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Methodology

- ABC distributed the survey to the ABC contractor membership list beginning on Jan. 4, 2023, and the survey was closed on May 5, 2023.

- After removing duplicate and incomplete responses, the sample response rate was 8% of all ABC contractor members. The large sample size and the distribution of responses across categories gave FMI confidence to model the total investment of ABC contractor members.

- FMI’s model of total workforce development and education investment was built from 21 distinct categories based on contractor type and annual revenue. Using survey data on total workforce development and education budgets, FMI cleaned and corrected data related to per-person spending within each education type. FMI assigned each contractor category a typical number of course attendees educated and per-person investment for each education type (leadership, safety, craft/trade).

- FMI multiplied the number of course attendees educated by the amount spent per course attendee to calculate the investment per firm in each category. The amount per firm was multiplied by the number of ABC member contractors in each of those categories, based on ABC and survey data.

- The final sum ($1.5 billion) is intended as a conservative estimate of total workforce education investment made by ABC member contractors, as the largest ABC member contractors were assumed to have revenues no greater than $2 billion.

- The results of the survey are contained in the subsequent report\(^1\).

\(^1\)All charts and graphs are rounded to the nearest whole number.
Highlights From the ABC 2022 Workforce Development Survey

ABC member contractors invested $1.5 billion in workforce development in 2022 to educate more than 1.3 million course attendees.

ABC contractors invested an average of 8.0% of payroll on workforce development in 2022, up from 7.4% in 2021.

Safety education accounts for the greatest share (59%) of total workforce investment, up from 56% in 2021.

All three education areas received similar levels of investment (~ $2,100) from ABC member firms in 2022, continuing the trend from the prior year.

Compared to 2021, trade and specialty contractors have increased their share of the total workforce development investment, growing to 42% in 2022 from 33% in 2021.

Women in management/supervisory roles dipped slightly to 18% of course attendees in 2022 from 19% in 2021, and women in craft/trade roles stayed consistent at 15% year over year.
ABC member contractors invested an average of $105,475 on workforce development and education.

**Model Summary**  
Source(s): ABC, FMI

<table>
<thead>
<tr>
<th>ABC members by type (number of firms)</th>
<th>General contractor/construction manager</th>
<th>Trade or specialty</th>
<th>Heavy/civil/utility</th>
<th>Overall</th>
</tr>
</thead>
<tbody>
<tr>
<td>ABC members by type</td>
<td>3,621</td>
<td>10,253</td>
<td>772</td>
<td>14,646</td>
</tr>
<tr>
<td>Total education investment</td>
<td>$863,789,746</td>
<td>$655,923,019</td>
<td>$25,076,658</td>
<td>$1,544,789,423</td>
</tr>
</tbody>
</table>
| Number of course attendees educated in each course type | Leadership: 43,496  
Safety: 209,254  
Craft/trade: 122,053 | Leadership: 74,675  
Safety: 486,469  
Craft/trade: 273,222 | Leadership: 4,021  
Safety: 31,723  
Craft/trade: 16,446 | Leadership: 122,192  
Safety: 727,446  
Craft/trade: 411,721 |
| Per-attendee investment              | Leadership: $2,522  
Safety: $1,817  
Craft/trade: $1,749 | Leadership: $2,021  
Safety: $2,340  
Craft/trade: $2,132 | Leadership: $1,821  
Safety: $1,885  
Craft/trade: $1,900 | Leadership: $2,136  
Safety: $2,187  
Craft/trade: $2,025 |
| Student distribution by role         | Senior executive: 17%  
Project manager: 14%  
Field manager: 19%  
Craft/trade: 50% | Senior executive: 8%  
Project manager: 11%  
Field manager: 16%  
Craft/trade: 65% | Senior executive: 5%  
Project manager: 9%  
Field manager: 22%  
Craft/trade: 65% | Senior executive: 12%  
Project manager: 12%  
Field manager: 18%  
Craft/trade: 58% |
The number of course attendees educated by ABC member contractors remained relatively constant year over year from 2021 to 2022 at just under 1.3 million.

**Model Summary**  
Source(s): ABC, FMI

<table>
<thead>
<tr>
<th>Number of course attendees educated</th>
<th>2020</th>
<th>2021</th>
<th>2022</th>
</tr>
</thead>
<tbody>
<tr>
<td>Leadership</td>
<td>57,303</td>
<td>144,459</td>
<td>122,192</td>
</tr>
<tr>
<td>Safety</td>
<td>320,758</td>
<td>752,139</td>
<td>448,114</td>
</tr>
<tr>
<td>Craft/trade</td>
<td>138,956</td>
<td>411,721</td>
<td>441,721</td>
</tr>
<tr>
<td>Total</td>
<td>517,017</td>
<td>1,344,712</td>
<td>1,261,358</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Average investment per attendee</th>
<th>2020</th>
<th>2021</th>
<th>2022</th>
</tr>
</thead>
<tbody>
<tr>
<td>Leadership</td>
<td>$1,405</td>
<td>$2,226</td>
<td>$2,136</td>
</tr>
<tr>
<td>Safety</td>
<td>$2,369</td>
<td>$2,200</td>
<td>$2,187</td>
</tr>
<tr>
<td>Craft/trade</td>
<td>$2,187</td>
<td>$2,200</td>
<td>$2,227</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Total investment by contractor type</th>
<th>2020</th>
<th>2021</th>
<th>2022</th>
</tr>
</thead>
<tbody>
<tr>
<td>General contractor/construction manager</td>
<td>$789,969,546</td>
<td>$1,072,927,828</td>
<td>$863,789,746</td>
</tr>
<tr>
<td>Heavy/civil/utility</td>
<td>$57,180,520</td>
<td>$27,849,454</td>
<td>$25,076,658</td>
</tr>
<tr>
<td>Trade or specialty</td>
<td>$511,523,548</td>
<td>$545,604,739</td>
<td>$655,923,019</td>
</tr>
<tr>
<td>Total</td>
<td>$1,358,673,614</td>
<td>$1,344,712</td>
<td>$1,261,358</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Average investment by contractor type</th>
<th>2020</th>
<th>2021</th>
<th>2022</th>
</tr>
</thead>
<tbody>
<tr>
<td>General contractor/construction manager</td>
<td>$228,183</td>
<td>$296,327</td>
<td>$238,566</td>
</tr>
<tr>
<td>Heavy/civil/utility</td>
<td>$84,089</td>
<td>$36,085</td>
<td>$32,493</td>
</tr>
<tr>
<td>Trade or specialty</td>
<td>$52,378</td>
<td>$53,212</td>
<td>$63,971</td>
</tr>
</tbody>
</table>
Trade and specialty contractors invested more in workforce development and education in 2022 than in 2021.

Management Summary
Source(s): ABC, FMI

Estimated ABC membership by contractor type
All respondents, percent of total

- **Trade/specialty**: 70%
- **General contractor/construction manager**: 25%
- **Heavy/civil/utility**: 5%

Total educating investment by contractor type
All respondents, percent of total

- **General contractor/construction manager**: 56%
- **Trade/specialty**: 42%
- **Heavy/civil/utility**: 2%
- **General contractor/construction manager**: 56%
Safety education accounted for the greatest share of total workforce investment, at 59%.

Management Summary
Source(s): ABC, FMI

Education investment by education type
All respondents, percent of total

- Safety education: 59%
- Craft/trade education: 31%
- Leadership education: 10%

Average per-attendee education investment by education type
All respondents

- Safety education: $2,187
- Leadership education: $2,136
- Craft/trade education: $2,025
In 2022, ABC member contractors provided safety education to more than 727,000 course attendees.

Management Summary
Source(s): ABC, FMI

Personnel educated by role
All respondents, percent of total

- Craft/trade personnel: 58%
- Field managers/superintendents: 18%
- Project managers: 12%
- Senior executives: 12%

Personnel educated by educating type
All respondents

- Safety education: 727,446
- Craft/trade education: 411,721
- Leadership education: 122,192
Women in management/supervisory roles dipped slightly to 18% of course attendees in 2022 from 19% in 2021, and women in craft/trade roles stayed consistent at 15% year over year.

Management Summary
Source(s): ABC, FMI

In your company, what percentage of each type of course attendee are represented by women?
All respondents, average percentage

- Craft/trade: 15%
- Management/supervisory: 18%
ABC member contractors invested an average of $105,475 on workforce development in 2022.

What percentage of your company’s payroll is spent on education?
All respondents

What is your total investment for educating personnel (in dollars)?
All respondents
ABC member contractors educated more trade/craft personnel than any other position group.

How many personnel in each of the following groups receive education in a year?

- All respondents:
  - Trade/craft personnel: 78
  - Field managers/superintendents: 45
  - Project managers: 35
  - Senior executives: 28
In 2022, ABC member firms invested in safety education for 95 course attendees, on average.

How many personnel receive education in the following categories annually?

- Safety education: 95
- Leadership education: 41
- Craft/trade education: 65

How much does your organization invest annually per person on each of the following types of education?

- Safety education: $2,025
- Leadership education: $2,293
- Craft/trade education: $2,900
Over half of respondents (59%) reported a labor shortage that is severe or higher, citing an exodus of baby boomers as the top contributor.

How severe is the skilled labor shortage facing your company or organization?
All respondents, percent of total

- Very severe: 22%
- Severe: 37%
- Moderate: 34%
- Minimal: 6%
- Non-existent: 1%

Which of the following factors have increased the severity of the skilled labor shortage facing your company or organization? Choose up to three.
All respondents, percent of total

- Exodus of baby boomers: 54%
- Workers leaving the construction industry for other industry sectors: 51%
- Perception of the industry as technologically unsophisticated: 37%
- Higher compensation in other industries: 32%
- Difficulty finding candidates who can pass a drug test: 32%
- Immigration requirements: 21%
- Higher compensation in other areas of the United States: 20%
- Perception of the industry as unsafe: 12%
- Other: 24%

Other includes a demotivated younger generation, lack of skilled workers and unwillingness to travel.
More than half of respondents (58%) employed reentering or second-chance citizens.

Do you employ reentering or second-chance citizens (e.g., ex-felons)?
All respondents, percentage of total

Yes: 58%
No: 42%
Most respondents in the survey targeted high school students, graduates and/or people with a GED diploma for recruitment.

Which of the following groups of people has your company targeted for outreach, recruitment or education? Please select all that apply.

All respondents, percent of total

- High school students, graduates and/or people with a GED diploma: 79%
- Community college students and graduates: 65%
- Active military personnel or veterans of armed forces: 55%
- People re-entering the workforce or switching careers to work in the construction industry: 52%
- Higher education/university students and/or graduates: 51%
- Women: 49%
- Racial/ethnic minorities: 42%
- People without a high school diploma: 28%
- Re-entering citizens or people who had previously been convicted of a felony: 25%
- People with a disability: 11%
- LGTBQ+: 10%
- Other: 9%

Other includes skilled tradespeople, minorities, licensed plumbers and college graduates.
Nearly two-thirds of respondents (62%) had a registered apprenticeship program validated by the state or federal Department of Labor.

**Does your company have a registered apprenticeship program that is validated by the state or federal Department of Labor? Select all that apply.**
All respondents, percent of total

- Yes, an independent registered apprenticeship program: 17%
- Yes, an ABC chapter-affiliated registered apprenticeship program: 45%
- No registered apprenticeship program: 38%

**Does your company have a nonregistered apprenticeship or craft education program? Select all that apply.**
All respondents, percent of total

- Yes, an independent nonregistered apprenticeship or craft education program: 17%
- Yes, an ABC chapter-affiliated nonregistered apprenticeship or craft education program: 11%
- No nonregistered apprenticeship or craft education program: 72%
ABC member firms partnered with colleges/universities, high school career and technical education programs most frequently for internship programs.

Does your organization participate in internship programs in the United States?
All respondents, percent of total

Yes 40%
No 60%

What types of entities do you partner with for your internship program?
Select all that apply.
All respondents, percent of total

- College/university 74%
- High school/CTE 62%
- Job education center 21%
- Military/veteran organization 17%
- Other 5%

Other includes school-to-work programs and various placement programs.
84% of internships were paid, with most internships dedicated to craft/trade and project management positions.

- **Are your interns paid or unpaid?**
  - Paid: 84%
  - Unpaid: 1%
  - Mixture of both/it depends: 15%

- **For which job classifications do you provide internships?**
  - Craft/trade: 65%
  - Project management: 61%
  - Field leadership: 35%
  - Safety: 23%
  - Other: 18%
Face-to-face, instructor-led, outside providers and on-the-job training were the most utilized methods to educate personnel in 2022.

Which of the following education methods do you use to educate personnel? Select all that apply.

<table>
<thead>
<tr>
<th>Method</th>
<th>Senior executive</th>
<th>Project management</th>
<th>Field management/superintendent</th>
<th>Craft/trade</th>
<th>Average</th>
</tr>
</thead>
<tbody>
<tr>
<td>Face-to-face, instructor-led, outside provider</td>
<td>65%</td>
<td>64%</td>
<td>67%</td>
<td>65%</td>
<td>65%</td>
</tr>
<tr>
<td>On-the-job training</td>
<td>80%</td>
<td>80%</td>
<td>80%</td>
<td>80%</td>
<td>80%</td>
</tr>
<tr>
<td>Face-to-face, instructor-led, internal provider</td>
<td>50%</td>
<td>50%</td>
<td>50%</td>
<td>50%</td>
<td>50%</td>
</tr>
<tr>
<td>Online, instructor-led</td>
<td>40%</td>
<td>40%</td>
<td>40%</td>
<td>40%</td>
<td>40%</td>
</tr>
<tr>
<td>Online, self-paced (no instructor)</td>
<td>30%</td>
<td>30%</td>
<td>30%</td>
<td>30%</td>
<td>30%</td>
</tr>
<tr>
<td>Through a trade association</td>
<td>20%</td>
<td>20%</td>
<td>20%</td>
<td>20%</td>
<td>20%</td>
</tr>
<tr>
<td>Through colleges/universities/vocational programs</td>
<td>10%</td>
<td>10%</td>
<td>10%</td>
<td>10%</td>
<td>10%</td>
</tr>
<tr>
<td>Virtual reality or augmented reality</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
</tr>
</tbody>
</table>
70% of respondents have used virtual reality or augmented reality for safety education.

Which of the following categories of virtual reality or augmented reality have you used for education? Select all that apply.

- Safety education: 70%
- Upskilling: 60%
- Knowledge education: 45%
- Operation of equipment: 25%

All respondents, percent of total
Safety Education
Almost 76% of respondents use or are planning to start using safety technology.
Executive management personnel were the group most commonly identified as the decision-makers when purchasing and deploying safety technology.

Who is involved in the identification and decision to purchase and deploy safety technology?
All respondents, percent of total

- Executive management: 39%
- Field leadership and supervision: 26%
- Safety specialist: 24%
- Craft workers: 11%

What safety technology are you using today or planning to use in the future? Check all that apply.
All respondents, percent of total

- Jobsite monitoring: 62%
- Safety information management system: 56%
- Safety documentation app: 46%
- Compliance management system: 44%
- Wearables: 30%
- Innovative tools: 24%
- Jobsite security (smart badges and gates): 23%
- COVID-19 tracking: 17%
- Internet of Things: 14%
- Virtual reality: 7%
- Artificial intelligence: 6%
- Other: 4%
Field leaders and supervisors were among the top users of safety technologies.

Within your company, who utilizes deployed safety technologies? Check all that apply.
All respondents, percent of total

- Field leadership and supervisors: 83%
- Safety specialists: 66%
- Craft workers: 63%
- Executive management: 61%
The majority of respondents used companies other than those listed for purchasing or deploying safety technology.

Which technology companies do you use, or have you used to research, purchase or deploy safety technology?
All respondents, percent of total

- Other: 54%
- SafetyReports.com: 20%
- Safesite: 8%
- Procore: 7%
- Real Time Risk Solutions (RTRS): 4%
- Sitedocs: 2%
- Triax: 2%
- Pillar: 1%
- Smartvid.io: 1%
- MyComply: 1%
- Guardhat: 1%

Other includes safety meetings online, SiteDocs, internal platforms and more.
Contractor Survey
Demographics
Specialty trade, electrical and general contractors comprised the majority of respondent company types, and 43% of respondents were presidents/CEOs.

**Which of the following best describes your company?** All respondents

- Specialty trade contractor: 22%
- Electrical contractor: 22%
- General contractor: 22%
- Other (please describe): 13%
- Mechanical contractor: 11%
- Heavy/highway/utility: 4%
- Construction manager: 3%
- Plumbing contractor: 3%
- Engineering firm: 0%

**Which of the following best describes your role?** All respondents

- President/CEO: 43%
- Other: 17%
- Vice president: 16%
- Human resources director: 6%
- General manager: 5%
- Chief financial officer: 3%
- Chief operating officer: 3%
- Project manager/superintendent: 3%
- Training director: 3%
Nearly two-thirds of respondents (64%) reported annual revenue of less than $24.9 million.

Which of the following best describes your company's annual construction revenue?
All respondents, percent of total

- <$10 million: 41%
- $10 million to $24.9 million: 23%
- $25 million to $49.9 million: 10%
- $50 million to $99.9 million: 9%
- $100 million to $499.9 million: 4%
- $500 million to $999.9 million: 3%
- $1 billion+: 1%

How many people are employed (both hourly and salary) by your company at its seasonal peak?
All respondents, percent of total

- <50: 47%
- 50-100: 22%
- 101-150: 9%
- 151-200: 4%
- 201-250: 2%
- 251-300: 2%
- 301-350: 1%
- 351-400: 1%
- 401-450: 1%
- 451-500: 1%
- >500: 11%
The percentage of Hispanic course attendees rose slightly in 2023.

In your company, what percentage (%) of craft/trade course attendees are of the following race/ethnic groups?
All respondents, percent of total
Employees ages 30 to 39 comprise the largest share of member workforces.

In your company, what percentage (%) of your company's workforce falls into the following age groups?
All respondents, percent of total

- 18-29: 22%
- 30-39: 28%
- 40-49: 23%
- 50-59: 18%
- 60+: 9%
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