering and computing." *The American Association of University Women* (2015).

Dinger, Michael, Jason B. Thatcher, Darren Treadway, Lee Stepina, and Jacob Breland. "Does professionalism matter in the IT workforce? An empirical examination of IT professionals." *Journal of the Association for Information Systems* 16, no. 4 (2015): 281.

Hall, Richard H. "Professionalization and bureaucratization." *American sociological review* (1968): 92-104.

Kalbers, Lawrence P., and Timothy J. Fogarty. "Professionalism and its consequences: A study of internal auditors." *Auditing* 14, no. 1 (1995): 64.

Lui, Steven S., Hang-Yue Ngo, and Anita Wing-Ngar Tsang. "Socialized to be a Professional: A Study of the Professionalism of Accountants in Hong Kong." *International Journal of Human Resource Management* 14, no. 7 (2003): 1192-1205.