

The HEAL Economy

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Summary

In this research brief, we define and describe “HEAL” occupations in health, education and literacy, taking inspiration from the success of the STEM movement. HEAL jobs—largely in what is sometimes called the “care economy,” including nurses, teachers, and medical assistants—already account for about one in seven jobs in the United States. The HEAL sector is projected to add 1.6 million jobs by 2033. Two in five HEAL jobs do not require a bachelor’s degree.

Male representation in HEAL professions, at 22%, is a little lower than female representation in STEM, at 24%. But while the share of STEM jobs held by women is rising rapidly, the share of men in HEAL is declining. This means missed job opportunities for men as well as a damaging lack of men in some vitally important roles.

[Watch our HEAL explainer](#)

Key takeaways

HEAL workers account for a sizable share of the U.S. workforce: 24 million HEAL jobs or 16% of total employment.

The number of HEAL jobs is projected to increase by 1.6 million by 2033.

Future growth is concentrated among health roles, including nurses, health service managers, and medical assistants.

HEAL occupations are far from gender-balanced: Only about one-fourth of HEAL workers are men. While the share of women in STEM roles has roughly tripled since 1970, the share of men in HEAL has fallen over the same time period.

The HEAL sector overall pays less than STEM: median wages are \$64,000, compared to \$102,000 across STEM roles and \$43,000 in other roles.

HEAL jobs are more accessible to workers with less education: 38% of HEAL workers are in roles that do not require a bachelor’s degree, compared to just 17% of STEM workers.



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Introduction

There's power in a good acronym. Few people need to be told that "S.T.E.M.," for example, stands for science, technology, engineering and math. Nor that these STEM fields are important areas of study and work, not least for national security and economic growth.

But jobs that help people acquire skills and knowledge, stay healthy, and receive care are just as important, even if they are not always equally appreciated. Nurses, teachers, therapists, and social workers matter, just like engineers, coders and physicists do. In this research brief and work elsewhere we refer to these as "HEAL" jobs, emphasizing health and education, as well as jobs requiring more literacy of various kinds. Representation in both STEM and HEAL areas matters.

In recent decades there has been a concerted effort to increase the share of women in STEM. Partly as a result, the share of STEM jobs held by women increased nearly threefold from 1970 to 2020, from 9% to 26%. The representation of men in HEAL roles, however, has not increased. As we show here, male representation in HEAL has in fact fallen slightly, from 31% in 1970 to 27% in 2020. STEM jobs are becoming less gendered over time; HEAL jobs are not.

In this research brief, we:

Define the HEAL category, referring to the fields of health, education, and literacy, as a way to characterize a distinct and important group of care-related occupations.

Describe HEAL occupations in terms of size, projected growth, wages, education level, and demographics.

Highlight levels and trends in terms of gender representation (or lack thereof) in HEAL and STEM jobs. (See also our work on the declining share of men in the teaching profession and key mental health occupations.)

Set out next steps for putting the HEAL category to work in terms of research and policymaking.

By building and sharing a HEAL classification based on systematic occupational data, we aim to move beyond the existing qualitative descriptions of the "care economy" or "pink-collar jobs." These earlier frameworks have played an important role in describing the unique nature of care-related work. Our



HEAL defined

In motivating and defining HEAL, we draw on some lessons from the STEM field. The rise of STEM was related to the growing need, especially over the last several decades, to invest in technical fields expected to be critical for the U.S. economy and national security. Reports by national academies and research bodies encouraged increased funding and opportunities for Americans to pursue education and careers in science, technology, engineering, and mathematics.

Since then, resources allocated to STEM (originally SMET) education have substantially increased, including for many programs specifically aimed at increasing the participation of women in the field. There has been bipartisan support committed to growing employment and progress in these fields.

But there is no single, agreed-upon definition of what counts as a STEM job. As Amanda Olson and co-authors note in a 2014 paper:

“Yet, as part of a research program...we discovered troubling issues surrounding the way that projections are made about the number of STEM jobs available, their expected wages, and the education needed to get these jobs.

There have been three main approaches to defining STEM:

- 1 **Task-based definitions**, grouping together roles with similar duties such as design, research, or teaching.
- 2 **Knowledge-based frameworks**, based on required expertise in fields like chemistry, biology, or mathematics.
- 3 **Skill-based definitions**, focused on high-level competencies and durable skills such as critical thinking or problem-solving.

These differences produce widely varying estimates of the STEM workforce—from 5.4 million to 29 million jobs—and can complicate efforts to identify skill shortages, design curricula, and allocate resources. Even within a single broad approach, details may differ. For instance, both the Bureau of Labor Statistics (BLS) and the National Science Foundation (NSF) use a task-based taxonomy to classify STEM occupations, but the BLS sometimes includes “management” or “education” under STEM while the NSF distinguishes “science and engineering” (S&E) occupations—often requiring a bachelor’s degree—from “S&E-related” roles that may not.



involved, as defined by the Standard Occupational Classification (SOC) system, which organizes jobs according to “work performed,” making it a widely used and straightforward approach for workforce analysis.

In our **skill-based classification**, we selected occupations based on required aptitudes, skills, and work contexts using Occupational Information Network (O*NET) data to capture competencies like social perceptiveness, service orientation, and assisting and caring for others.

In our **knowledge-based classification**, occupations categorized as HEAL were those with above-average requirements in “education and training”, “medicine and dentistry”, or “therapy and counseling”, using standardized O*NET ratings.

Unlike for STEM, the three approaches actually result in a very similar number of occupations and share of the workforce being classified as HEAL, as figure 1 shows.

Comparing HEAL classification methods

Characteristics of HEAL occupations by classification

	Skill-Based	Knowledge-Based	Task-Based	STEM
# of Occupations	130	134	128	105
Current # Employed (2023)	33M	24.3M	24.9M	10.7M
Projected Job Growth (2023-2033)	2.7M	1.6M	2.2M	1.1M
Median Wages	\$64K	\$64K	\$61K	\$102K
Median Wages (BA+)	\$86K	\$80K	\$74K	\$105K
Median Wages (no-BA)	\$40K	\$41K	\$39K	\$59K

Wage estimates are in 2023 dollars. Wages are calculated based on median wages of individual occupations. Occupations were classified as STEM according to the BLS OEWS May 2023 definition.

Source: Authors' Analyses of O*NET & BLS EP

Figure 1

More results for the three approaches are shared in the [appendix](#), but for our main analysis we use the knowledge-based classification, for two main reasons:

First, unlike task-based classifications, which group jobs within broad occupational domains, a knowledge-based approach identifies roles where HEAL knowledge is essential, even in occupations not traditionally associated with health, education, or literacy. This results in a broader classification spanning both B.A. and non-B.A. roles, including some that might otherwise be overlooked, such as rehabilitation counselors, clergy, firefighters, and police supervisors.

Second, a knowledge-based approach offers clearer policy relevance. Knowledge domains can be more directly tied to career tracks and training programs, making them potentially more amenable to



domains (e.g., “building and construction,” “public safety and security,” or “psychology”). For this classification, we focused on three key knowledge domains:

Education and training

Medicine and dentistry

Therapy and counseling

Ratings on each of these three were then standardized to identify occupations with significantly higher-than-average knowledge requirements in one or more of these domains. In line with threshold values used by Jonathan Rothwell in his knowledge-based classification of STEM occupations, we classified occupations scoring at least 1.5 standard deviations above the mean in one or more of these domains as HEAL.

For example, radiologists score a 3.70 out of 5 on “education and training,” a 4.67 out of 5 on “medicine and dentistry,” and a 2.14 out of 5 on “therapy and counseling.” These correspond to standardized scores of 1.03, 3.07 and 0.43, respectively. Since radiologists score above 1.5 on one of these domains (“medicine and dentistry” in this case), they are classified as HEAL under our knowledge-based classification.

Our resulting HEAL classification contains 134 occupations, including physical therapists and veterinarians, but also several that might be less obvious, like firefighters. Others, like home health and personal care aides, that might seem like intuitive fits, fall slightly below the required knowledge thresholds.

For comparative purposes, we use the STEM definition adopted by BLS. This definition, which estimates the STEM workforce at 10.7 million, is narrower than some alternatives but ensures no overlap between STEM and our categorization of HEAL occupations.

The interactive table below shows occupations according to their categorization as HEAL, STEM, or other, and the overall size, rate of growth, average salary, typical education level, and male share of each occupation. The table also shows standardized scores on each of the three knowledge domains used in our HEAL definition.

As a note, data limitations require us to use a slightly smaller set of occupations for some estimates. These adjustments, along with more detailed information on the other two approaches, are noted and detailed in the appendix.

Explore occupational characteristics

Occupations by classification

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Occupation	Classification ▲	Employment (2023)	Employment (2033)	Change (2023-2033)	Median Annual Wage (2023)	Typical Education Required	Male Share (2023)
Training And Development Managers	HEAL	43,200	46,400	3,200	\$125,040	Bachelor's degree	44%



Education And Instruction Administrators, Preschool And Daycare	HEAL	80,900	79,200	-1,700	\$54,290	Bachelor's degree	NA
Education Administrators, Kindergarten Through Secondary	HEAL	316,600	315,000	-1,600	\$103,460	Master's degree	NA
Education Administrators, Postsecondary	HEAL	216,400	222,700	6,200	\$102,610	Master's degree	NA
Medical And Health Services Managers	HEAL	562,700	723,300	160,600	\$110,680	Bachelor's degree	27%
Social And Community Service Managers	HEAL	199,500	215,900	16,400	\$77,030	Bachelor's degree	28%
Training And Development Specialists	HEAL	420,100	468,600	48,500	\$64,340	Bachelor's degree	45%
Industrial-Organizational Psychologists	HEAL	8,600	9,100	500	\$147,420	Master's degree	NA
Clinical And Counseling Psychologists	HEAL	76,800	87,000	10,200	\$96,100	Doctoral or professional degree	32%
School Psychologists	HEAL	65,500	66,000	500	\$84,940	Master's degree	16%
Sociologists	HEAL	3,300	3,600	200	\$101,770	Master's degree	41%
Political Scientists	HEAL	6,200	6,300	200	\$132,350	Master's degree	NA
Occupational Health And Safety Technicians	HEAL	27,600	30,800	3,200	\$57,920	High school diploma or equivalent	NA
Educational, Guidance, And Career Counselors And Advisors	HEAL	360,800	377,000	16,200	\$61,710	Master's degree	22%
Marriage And Family Therapists	HEAL	76,000	88,200	12,300	\$58,510	Master's degree	21%
Rehabilitation Counselors	HEAL	87,600	89,200	1,600	\$44,040	Master's degree	33%
Child, Family, And School Social Workers	HEAL	365,900	383,800	17,900	\$53,940	Bachelor's degree	16%
Healthcare Social Workers	HEAL	193,200	211,900	18,700	\$62,940	Master's degree	22%
Mental Health And Substance Abuse Social Workers	HEAL	123,700	138,100	14,400	\$55,960	Master's degree	18%
Health Education Specialists	HEAL	62,100	66,400	4,300	\$62,860	Bachelor's degree	NA



Figure 2

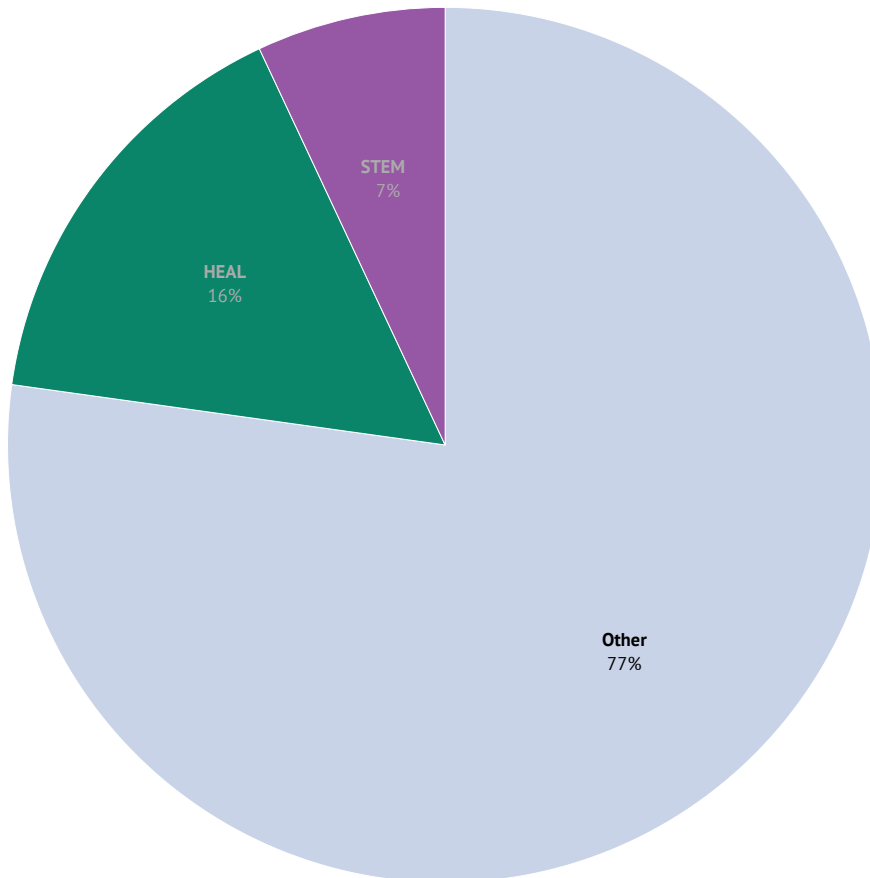
DATA NOTE

HEAL occupations: Large and growing

HEAL roles account for 24 million jobs (16% of total jobs) compared to 10.7 million (7% of total jobs) for STEM, as shown in figure 3.

HEAL accounts for sizeable portion of total jobs

Share of total employment by occupation classification (2023)



Note that shares are calculated based on a merged dataset representing about 90% of the total employed population in 2023. Occupations were classified as STEM according to the BLS OEWS May 2023 definition.
Source: Authors' Analyses of O*NET & BLS EP

