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# Business Roundtable / Change the Equation Survey on U.S. Workforce Skills *Summary of findings*

December 3, 2014

## Summary of Key Results

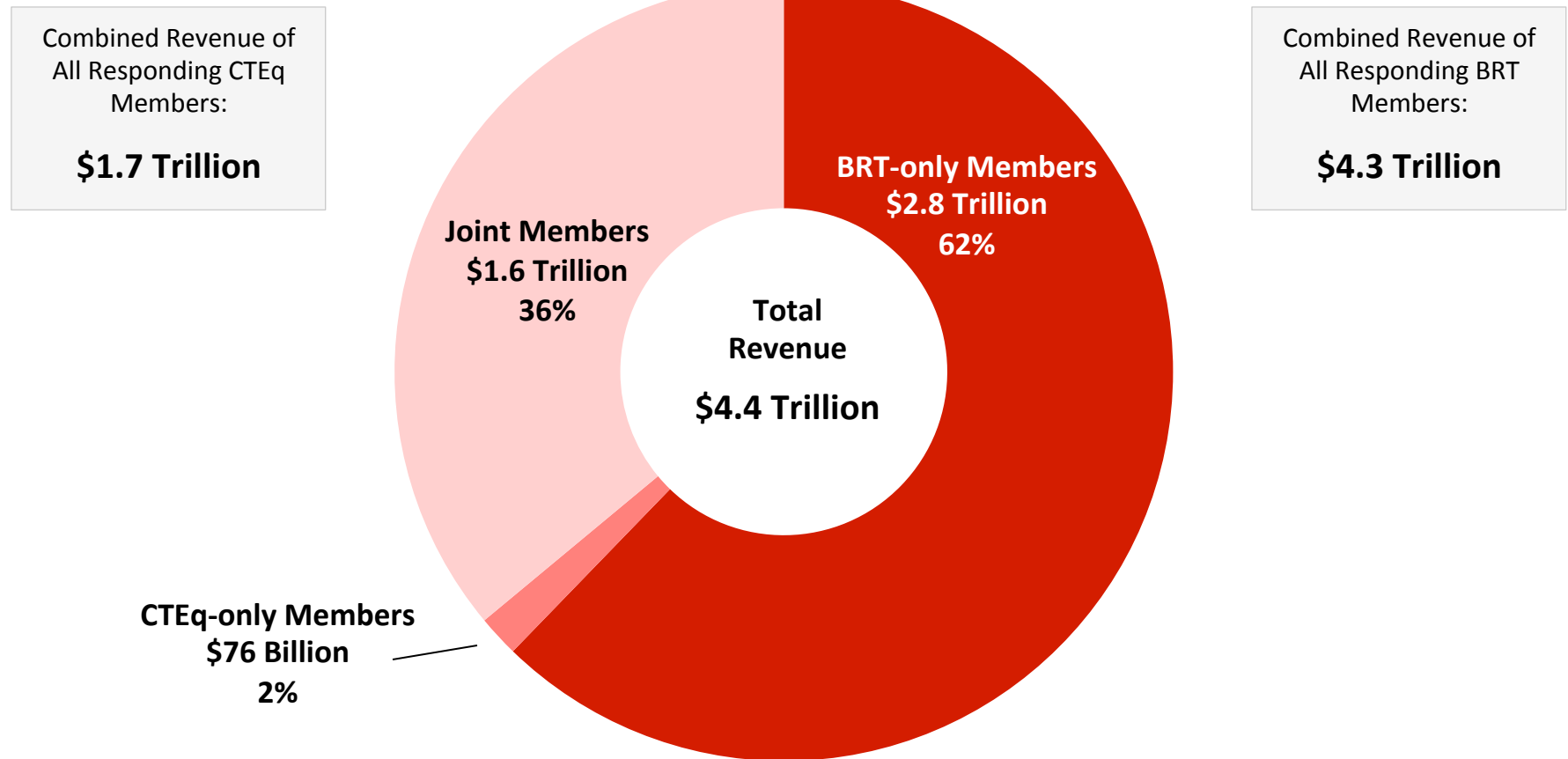
This survey was conducted from Sept. 9 – Nov. 6, 2014. Overall, 126 out of 232 companies responded, including 116 of 203 Business Roundtable member CEOs (57%) and 34 of 63 Change the Equation member CEOs (54%).\*

- **CEOs say the skills gap is real and hurts business.** Nearly 98% of CEOs say that the skills gap is a problem for their companies.
- **Most open jobs require STEM knowledge and skills.** Approximately 60% of job openings require basic STEM literacy and 42% require advanced STEM knowledge. Nearly two-thirds of job openings that require STEM skills are in manufacturing and other services.
- **The biggest skills gaps are in advanced computer and quantitative knowledge.** 62% of CEOs report problems finding qualified applicants for jobs requiring advanced computer/IT knowledge, and 41% report problems for jobs requiring advanced quantitative knowledge.
- **Many job candidates lack basic STEM skills.** 38% of respondents say that at least half of their entry-level applicants lack basic STEM literacy. 28% say that at least half of their new entry-level hires lack basic STEM literacy.
- **STEM skills are a ticket to jobs.** Over the next five years, employers expect to replace nearly a million employees needing basic STEM literacy and more than 600,000 employees needing advanced STEM knowledge.

\* Of the 63 members of Change the Equation, 35 are also members of Business Roundtable.

# 2013 Revenue

Q2: *Approximately what were your company's annual revenues in 2013?*

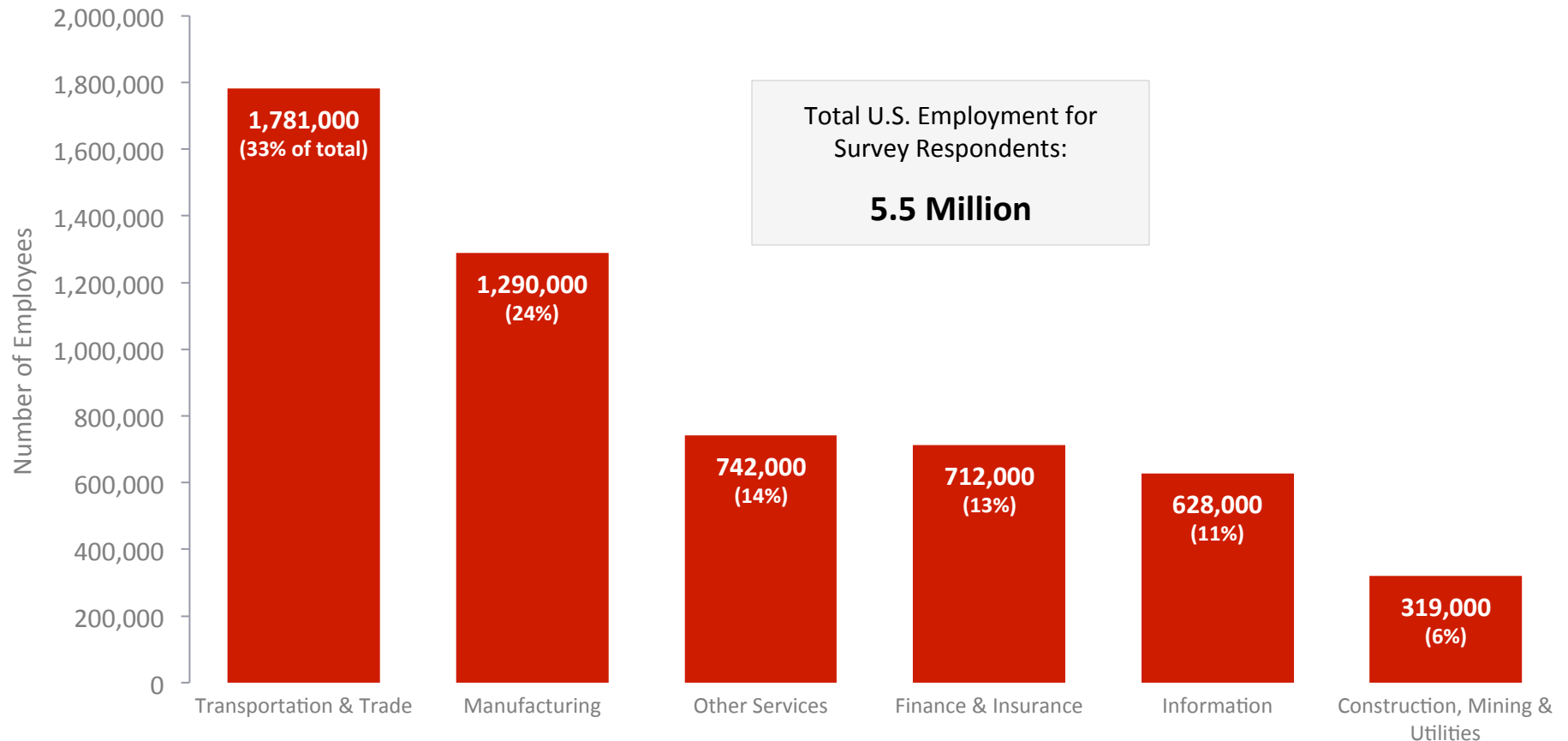


Responses: n = 122

Note: Numbers may not add up to 100% due to rounding.

# 2013 Employment

*Q3: Approximately how many people did your company directly employ in the United States in 2013?*

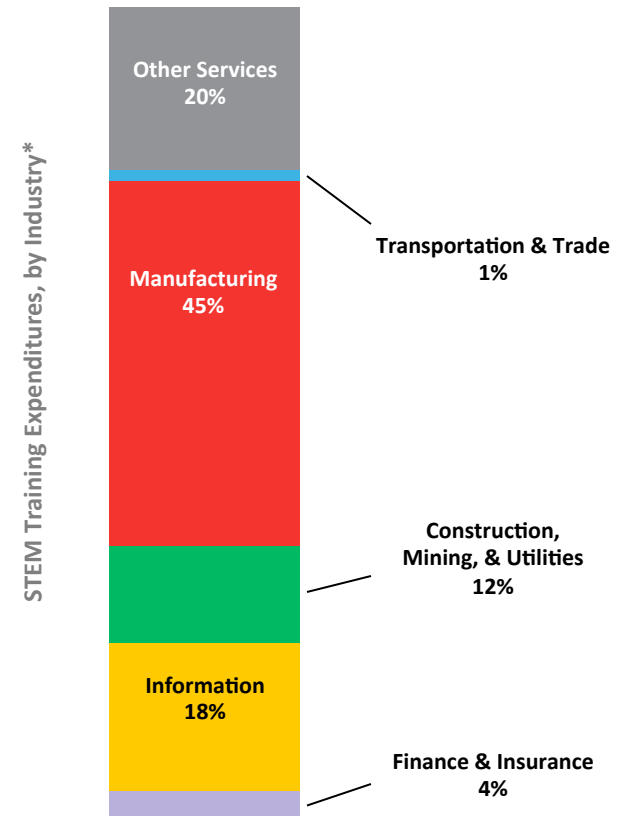
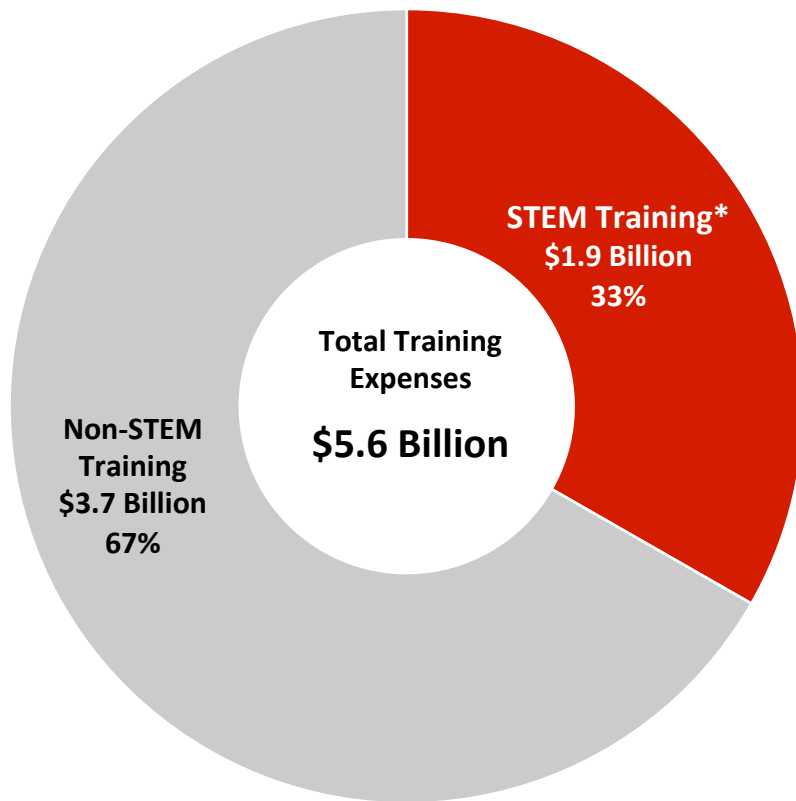


Responses: n = 116

Note: Numbers may not add up to 100% due to rounding.

# STEM Training Expenditures

Q4: Approximately how much did your company spend on training in 2013, and approximately what percentage of this amount was devoted to STEM-related training?



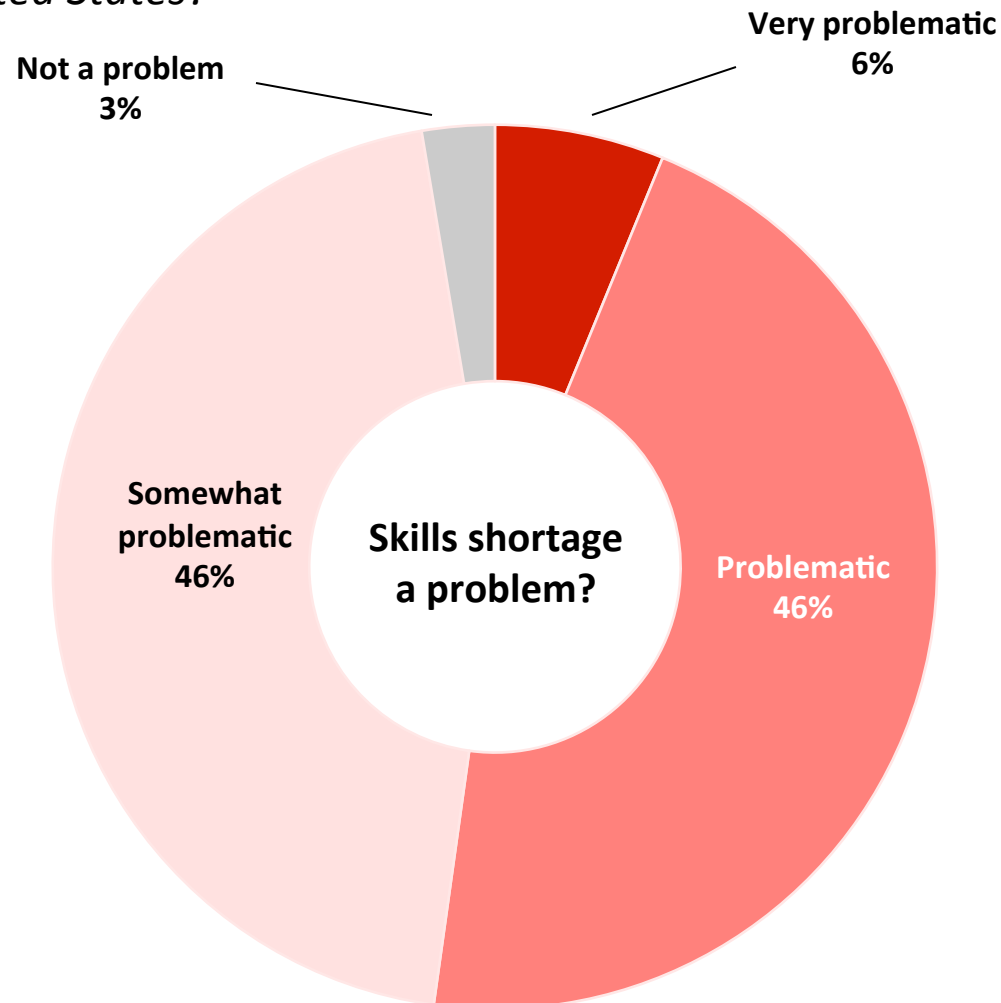
Responses: n = 86

\* Estimated by multiplying each respondent's total training expenditures by its estimate of the proportion of training expenditures that is dedicated to STEM. Excludes companies that did not provide both training expenditures and proportion of expenditures dedicated to STEM.

Note: Numbers may not add up to 100% due to rounding.

# Existence of Workforce Skills Shortages

*Q5: To what extent do you consider skills shortages to be a significant problem for your company in the United States?*



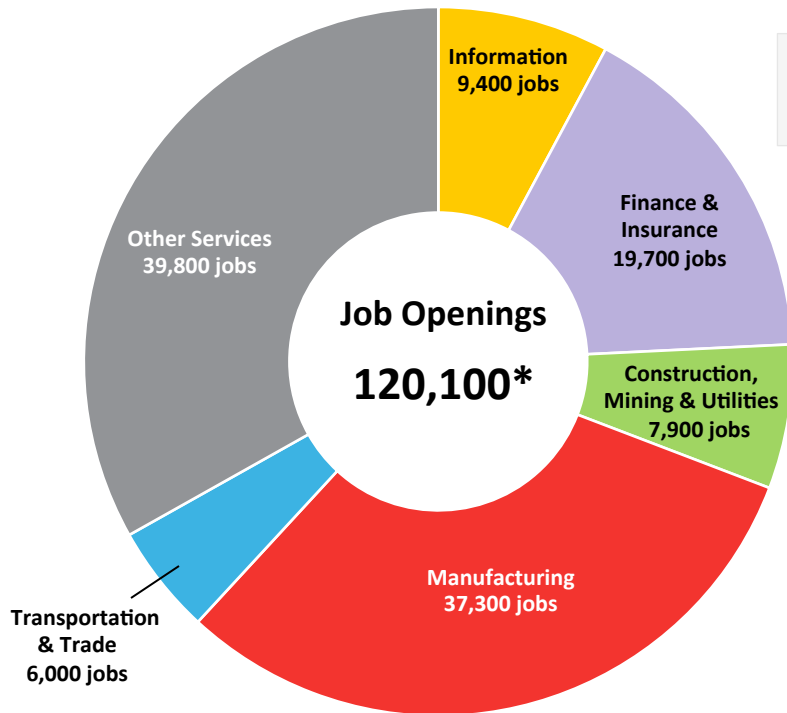
Responses: n = 113

Note: Numbers may not add up to 100% due to rounding.

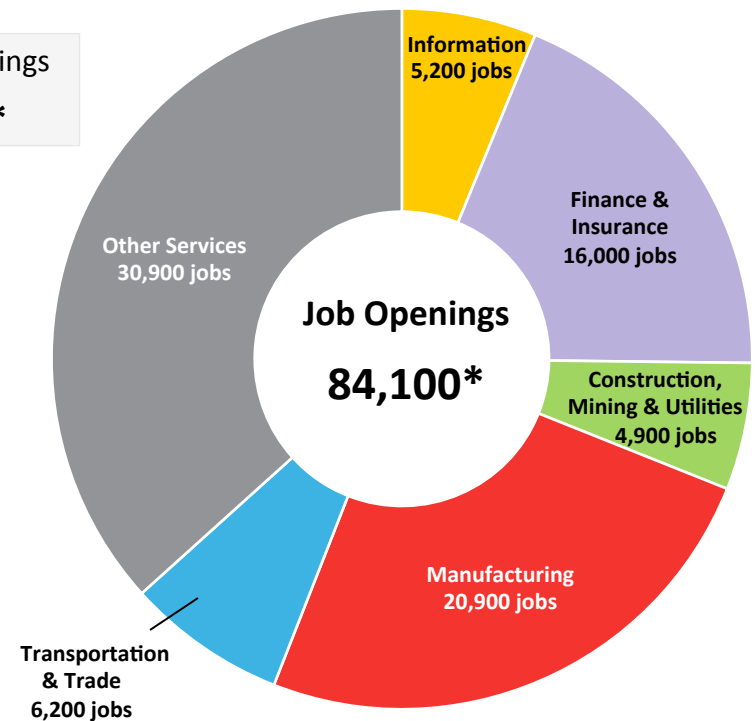
# Number of STEM Job Openings by Industry

Q7 & Q8: As of July 2014, approximately how many U.S. job openings does your company have? How many require basic STEM literacy or advanced STEM knowledge?

### Require Basic STEM Literacy



### Require Advanced STEM Knowledge



Total Job Openings  
**201,600\***

Responses: n = 114 (Basic STEM); n = 113 (Advanced STEM)

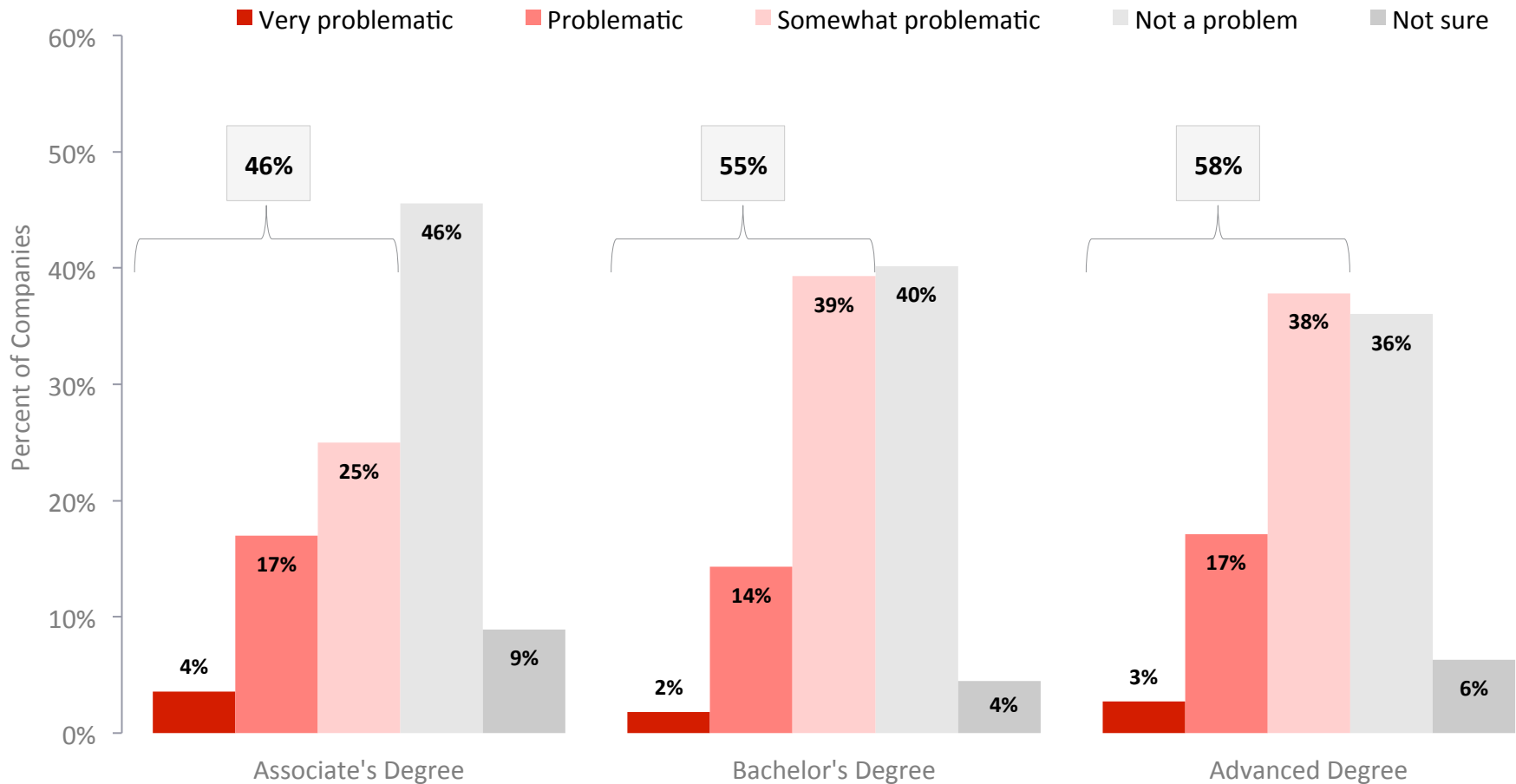
Note: "Basic STEM literacy" refers to foundational science, technology, engineering and math skills that all U.S.-educated working-age adults should possess. "Advanced STEM knowledge" refers to science, technology, engineering and math knowledge and skills typically taught in post-secondary institutions as preparation for specialized occupations that require deeper STEM knowledge.

\* "Total Job Openings" includes both STEM and non-STEM jobs. Some STEM jobs may be classified as requiring both basic literacy and advanced knowledge.

Note: Numbers may not add up to 100% due to rounding.

# Skills Gap Problem Among Job Applicants, by Educational Attainment

*Q11: To what extent are gaps between your company's needs and job applicants' skills a problem for your company in the United States, based on the highest degree these prospects have?*



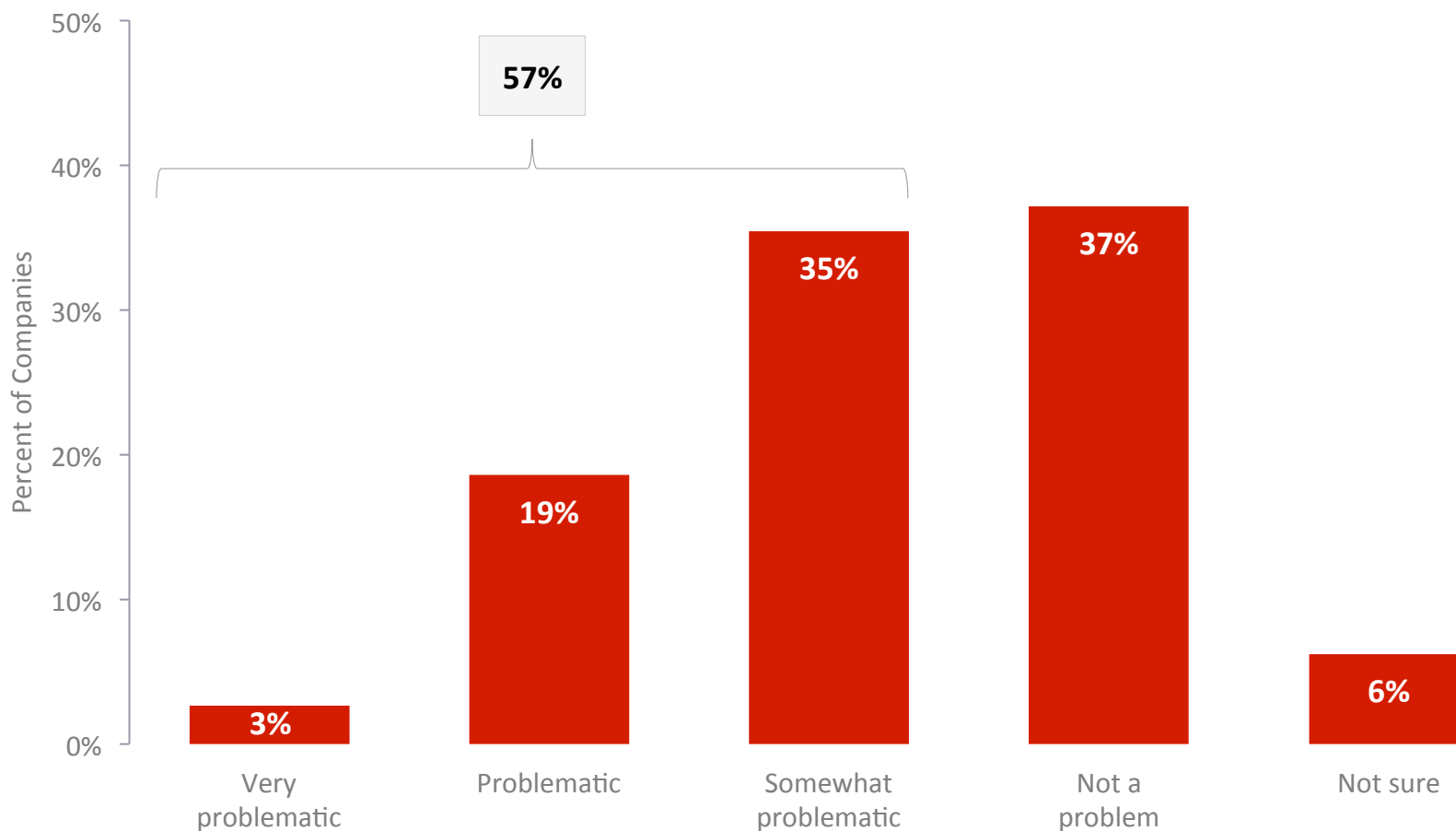
Responses: n = 112

Note: Numbers may not add up to 100% due to rounding.



# Skills Gap Problem Among Job Applicants with Industry-Recognized Certifications

*Q12: To what extent are gaps between your company's needs and job applicants' skills who have industry-recognized certifications a problem for your company in the United States?*

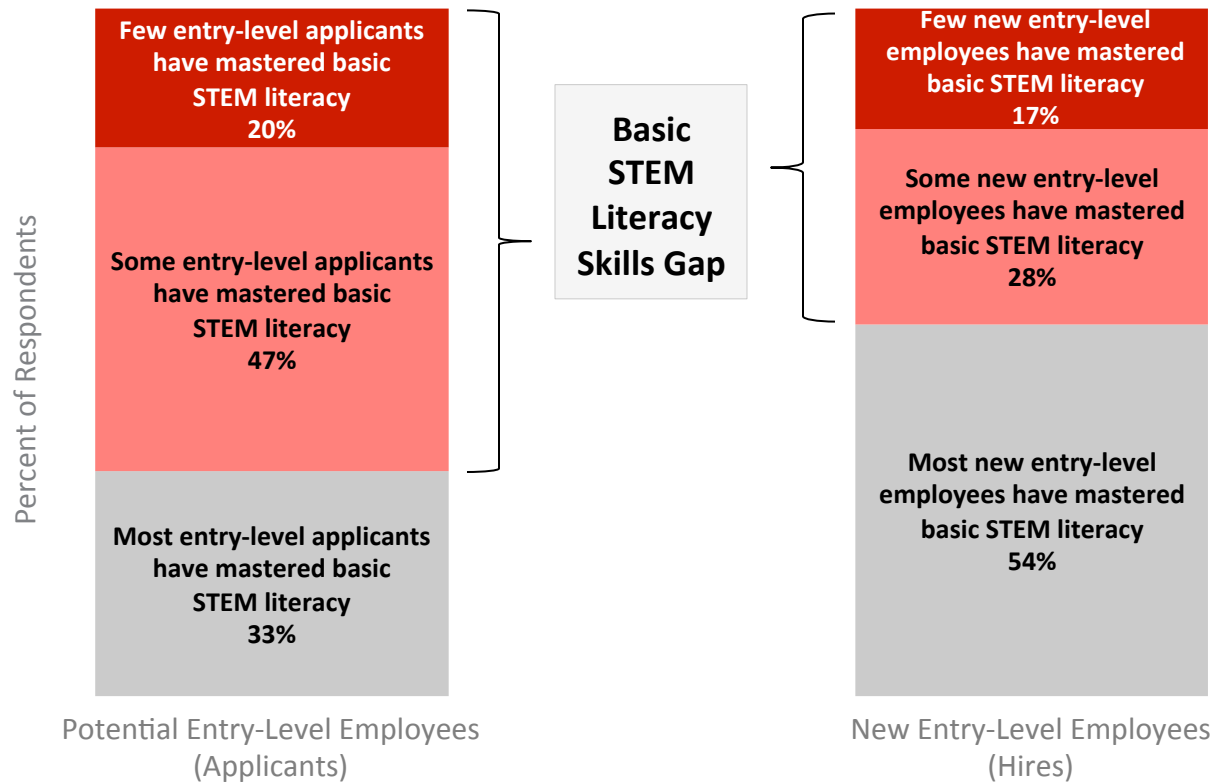


Responses: n = 113

Note: Numbers may not add up to 100% due to rounding.

# Mastery of Basic STEM Literacy among New and Potential Entry-Level Hires

*Q13: What percentage of your company's U.S. potential entry-level and new entry-level employees are able to demonstrate mastery of basic STEM literacy skills?*



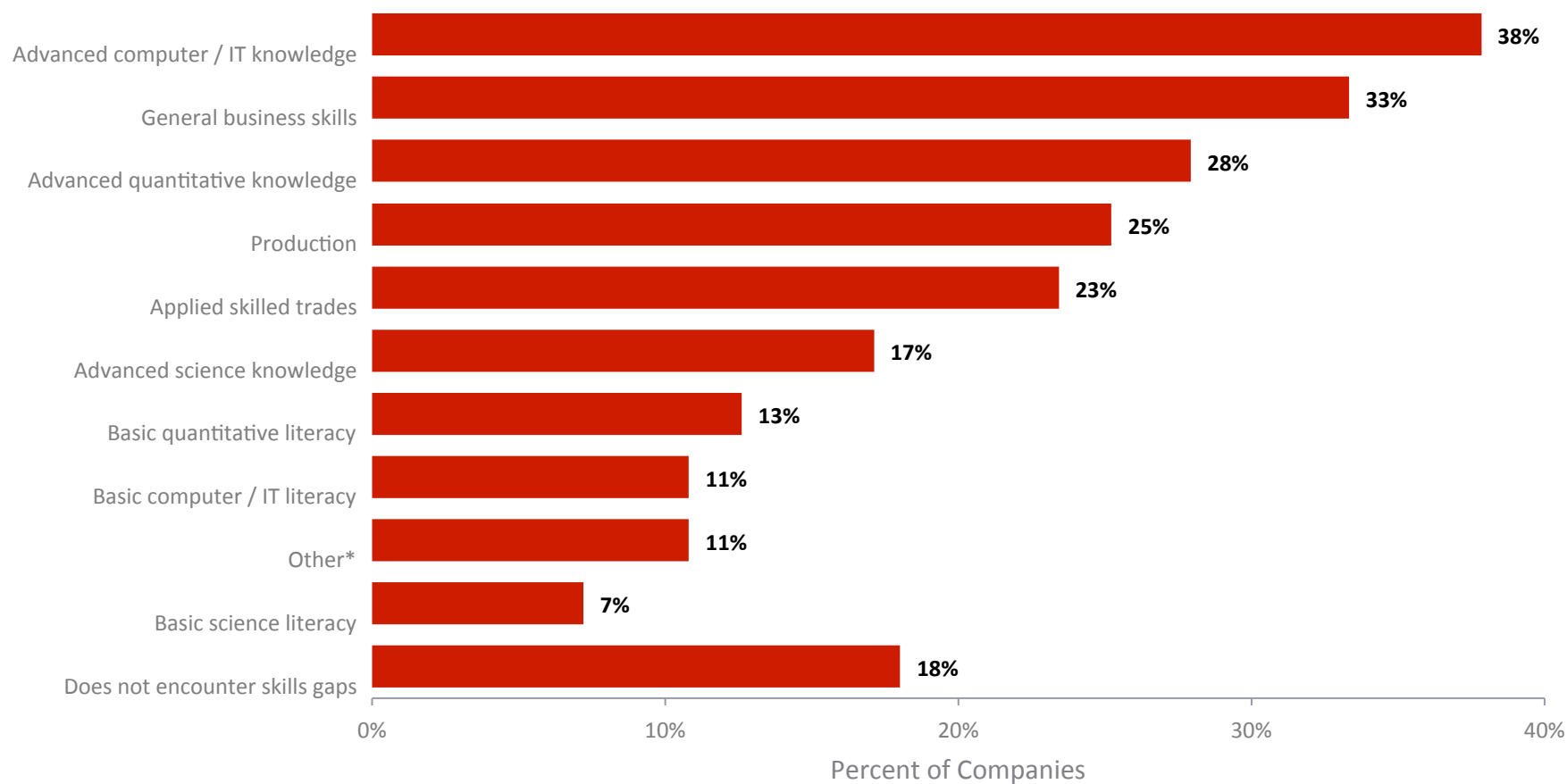
Responses: n = 104 (potential hires); n = 109 (new employees). In each chart, the three categories are defined as follows:

- **Few:** respondents indicated that between 0 – 30% of their applicants and hires demonstrate mastery of basic STEM literacy skills.
- **Some:** respondents indicated that between 31 – 70% of their applicants and hires demonstrate mastery of basic STEM literacy skills
- **Most:** respondents indicated that between 71 – 100% of their applicants and hires demonstrate mastery of basic STEM literacy skills.

Note: Numbers may not add up to 100% due to rounding.

## Entry-Level STEM Skills Requiring Additional Training

*Q14: For which types of entry-level STEM skills do new U.S.-based employees in your company typically require additional training to remediate shortcomings?  
(Select all that apply.)*



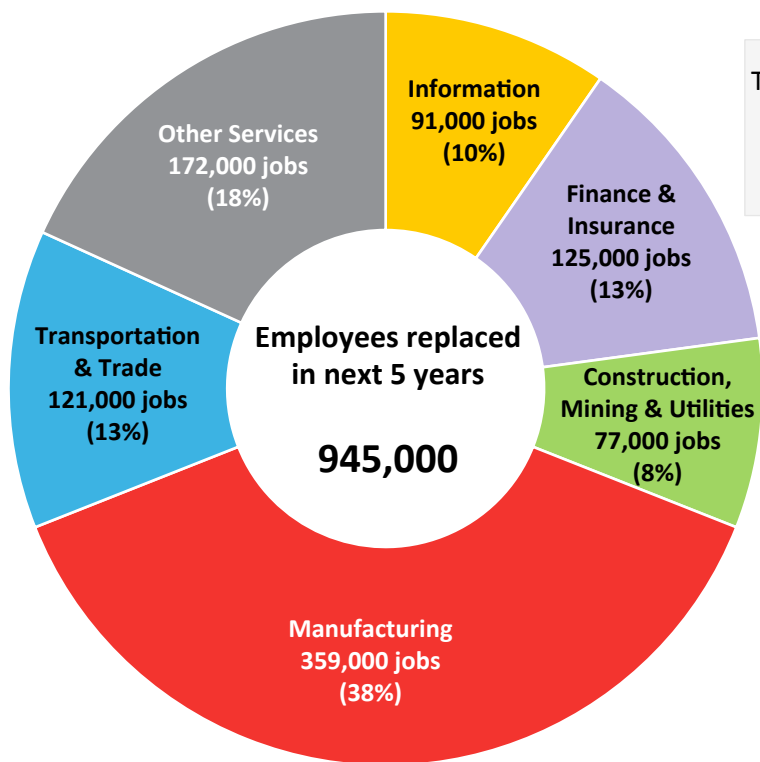
Responses: n = 111

\* See appendix for a full list of other skills cited by respondents.

# Workforce Replacement

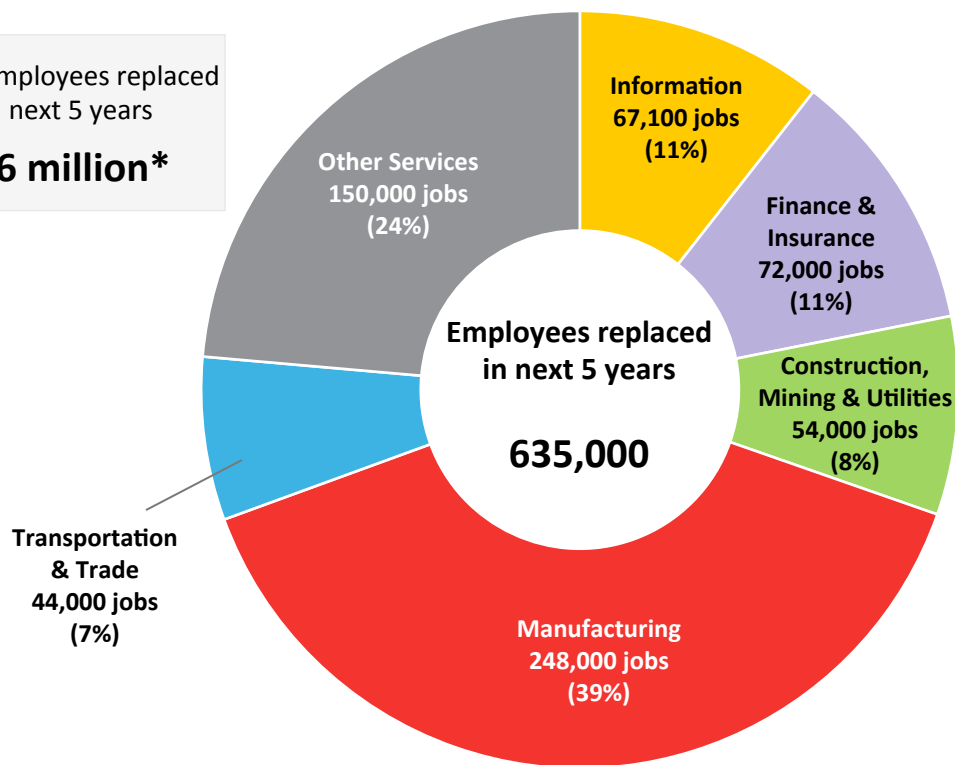
Q17: What percentage of your U.S. workforce do you expect to replace in the next 5 years?

## Require Basic STEM Literacy



Total employees replaced in next 5 years  
**1.6 million\***

## Require Advanced STEM Knowledge



Responses: n = 105 (Basic STEM); n = 105 (Advanced STEM)

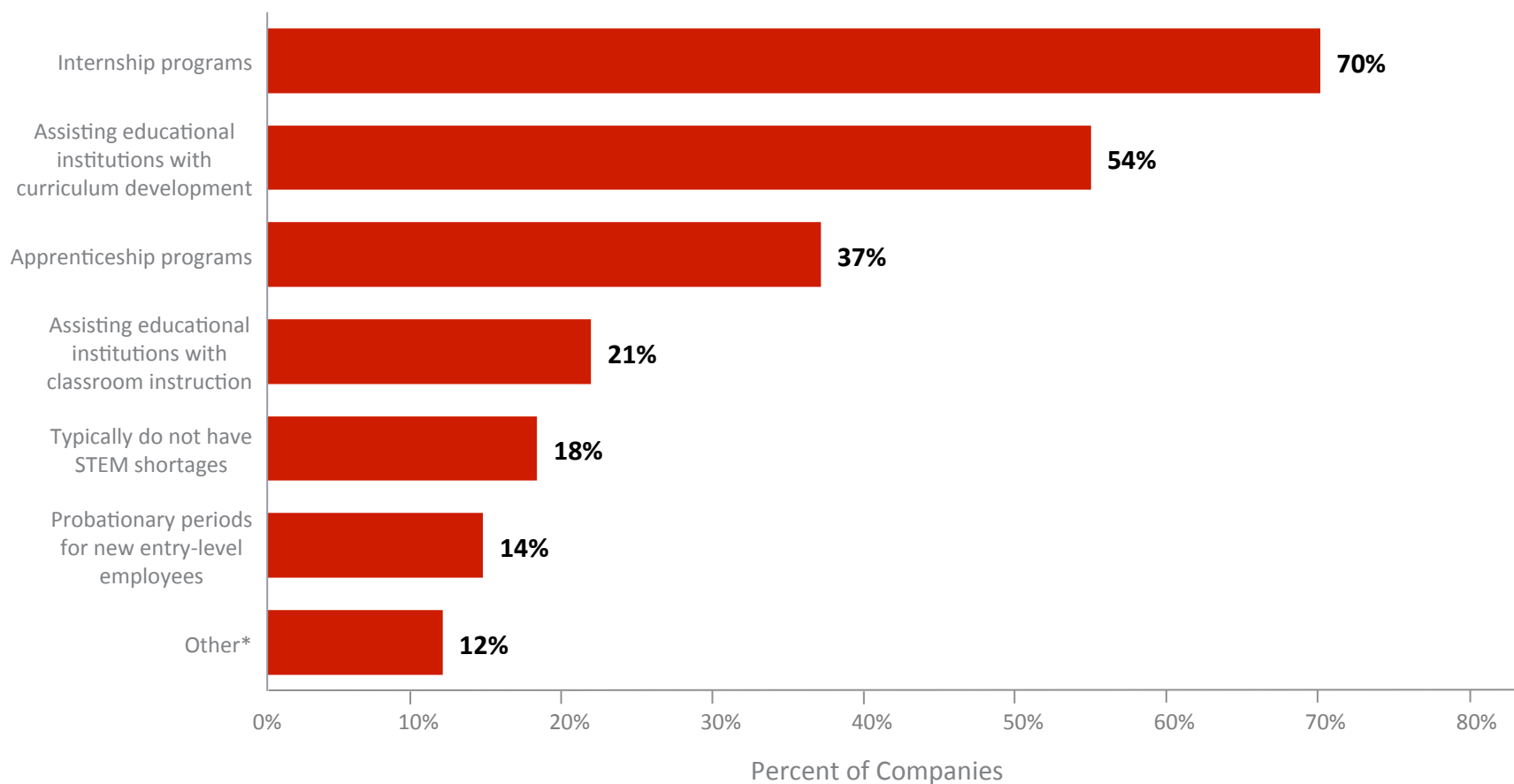
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\*Total Employees Replaced" includes both STEM and non-STEM jobs. Some STEM jobs may be classified as requiring both basic literacy and advanced knowledge.

Note: Numbers may not add up to 100% due to rounding.

# Activities to Address Skills Shortages

*Q15: What types of activities or programs does your company believe are most effective in addressing STEM skills shortages among new U.S.-based entry-level employees? (Select up to three choices.)*



Responses: n = 112

\* See appendix for a full list of other activities and programs cited by respondents.