

Quality Coaching is Centered on Education-to-Career Outcomes

Principle 1

- **Principle 1: Centered on education-to-career-outcomes**
- Principle 2: Driven by student agency
- Principle 3: Foundation and universal
- Principle 4: Rooted in relationships
- Principle 5: Informed by data and evidence



This principle emphasizes guidance and support that help students choose educational pathways aligned with their career goals, while providing clear, relevant information about job opportunities, earnings, and labor market outcomes.

In practice, this approach enables students to make informed decisions that align their education with meaningful career outcomes. It is especially critical for students with limited access to informal guidance, as it advances equity by

providing information and support to students furthest from opportunity.

Research on this Quality Coaching principle points to a clear pattern: students benefit from early, proactive, and personalized career guidance grounded in clear labor market information, yet implementation remains inconsistent, especially in direct student support. The strongest impacts are seen for students with less access to strong social capital and networks.

What the Evidence Shows¹

Students often misperceive labor market outcomes, but respond to clear, tailored information.

Studies show mixed patterns of misperception: community college students tend to overestimate earnings while underestimating employment rates,² whereas some majors at four-year institutions (e.g., psychology) overestimate educational requirements without inflating salary expectations.³

Major-specific, institution-relevant labor market information influences student preferences.

When students receive outcomes data tied to their own institution or field of study, many shift preferences toward higher-return majors. These effects are even stronger for undecided students.⁴ Evidence also demonstrates students from higher-income or privately educated backgrounds are more likely to adjust behaviors in response to LMI linked to majors.⁵

Structured early career exploration builds self-efficacy, agency, and persistence in the first year of college.

First-year seminars and career-focused courses consistently increase students' career self-efficacy and confidence in conducting career research.⁶ Participation also is associated with stronger major retention, with students in career seminars nearly three times more likely to remain in their major for STEM majors.⁷

Spotlighting Effective Practices and Models in the Research

Career-focused first-year seminars are offered at four-year institutions across a range of disciplines, including both STEM and non-STEM fields such as the chemical and life sciences and communications. These seminars integrate career exploration, self-assessment, and exposure to professional pathways directly into first-year coursework through activities such as guest speakers, resume development, and reflective assignments aligned with real-world applications. Students report stronger confidence in their academic and career direction, including gains in career persistence self-efficacy and clearer understanding of career options tied to their majors. However, because these courses often are not required and may involve self-selection, expanding access across all disciplines is important to ensure that undecided and underrepresented students can benefit from early career exposure.⁸

Integrated state-level LMI platforms are developed by state higher education agencies and workforce organizations to connect postsecondary programs with labor market outcomes, with examples including California's LaunchBoard, Virginia's Education Wizard, and Colorado's Launch My Career. These tools allow students and advisors to explore wages, job demand, and return on investment, while also informing institutional decisions about program design and alignment with employer needs. The use of platforms improves transparency for students, supports program planning and curriculum alignment, enhances advising conversations, and aids workforce planning by identifying gaps between labor supply and demand. At the same time, their impact depends on digital literacy and active facilitation, as students with limited access to technology or guidance may struggle to navigate these tools, interpret the information they provide, and may not fully benefit without intentional support.⁹

Endnotes

¹[A group of national experts developed the five Principles for Quality Education-to-Career Guidance, which guided this systematic literature review.](#)

The review examined U.S.-based peer-reviewed and high-quality grey literature published between 2016 and 2025, including studies, policy briefs, and reports focused on high school and higher education populations. Sources were selected using replicable inclusion criteria to ensure relevance to education-to-career coaching and guidance practices.

²Rachel Baker, Eric Bettinger, Brian Jacob, and Ioana Marinescu. "The effect of labor market information on community college students' major choice." *Economics of Education Review* 65 (August 2018): 18–30.

³Chehalis M. Strapp, Danica J. Drapela, Cierra I. Henderson, Emily Nasciemento, and Lauren J. Roscoe. "Psychology students' expectations regarding educational requirements and salary for desired careers." *Teaching of Psychology* 45, no. 1 (January 2018): 6–13.

⁴Fulya Ersoy and Jamin D. Speer. "Opening the black box of college major choice: Evidence from an information intervention." *Journal of Economic Behavior & Organization* 231 (March 2025): 1–36.

⁵Baker et al., "The effect of labor market information on community college students' major choice."

⁶Nadya A. Fouad, Arpita Ghosh, Wen-hsin Chang, Catia Figueiredo, and Thomas Bachhuber. "Career exploration among college students." *Journal of College Student Development* 57, no. 4 (May 2016): 460–464; Stephen A. Klien, John W. Elmer, and Patrick J. Rottinghaus. "Using a career research project in the introductory communication course to develop agency, self-efficacy, self-determination, and adaptability in career exploration." *Journal of Communication Pedagogy* 8 (2024): 24–47.

⁷Christopher T. Belser, Diandra J. Prescod, Andrew P. Daire, Melissa A. Dagley, and Cynthia Y. Young. "Predicting undergraduate student retention in STEM majors based on career development factors." *The Career Development Quarterly* 65, no. 1 (March 2017): 88–93.

⁸Deborah S. Goldberg and Ganesh Sriram. "Assessment of short and longer-term impacts of a 1-credit chemical engineering first-year seminar." *Chemical Engineering Education* 56, no. 3 (Summer 2022): 156–164; Amy Liu, Casey Shapiro, Jess Gregg, Marc Levis-Fitzgerald, Erin Sanders O'Leary, and Rachel L. Kennison. "Scaling up a life sciences college career exploration course to foster STEM confidence and career self-efficacy." *Research in Science & Technological Education* 42, no. 2 (June 2024): 378–394; Klein et al., "Using a career research project in the introductory communication course to develop agency, self-efficacy, self-determination, and adaptability in career exploration."

⁹Anthony P. Carnevale, Tanya I. Garcia, and Artem Gulish. "Career Pathways: Five Ways to Connect College and Careers." (Washington, DC: Georgetown University Center on Education and the Workforce, 2017).

Quality Coaching is Driven by Student Agency

Principle 2

- Principle 1: Centered on education-to-career-outcomes
- Principle 2: Driven by student agency
- Principle 3: Foundation and universal
- Principle 4: Rooted in relationships
- Principle 5: Informed by data and evidence



This principle emphasizes supporting students in identifying their interests, values, and goals, while providing personalized guidance that reflects their identities and circumstances and builds the skills, mindsets, and confidence needed to pursue their chosen paths.

In practice, this approach positions students as the authors of their own education-to-career journeys, supported by a community that strengthens their confidence, mindsets, and readiness to pursue their goals. It also centers students' backgrounds and experiences, helping them make informed

choices that are meaningful and aligned with who they are and what they value.

Research on this Quality Coaching principle suggests that early, strengths-based, culturally responsive, and structured career supports can build student confidence, clarify pathways, and strengthen connections between education and careers. However, these benefits are not equally realized, as students from historically marginalized backgrounds continue to face systemic barriers.

What the Evidence Shows¹

High school career supports that center student backgrounds build confidence and expand pathways, especially for young women and rural students. Multi-week STEM curricula and collaboration between counselors and science teachers help students identify strengths, explore career values, and understand postsecondary and workforce options beyond their local context.²

Strengths-based, interest-aligned assessments increase career self-efficacy when paired with coaching. Career assessments embedded in college-level career or life-planning courses lead to gains in decision-making confidence, exploratory behavior, clarity of career goals, and satisfaction with career information.³

Perceived barriers shape how students engage with career exploration and support. Although student experiences with career exploration vary across backgrounds and circumstances, research within the collegiate context frequently examines the

experiences of underserved and historically marginalized students, particularly Latina, low-income, first generation, and undocumented students. Because identity can shape a student's perceptions of barriers when navigating education-to-career pathways, these students commonly experience financial, time, and networking constraints that influence confidence and career decision-making. They often rely on faculty and supervisors for trusted guidance, as traditional networking activities may not resonate equally across disciplines or student backgrounds.⁴

Spotlighting Effective Practices and Models in the Research

Possibilities in Postsecondary Education and Science

(PiPES) is a researcher-designed career exploration curriculum implemented in rural Appalachian high schools in Tennessee to increase awareness of STEM (Science, Technology, Engineering, Math, and Medical Science) pathways and postsecondary options. Delivered by high school staff over a six-hour curriculum, the program integrates career exploration tools, online assessments, and information on college affordability. A defining feature of PiPES is its emphasis on connecting STEM careers to students' cultural and community values, an approach intended to resonate with the interdependent context of rural Appalachian youth. The curriculum also helps students identify careers aligned with their interests and better understand education pathways and earnings potential. Evaluation of student and staff data suggest the program is engaging and useful, with students reporting increased knowledge of career options, college planning, and future earnings. While students valued the exposure to new information, they also expressed interest in deeper learning about specific careers, college pathways, and life skills.⁵

Idaho "Build Your Future" Program is a structured, state-based career and financial readiness initiative developed by the Idaho 4-H Youth Development Office. It guides high school students through a series of learning activities that help them identify their interests, skills, and values, and connect them to potential careers, college majors, and postsecondary pathways. Students engage in activities such as career research, interviews, internships, portfolio development, and learning about how postsecondary education affects earnings. The program also includes financial planning content (e.g., understanding loans, credit, and investing) and an optional college campus visit to provide real-world exposure to higher education environments. Evaluation data show strong gains across multiple measures of career readiness. Students demonstrated substantial increases in their ability to identify career pathways, understand required education and skills, research salaries and benefits, and recognize funding options for postsecondary education. Overall, the program significantly improved students' knowledge, confidence, and decision-making skills related to education, careers, and financial planning.⁶

Endnotes

¹ [A group of national experts developed the five Principles for Quality Education-to-Career Guidance, which guided this systematic literature review.](#)

The review examined U.S.-based peer-reviewed and high-quality grey literature published between 2016 and 2025, including studies, policy briefs, and reports focused on high school and higher education populations. Sources were selected using replicable inclusion criteria to ensure relevance to education-to-career coaching and guidance practices.

²Autumn L. Cabell, Dana Brookover, Amber Livingston, and Ila Cartwright. "It's never too late: High school counselors' support of underrepresented students' interest in STEM." *Professional Counselor* 11, no. 2 (May 2021): 143-160; Melinda M. Gibbons, Erin E. Hardin, Anna Lora Taylor, Emily Brown, and Danielle Graham. "Evaluation of an SCCT-based intervention to increase postsecondary awareness in rural Appalachian youth." *Journal of Career Development* 47, no. 4 (August 2020): 424-439.

³Cabell et al., "It's never too late: High school counselors' support of underrepresented students' interest in STEM."; Rhea L. Owens, Thomas C. Motl, and Thomas S. Krieschok. "A comparison of strengths and interests protocols in career assessment and counseling." *Journal of Career Assessment* 24, no. 4 (November 2016): 605-622.

⁴Kelsey L. Autin, Ryan D. Duffy, Caitlin J. Jacobson, Kabeel M. Dosani, Dominique Barker, and Elizabeth M. Bott. "Career development among undocumented immigrant young adults: A psychology of working perspective." *Journal of Counseling Psychology* 65, no. 5 (October 2018): 605-617; Kenneth J. Levine, and Melinda Aley. "Career barriers affecting first-generation college students: Can socializing messages increase career confidence?" *Southern Communication Journal* 86, no. 5 (November-December 2021): 498-510; Rosemary J. Perez., Liane I. Hypolite, Genia M. Bettencourt, and Ronald E. Hallett. "How the game is played: Low-income students' experiences with career development programming." *Journal of Postsecondary Student Success* 4, no. 3 (Spring 2025): 56-81; Cassandra A. Storlie, S. Jeffery Mostade, and Deborah Duenyas. "Cultural trailblazers: Exploring the career development of Latina first generation college students." *The Career Development Quarterly* 64, no. 4 (December 2016): 304-317.

⁵Gibbons et al., "Evaluation of an SCCT-based intervention to increase postsecondary awareness in rural Appalachian youth." *Journal of Career Development* 47, no. 4 (2020): 424-439.

⁶Nancy Marie Shelstad, Carrie Clarich, and Suzann H. Dolecheck. "Build your future: Connecting career exploration and postsecondary education." *Journal of Youth Development* 15, no. 5 (September 2020): 159-171.

Quality Coaching is Foundational and Universal

Principle 3

- Principle 1: Centered on education-to-career-outcomes
- Principle 2: Driven by student agency
- Principle 3: Foundation and universal
- Principle 4: Rooted in relationships
- Principle 5: Informed by data and evidence



This principle ensures all students receive education-to-career guidance early in college and continually throughout their education without having to go out of their way and leveraging technology to provide guidance at scale.

In practice, this approach reflects a coordinated, system-wide commitment to supporting students, including the strategic use of technology to expand access and advance equity. It requires a comprehensive ecosystem of support, in which guidance is intentionally embedded across programs, transitions, and reentry points – from high school through higher education – ensuring that students receive consistent, connected, and responsive support at each stage of their educational journey.

Research on this Quality Coaching principle supports embedding career advising into academic experiences, particularly through first-year seminars, guided pathways, and the integration of career services into curriculum. These approaches are most effective when they are aligned with students' developmental stages and supported by coordinated systems that connect academic and career learning. Early career exposure, industry partnerships, and integrated supports are important for strengthening students' career clarity and readiness. However, further large-scale, longitudinal research is needed to better understand long-term impacts and effectiveness across disciplinary fields.

What the Evidence Shows¹

Technology expands access but works best when paired with human support. Digital advising and artificial intelligence-enabled platforms increase engagement, career knowledge, and self-efficacy, particularly for first-generation and underrepresented students. At the same time, these technologies introduce new challenges. Although AI systems can provide clear, structured information, they may miss the personalization, contextual understanding, and empathy that human advisors offer.²

Embedding career development into required college coursework increases impact. Credit-bearing first-year and general education courses that integrate reflection, identity exploration, and structured advising improve career confidence and decision-making among undergraduate students.³ Optional or noncredit formats may limit reach and sustainability as well as faculty and advisor coordination, which is essential to prevent career development from becoming siloed across departments.⁴

Integrated credential and occupational pathways improve outcomes for adult learners. When community colleges embed stackable credentials, occupational instruction, and proactive career counseling directly into coursework rather than treating them as add-ons, adult learners are more likely to complete programs and transition into in-demand careers.⁵

Integration of career services into academic structures improves student career outcomes. Embedding career services staff into academic structures — such as courses, advising, and curricular modules — consistently improves students’ career readiness, confidence, and ability to articulate employer-valued skills.⁶ Evidence shows that repeated and early exposure through credit-bearing courses, embedded modules, and ongoing touchpoints helps students develop transferable skills and internalize career preparation as part of their academic experience, rather than a one-time activity.⁷

Early, ecosystem-based exposure in high school improves transitions. Career academies, Career and Technical pathways, and dual enrollment programs create structured, coherent career preparation for high school students. When educators, employers, and community partners coordinate, students experience clearer bridges to postsecondary education and the workforce.⁸

Guided pathways that integrate career touchpoints across the college journey improve career planning. Career maps, meta-majors, and proactive advising help

students align academic planning with workforce outcomes. Within guided pathway models, holistic, relationship-centered advising supports goal setting, exploration, and long-term planning, advancing a “career everywhere” approach.⁹

Cross-sector partnerships enable systems-level change. Sustainable impact requires coordination among faculty, advisors, employers, alumni, and community stakeholders. Aligned systems across K–12, postsecondary, and workforce sectors strengthen long-term student success.¹⁰

Spotlighting Effective Practices and Models in the Research

Guided Pathways is a comprehensive higher education reform model predominantly implemented at community colleges across multiple states to redesign the student experience by clarifying program pathways and aligning academic and career planning. A defining feature of this approach is the integration of structured advising systems, including trained advisors who use career assessments and students’ goals to guide academic planning, along with institutional use of meta-majors, program maps, and tiered advising supported by dedicated advising staff. The model embeds career exploration and goal setting from onboarding through completion, ensuring students remain on track toward credential attainment while connecting learning to long-term career outcomes.¹¹ *The Ohio Community College System* implemented a Guided Pathways framework across 23 institutions to strengthen connections between academic programs and career outcomes. Its approach embeds career exploration throughout the student journey, using tools such as labor market data systems, degree planners, and experiential learning opportunities such as internships and co-ops. This model improves career readiness and academic engagement, particularly for adult learners, by supporting more informed program selection, stronger alignment with workforce needs, and increased access to career development resources.¹²

National Academy Foundation career academies are structured, career-themed learning communities implemented across multiple states that integrate rigorous academics with career-focused coursework, work-based learning, and industry partnerships. A defining feature of this model is the collaboration between teachers, career-focused staff, and industry partners who co-develop curriculum, provide mentoring, and support students through internships and career exploration experiences. Students engage in project-based learning, earn industry certifications, and participate in structured experiences such as job shadowing and networking events. These academies improve career awareness, technical skills, and postsecondary preparation, with success dependent on strong curricular coherence, employer engagement, and integrated student supports.¹³

The Thompson Scholars Program (TS) at the University of Nebraska system is a comprehensive college transition and support model that combines structured advising, mentorship, and career development activities for low-income and first-generation students. A defining feature of the program is the role of dedicated staff who provide consistent, relationship-centered advising, career guidance, and developmental support throughout students’ first two years. Students participate in career-focused activities such as resume workshops, mock interviews, and career fairs, alongside academic and social programming that reinforces their development. TS significantly increases students’ major and career self-efficacy, helping them build confidence, clarify their goals, and make informed decisions about their academic and career pathways.¹⁴

Endnotes

- ¹ [A group of national experts developed the five Principles for Quality Education-to-Career Guidance which guided this systematic literature review.](#) The review examined U.S.-based peer-reviewed and high-quality grey literature published between 2016 and 2025, including studies, policy briefs, and reports focused on high school and higher education populations. Sources were selected using replicable inclusion criteria to ensure relevance to education-to-career coaching and guidance practices.
- ² Briggs, Amanda, and Stephanie Petrov. *Career Services Strategies to Advance Equity: Findings from Four Institutions in the ACE-UP Community of Practice*. Urban Institute, 2024; Lee, Terri, Krithika Jagannath, Nitin Aggarwal, Ramamurti Sridar, Shawn Wilde, Timothy Hill, and Yu Chen. 2019. "Intelligent Career Advisers in Your Pocket? A Need Assessment Study of Chatbots for Student Career Advising." AMCIS 2019 Proceedings, 14. AISEL record. Lekan, Kasra, and Zachary A. Pardos. "AI-Augmented Advising: A Comparative Study of GPT-4 and Advisor-Based Major Recommendations." *Journal of Learning Analytics* 12, no. 1 (2025): 110-128.; Marquez, Marisa & Hayward, Craig. "Bakersfield College high-tech, high-touch career counseling and advising". In C. Fountain & I. Portillo (Eds.), *Career advising as a tool for student success and educational equity*. University of South Carolina, National Resource Center for The First-Year Experience & Students in Transition. (2021): 9-14. Moran, Nora, and David Ackerman. ""Can AI really help me land a job?" Student reactions to the use of artificial intelligence in career preparation." *Journal of Education for Business* 99, no. 2 (2024): 103-112.; Okado, Yuko, Benjamin D. Nye, Angelica Aguirre, and William Swartout. "How Can Virtual Agents Scale Up Mentoring?: Insights from College Students' Experiences Using the CareerFair. ai Platform at an American Hispanic-Serving Institution." *International Journal of Artificial Intelligence in Education* 35, no. 4 (2025): 2596-2615.
- ³ Belser, Christopher T., Diandra J. Prescod, Andrew P. Daire, Melissa A. Dagley, and Cynthia Y. Young. "Predicting undergraduate student retention in STEM majors based on career development factors." *The Career Development Quarterly* 65, no. 1 (2017): 88-93.; Belser, Christopher T., Diandra J. Prescod, Andrew P. Daire, Melissa A. Dagley, and Cynthia Y. Young. "The influence of career planning on career thoughts in STEM interested undergraduates." *The Career Development Quarterly* 66, no. 2 (2018): 176-181.; Favre, Cynthia. "Gustavus Adolphus College: Design a future: A career exploration Course". In C. Fountain & I. Portillo (Eds.), *Career advising as a tool for student success and educational equity*. University of South Carolina, National Resource Center for The First-Year Experience & Students in Transition. (2021): 23-29.; Fouad, Nadya A., Arpita Ghosh, Wen-hsin Chang, Catia Figueiredo, and Thomas Bachhuber. "Career exploration among college students." *Journal of College Student Development* 57, no. 4(2016): 460-464; Hypolite, Liane I., Joseph A. Kitchen, and Adrianna Kezar. "Developing major and career self-efficacy among at-promise students: The role of a comprehensive college transition program." *Journal of College Student Retention: Research, Theory & Practice* 26, no. 4 (2025): 1028-1052.; Klein, Stephen A., John W. Elmer, and Patrick J. Rottinghaus. "Using a career research project in the introductory communication course to develop agency, self-efficacy, self-determination, and adaptability in career exploration." *Journal of Communication Pedagogy* 8 (2024): 24-47. Kitchen, Joseph A., Adrianna Kezar, and Liane I. Hypolite. "At-promise college student major and career self-efficacy ecology model." *Journal of Diversity in Higher Education* 16, no. 3 (2023): 369-383.; Krsmanovic, Masha. "Course Redesign: Implementing Project-Based Learning to Improve Students' Self-Efficacy." *Journal of the Scholarship of Teaching and Learning* 21, no. 2 (2021): 93-106.
- ⁴ Rideau, Raylea, Griffin, Ann McAdam, & Passo, Michelle. "Rice University: ProfessionOwl program". In C. Fountain & I. Portillo (Eds.), *Career advising as a tool for student success and educational equity*. University of South Carolina, National Resource Center for The First-Year Experience & Students in Transition. (2021): 48-52. Streufert, Billie, Capers, Willette, Brunick, Lisa, & Rives-East, Darcie. "Augustana University flipped career advising first-year curriculum". In C. Fountain & I. Portillo (Eds.), *Career advising as a tool for student success and educational equity*. University of South Carolina, National Resource Center for The First-Year Experience & Students in Transition. (2021): 1-8.
- ⁵ Dikhtyar, Oksana, Phyllis Ann Cummins, Kathryn McGrew, and Peter Riley Bahr. "Strategies employed by Ohio community colleges to improve labor market outcomes for older students." *Community College Journal of Research and Practice* 45, no. 9 (2021): 619-630.; Martinson, Karin, Sung-Woo Cho, Karen Gardiner, and Asaph Glosser. "Washington State's Integrated Basic Education and Skills Training (I-BEST) Program in Three Colleges: Implementation and Early Impact Report. Pathways for Advancing Careers and Education. OPRE Report No. 2018-87." *Administration for Children & Families* (2018).; Rolston, Howard, Consultant Elizabeth Copson, and Larry Buron. "Valley Initiative for Development and Advancement (VIDA): Three-Year Impact Report A Pathways for Advancing Careers and Education (PACE)/Career Pathways Intermediate Outcomes Study Publication." (2021).

Continued

Endnotes

⁶Briggs and Petrov, "Career Services Strategies to Advance Equity"; Dikhtyar et al., "Strategies Employed by Ohio Community Colleges to Improve Labor Market Outcomes for Older Students."; Okado, Yuko, Benjamin D. Nye, Angelica Aguirre, and William Swartout. "Can Virtual Agents Scale Up Mentoring? Insights from College Students' Experiences Using the CareerFair.ai Platform at an American Hispanic-Serving Institution." In *Artificial Intelligence in Education: 24th International Conference, AIED 2023*, Tokyo, Japan, July 3–7, 2023, Proceedings, edited by Ning Wang, Genaro Rebolledo-Mendez, Noboru Matsuda, Olga C. Santos, and Vania Dimitrova, 189–201. Cham: Springer, 2023.

⁷Janes, Kaitlin. "SUNY Old Westbury College: Sophomore shadow program". In C. Fountain & I. Portillo (Eds.), *Career advising as a tool for student success and educational equity*. University of South Carolina, National Resource Center for The First-Year Experience & Students in Transition. (2021): 53–58. Streufert et al., "Augustana University Flipped Career Advising First-Year Curriculum."; Rideau, Griffin, and Passo, "Rice University: ProfessionOwl Program."

⁸Fletcher Jr, Edward C., Nathalie Q. Warren, and Victor M. Hernández-Gantes. "Preparing high school students for a changing world: College, career, and future ready learners." *Career and Technical Education Research* 43, no. 1 (2018): 77–97.; Hernandez-Gantes, Victor M., and Edward C. Fletcher. "The High School Career Academy as a Model for Promoting Technological Preparation: Promising Practices and Challenges in the United States." In *Vocational Education and Training in the Age of Digitization: Challenges and Opportunities*, edited by Eveline Wuttke, Jürgen Seifried, and Helmut M. Niegemann, 169–186. Opladen, Berlin, and Toronto: Verlag Barbara Budrich, 2020.; Griffin, Sarah, Jessica Steiger, Aurely Garcia Tulloch, John Fink, and Davis Jenkins. "Dual enrollment equity pathways: A research-based framework for expanding college and career opportunity for underserved students." *New Directions for Community Colleges* 2024, no. 207 (2024): 47–60.; Hines, Erik M., Edward C. Fletcher Jr, James L. Moore III, and Donna Y. Ford. "Culturally responsive postsecondary readiness practices for Black males: Practice and policy recommendations for school counselors." *Journal of school based counseling policy and evaluation* 45, no. 1 (2022); 32–43. Malin, Joel R., and Donald G. Hackmann. "Enhancing students' transitions to college and careers: A case study of distributed leadership practice in supporting a high school career academy model." *Leadership and Policy in Schools* 16, no. 1 (2017): 54–79.; Sludden, John, and James J. Kemple. "High School Advising: Exploring NYC Students' Perceptions of School-Based Support for College and Career Transitions. Research Report." *Research Alliance for New York City Schools* (2024).; Torre Gibney, Thomas, and Mary Rauner. "Education and Career Planning in High School: A National Study of School and Student Characteristics and College-Going Behaviors. REL 2022-127." *Regional Educational Laboratory West* (2021).

⁹Klempin, Serena, and Hana Lahr. "How Ohio Community Colleges are Using Guided Pathways to Personalize Student Support." *Community College Research Center, Teachers College, Columbia University* (2021).; Marquez and Hayward, "Bakersfield College High-Tech, High-Touch Career Counseling and Advising."

¹⁰Briggs and Petrov, *Career Services Strategies to Advance Equity*; Dikhtyar et al., "Strategies Employed by Ohio Community Colleges to Improve Labor Market Outcomes for Older Students." Fletcher Jr., Warren, and Hernández-Gantes, "Preparing High School Students for a Changing World"; Hernandez-Gantes and Fletcher, "The High School Career Academy as a Model for Promoting Technological Preparation"; Hines et al., "Culturally Responsive Postsecondary Readiness Practices for Black Males"; Hypolite, Kitchen, and Kezar, "Developing Major and Career Self-Efficacy Among At-Promise Students"; Janes, "SUNY Old Westbury College: Sophomore Shadow Program"; Streufert et al., "Augustana University Flipped Career Advising First-Year Curriculum."

¹¹Lahr, H., Klempin, S. C., & Jenkins, D. (2023). *Innovating at Scale: Guided Pathways Adoption and Early Student Momentum among the AACC Pathways Colleges*. Report. Community College Research Center, Teachers College, Columbia University.

¹²Dikhtyar et al., "Strategies Employed by Ohio Community Colleges to Improve Labor Market Outcomes for Older Students."; Lahr, Hana Elizabeth, Serena Constance Klempin, and Davis Jenkins. "Innovating at scale: Guided pathways adoption and early student momentum among the AACC pathways colleges." (2023).

¹³Hernandez-Gantes and Fletcher, "The High School Career Academy as a Model for Promoting Technological Preparation"; Hines et al., "Culturally Responsive Postsecondary Readiness Practices for Black Males."

¹⁴Hypolite, Kitchen, and Kezar, "Developing Major and Career Self-Efficacy Among At-Promise Students"; Kitchen, and Kezar, "Developing Major and Career Self-Efficacy Among At-Promise Students".

Quality Coaching is Rooted in Relationships

Principle 4

- Principle 1: Centered on education-to-career-outcomes
- Principle 2: Driven by student agency
- Principle 3: Foundation and universal
- Principle 4: Rooted in relationships
- Principle 5: Informed by data and evidence



This principle emphasizes grounding education-to-career coaching in trusted relationships with faculty, staff, and coaches, while intentionally connecting students to networks, resources, and services that support their goals. It centers engagement with students' communities of support, including family, peers, and mentors, as critical to confidence, persistence, and long-term success.

In practice, this approach positions a broader community of support around students, where strong relationships turn advising into real opportunities by connecting them to networks, resources, and services within and beyond the

institution. As a result, students build confidence, expand their social capital, and are better equipped to navigate their education and career pathways successfully.

Research on this Quality Coaching principle suggests that sustained, relationship-based career coaching improves students' confidence, readiness, and academic outcomes, especially when it is personalized, identity-informed, and embedded within comprehensive support systems. Evidence highlights the importance of consistent relationships, tailored programming, faculty engagement, and integrated services in driving student success.

What the Evidence Shows¹

Consistent, sustained relationships improve outcomes. Frequent, one-on-one interactions with advisors, coaches, or mentors are associated with stronger academic persistence, greater credit accumulation, and increased career confidence. Evidence shows that both the frequency and duration of engagement matter, particularly when paired with ongoing academic monitoring and timely support for students who are struggling, leading to better retention in wraparound services and support programs.²

Shared identities and personalized relationships build trust. Research highlights the importance of shared backgrounds and identities — especially for students of color and first-generation students — in fostering trust, validation, and a sense of belonging. These relationships also expand access to professional networks and information that students may not otherwise reach.³

Engaging faculty, staff, and near-peers strengthens career advising. Studies point to the value of decentralizing career guidance by equipping faculty, staff, and near-peer mentors to support students' career development. Students often report more frequent contact with faculty advisors and greater confidence in their guidance, with regular engagement increasing students' clarity and confidence about post-graduation labor market options.⁴

Integrated and comprehensive supports drive success. Programs that intentionally integrate career guidance with academic advising, tutoring, financial aid, and other support services – often through dedicated staff and coordinated teams – demonstrate positive impacts on academic progress, degree attainment, and career clarity for students. Coordinated supports allow programs to respond more effectively to students’ multiple and intersecting needs.⁵

Targeted, intensive, career-focused programs improve career readiness and earnings potential for historically underserved students. Evidence is particularly strong for low-income, first-generation students and students with disabilities, for whom these programs are associated with improved employment outcomes. These effects often are driven by sustained, trust-based relationships with staff, faculty, and employers that provide

structured mentoring and personalized guidance. For students with visual impairments, vocational rehabilitation and informed college-to-coaching relationships help students navigate accommodations, clarify career goals, and connect to employment opportunities.⁶



Spotlighting Effective Practices and Models in the Research

The Year Up program and its college-based Professional Training Corps are workforce development models implemented across multiple states that combine technical training, career coaching, internships, and employer connections to support young adults’ transition to college and careers. A defining feature of these programs is the presence of dedicated staff who provide structured coaching, monitor student progress, and coordinate academic, professional, and internship experiences in collaboration with college faculty and employer partners. This model reflects a case management approach, in which staff deliver individualized, ongoing support, track participant outcomes, and intervene as needed to address professional and personal barriers to success. The program integrates classroom learning with real-world work experiences and sustained mentorship, helping students build both technical and professional skills. Rigorous evaluation findings indicate positive impacts on participants’ earnings outcomes, the largest reported to date for workforce programs tested using a randomized controlled trial design.⁷

iMentor is a school-based mentoring model implemented in New York City that pairs high school students with mentors to build long-term, relationship-centered support for postsecondary and career readiness. A defining feature of iMentor is its structured, technology-supported mentoring relationships, which are facilitated by program staff who coordinate mentor matching, curriculum, and ongoing engagement over multiple years. The program emphasizes consistent mentor-student interaction, career exploration, and goal setting, helping students navigate postsecondary planning with guidance from a trusted adult. iMentor has been shown to improve mentoring access, career exploration skills, and postsecondary aspirations, while also increasing resilience and critical thinking skills.⁸

Endnotes

¹ [A group of national experts developed the five Principles for Quality Education-to-Career Guidance which guided this systematic literature review.](#) The review examined U.S.-based peer-reviewed and high-quality grey literature published between 2016 and 2025, including studies, policy briefs, and reports focused on high school and higher education populations. Sources were selected using replicable inclusion criteria to ensure relevance to education-to-career coaching and guidance practices.

² David Fein and Jill Hamadyk. "Bridging the Opportunity Divide for Low-Income Youth: Implementation and Early Impacts of the Year Up Program. Pathways for Advancing Careers and Education. OPRE Report 2018-65." (Washington, DC: U.S. Department of Health and Human Services, Administration for Children & Families, Office of Planning, Research and Evaluation, 2018); David Fein and Rebecca A. Maynard. "Improvement Testing in the Year Up Professional Training Corps Program: Final Grant Report." (Rockville, MD: Abt Associates, October 2022); David Fein, Rebecca Maynard, Rebecca Baelen, Azim Shivji, and Phomdaen Souvanna. "To Improve and to Prove: A Development and Innovation Study of Year Up's Professional Training Corps." (Rockville, MD: Abt Associates, October 2020). Bryan C. Hutchins, Emma Alterman, Cassie Wuest, John Sludden, and Julie A. Edmunds. "The Role of High School Career-Focused Advising in Students' Postsecondary Planning: A Qualitative Study." (Greensboro, NC: University of North Carolina at Greensboro, Early College Research Center, October 2024); Joseph A. Kitchen, Adrianna Kezar, and Liane I. Hypolite. "At-promise college student major and career self-efficacy ecology model." *Journal of Diversity in Higher Education* 16, no. 3 (June 2023): 369-383; Tamara Linkow, Erin Bumgarner, Hayley Didriksen, Kelly Lack, Austin Nichols, Emily Dastrup, Samuel Dastrup, and Beth Gamse. "The Story of Scaling Up: Interim Report on the Impact of Success Boston's Coaching for Completion." (Rockville, MD: Abt Associates, October 2019); Cynthia Miller and Michael J. Weiss. "Increasing community college graduation rates: A synthesis of findings on the ASAP model from six colleges across two states." *Educational Evaluation and Policy Analysis* 44, no. 2 (June 2022): 210-233; Cynthia Miller, Camielle Headlam, Michelle Manno, and Dan Cullinan. "Increasing Community College Graduation Rates with a Proven Model: Three-Year Results from the Accelerated Study in Associate Programs (ASAP) Ohio Demonstration." (New York: MDRC, January 2020); Susan Scrivener, Himani Gupta, Michael J. Weiss, Benjamin Cohen, Maria Scott Cormier, and Jessica Brathwaite. "Becoming College-ready: Early Findings from a CUNY Start Evaluation." (New York: MDRC, July 2018); Brett Ranon Nachman, Laura G. Maldonado, Catherine Hartman, and Sarah A. Deal. "How career coaches employed by community colleges shape students' postsecondary and professional pathways in North Carolina public high schools." *Community College Journal of Research and Practice* 48, no. 12 (December 2024): 773-788; Natassia Rodriguez Ott, Sandra Staklis, and Jonathan Boyette. "The effectiveness of student coaching in community colleges." *Community College Journal of Research and Practice* 44, no. 8 (August 2020): 549-562; Christin Spatz, Kara Romanowski, Jordan Wolfheimer, and Tanja Adonizio. "Novel career coaching model: A descriptive, interim program evaluation for undergraduate medical student career advising." *The Guthrie Journal* 73, no. 2 (December 2021): 34039.

³ Pamela E. Krieger Cohen and Ane Turner Johnson. "Career counselors self-disclosing to first-generation college students: A grounded theory study." *Journal of Career Development* 49, no. 3 (June 2022): 491-504; Ariana L. Garcia, Mary Dueñas, and Blanca E. Rincón. "Culturally responsive mentoring: A psychosociocultural perspective on sustaining students of color career aspirations in science, technology, engineering, and mathematics (STEM)." *Journal of Diversity in Higher Education* 18, no. S1 (September 2025): S461-S472; Erik M. Hines, Edward C. Fletcher Jr., James L. Moore III, and Donna Y. Ford. "Culturally responsive postsecondary readiness practices for Black males: Practice and policy recommendations for school counselors." *Journal of School-Based Counseling Policy and Evaluation* 4, no. 1 (June 2022): 32-43; Dorian L. McCoy, Courtney L. Luedke, and Rachelle Winkle-Wagner. "Encouraged or weeded out: Perspectives of students of color in the STEM disciplines on faculty interactions." *Journal of College Student Development* 58, no. 5 (July 2017): 657-673; Christopher D. Slaten, Kate Wadley, Paul C. Harris, Bini Sebastian, Jisu Lee, and Bradley R. Curs. "'We try to build relationships': The role of school community and belonging on career preparedness." *Journal of Career Development* 51, no. 5 (October 2024): 560-578.

⁴ Ashley A. Boat, Alejandra Miranda, and Amy K. Syvertsen. "Enhancing education and career pathways through peer and near-peer social capital." *Journal of Youth and Adolescence* 51, no. 7 (July 2022): 1287-1304; Neilan S. Chaturvedi and Mario A. Guerrero. "Career preparation and faculty advising: How faculty advising can improve student outcomes and prepare them for life after graduation." *Journal of Political Science Education* 19, no. 1 (2023): 34-47; Kitchen et al., "At-promise college student major and career self-efficacy ecology model"; Michael Lanford and Tattiya Maruco. "When job training is not enough: The cultivation of social capital in career academies." *American Educational Research Journal* 55, no. 3 (June 2018): 617-648; Kristin M. Vespia, Stephanie D. Freis, and Rebecca M. Arrowood. "Faculty and career advising: Challenges, opportunities, and outcome assessment." *Teaching of Psychology* 45, no. 1 (January 2018): 24-31.

Continued

Endnotes

⁵Miller and Weiss, "Increasing community college graduation rates: A synthesis of findings on the ASAP model from six colleges across two states"; Miller et al., "Increasing Community College Graduation Rates with a Proven Model: Three-Year Results from the Accelerated Study in Associate Programs (ASAP) Ohio Demonstration"; Scrivener et al., "Becoming College-ready: Early Findings from a CUNY Start Evaluation."

⁶Karla Antonelli, Jamie O'Mally, and Anne Steverson. "Participant experiences in an employment mentoring program for college students with visual impairments." *Journal of Visual Impairment & Blindness* 112, no. 3 (May-June 2018): 274-286; Karla Antonelli, Anne Steverson, and Jamie O'Mally. "College graduates with visual impairments: A report on seeking and finding employment." *Journal of Visual Impairment & Blindness* 112, no. 1 (January-February 2018): 33-45; Fein and Hamadyk. "Bridging the Opportunity Divide for Low-Income Youth: Implementation and Early Impacts of the Year Up Program. Pathways for Advancing Careers and Education. OPRE Report 2018-65"; Kitchen et al., "At-promise college student major and career self-efficacy"; Jamie O'Mally and Karla Antonelli. "The effect of career mentoring on employment outcomes for college students who are legally blind." *Journal of Visual Impairment & Blindness* 110, no. 5 (September-October 2016): 295-307; Shelley A. Phelan, Shannon M. Harding, and Amanda S. Harper-Leatherman. "BASE (broadening access to science education): A research and mentoring focused summer STEM camp serving underrepresented high school girls." *Journal of STEM Education: Innovations and Research* 18, no. 1 (January-March 2017): 65-72; James K. Winfield. "TRIO works: The impact of student support services on the career self-efficacy of first-generation students." *Opportunity Matters: Journal of Access and Opportunity in Education* 4 (Summer 2022): 102-125.

⁷Fein and Hamadyk, "Bridging the Opportunity Divide for Low-Income Youth: Implementation and Early Impacts of the Year Up Program"; Fein and Maynard, "Improvement Testing in the Year Up Professional Training Corps Program: Final Grant Report"; Fein et al., "To Improve and to Prove: A Development and Innovation Study of Year Up's Professional Training Corps."

⁸Lisa Merrill, Rachel Cole, Jasmine Soltani, and David Kang. "iMentor's College Ready Program: Examining Implementation and Impacts for 10th Graders. Report." (New York: Research Alliance for New York City Schools, December 2017).

Quality Coaching is Informed by Data and Evidence

Principle 5

- Principle 1: Centered on education-to-career-outcomes
- Principle 2: Driven by student agency
- Principle 3: Foundation and universal
- Principle 4: Rooted in relationships
- Principle 5: Informed by data and evidence



Quality Coaching emphasizes leveraging data to provide personalized and timely support, embedding evidence-based practices into programming, and measuring outcomes while continually improving through research and evaluation.

In practice, this approach promotes the continuous evaluation of ongoing programs and practices that support student communities. By systematically incorporating diverse metrics and student feedback, it facilitates the improvement of programming, the validation of existing practices, the documentation of promising innovations, and the development of an evidence base to support scalability.

In the evidence review, principle five was treated as a cross-cutting dimension. Because it centers on the evaluation of impact and outcomes and the development of an evidence base, this line of work is not examined in isolation; rather, it is integrated across the other four guiding principles and their

associated categories. The other four principles, by contrast, focus on what is done in practice, including program design, delivery, and the cultivation of relationships.

Across the four principles, the research consistently demonstrates that early, proactive, and personalized career guidance – particularly when embedded within academic experiences and grounded in strong relationships – can improve students' confidence, clarity, and readiness for career pathways. These approaches are most effective when they are developmentally aligned, culturally responsive, and connected to clear labor market information and industry engagement. Evidence also indicates that the greatest benefits accrue to students with more limited access to social capital and networks.

Opportunities to Strengthen and Extend the Evidence Base¹

Extending insights on long-term outcomes. Existing research demonstrates that engagement with labor market information helps students understand labor market trends, career pathways, and the relationship between education and employment outcomes, supporting more informed academic and career decision-making. Evidence also demonstrates meaningful short-term gains, such as increased confidence and self-efficacy in career competencies related to exploration, navigation, and choice. Building on these strong early outcomes, there is an opportunity to examine further how these interventions translate into longer-term impacts, including persistence, degree completion, career trajectories, earnings, job satisfaction, and broader economic mobility after college. Continued research also can deepen understanding of how engagement with workforce data supports diverse student populations and how it most effectively helps students connect their majors to viable and meaningful career pathways.

Refining effective delivery approaches and strengthening understanding of program design. A growing body of practice offers a range of promising approaches across advising formats (e.g., one-on-one advising, group seminars, and digital tools), coaching models, and content. Continued research can help further clarify which combinations, frequencies, and components are most effective, strengthening the impact of already valuable interventions and creating an opportunity to understand better which approaches work best for different students and contexts. Strengthening this evidence base would help practitioners tailor supports more precisely, improve student outcomes, and ensure resources are used in the most impactful way.

Expanding insights across diverse populations and contexts. There is a key opportunity to understand better how variations in coaching interventions support different

student populations and how cultural, geographic, and institutional contexts can inform more responsive and effective implementation.

Broadening the evidence across disciplines and career pathways. While much of the existing research has focused on STEM and technical fields, expanding the evidence base to include the arts, humanities, and social sciences will help ensure that all students benefit from tailored and relevant career development supports.

Advancing systems-level learning and scalable solutions. Promising work is already underway across K–12, postsecondary, and workforce systems, demonstrating the potential of coordinated approaches to support student success. Continued research can illuminate further how these efforts drive outcomes and how comprehensive models can be scaled effectively, sustainably, and cost-efficiently, ensuring they can be maintained and adapted across diverse contexts over time. There also is merit in documenting and elevating effective practices through case studies and applied research, enabling institutions and systems to learn from one another and adapt proven approaches across contexts.

Clarifying coaching's unique contribution. Coaching often is embedded within broader student support models that also include advising, workshops, and digital tools. While these bundled approaches show strong promise, further research can help isolate and better understand coaching's independent impact. Deepening this evidence would help institutions design more effective support models, make more informed investment decisions, and ensure coaching is deployed in ways that maximize student success and long-term outcomes.

¹ [A group of national experts developed the five Principles for Quality Education-to-Career Guidance, which guided this systematic literature review.](#) The review examined U.S.-based peer-reviewed and high-quality grey literature published between 2016 and 2025, including studies, policy briefs, and reports focused on high school and higher education populations. Sources were selected using replicable inclusion criteria to ensure relevance to education-to-career coaching and guidance practices.