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FROM TECH TO TOUCH 21ST CENTURY SKILLS GEN Z AND THE AGE OF AI

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ABSTRACT

This mixed methods study examines the alignment of Gen Z employees' 21st Century Soft Skills to an AI-driven workforce. Using a survey instrument with both Likert Scale and open-ended questions, 73 employers from diverse industries reflected on the need, reality, and gap in regards to four cores soft skills-collaboration, communication, creative thinking, and problem solving. Collaboration (M=3.56) received the highest ratings while problem-solving (M=2.56) was rated lowest. Despite acknowledging Gen Z's adaptability, creativity, and team orientation, employers emphasized their lack of communication, critical thinking, and time-management skills. These findings reveal the persistent need for human-centric competencies in the AI Age, and the opportunity for training, education, and on-boarding that addresses these skill gaps.

INTRODUCTION

What are 21st century competencies? Is there appropriate and consistent alignment between workplace expectations and the knowledge and skills that current graduates are learning and developing? In the age of Gen AI, these questions are not only essential, they are accelerated across all industries that are rapidly adapting to the demands of an AI-powered world. K-12 districts and schools in the US, which are both centralized in their standards-based curriculum and decentralized in how these standards get interpreted and implemented, are struggling to keep up with the rapidly changing demands of industry in the AI age.

21st Century Skills

In the age of AI, tech CEO's are giving notice to their employees and to the world that traditional powerhouse skills such as coding and engineering will soon become obsolete, replaced by Gen AI that can code and engineer faster, better, more efficiently, and less costly. Mark Zuckerberg announced his plans to start cutting coding jobs in 2025 and replace them with "AI that can effectively function as a mid-level engineer that can write code (Medium, 2025)."

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Nvidia CEO Jensen Huang announced at the 2024 World Governments Summit that coding is no longer a necessary skill (Collins, 2024). In the 21st Century, the rise of tech companies and modern technocracies have all but relegated the conversation around soft skills to well-rounded MBA programs and the business self-help section in bookstores. In a stunning turnaround, with AI displacing positions that require highly technical skills, humans with soft skills and emotional intelligence are increasingly in demand (World Economic Forum, 2024). In addition to AI and big data, the top skills of the future as described by the most recent World Economic Forum Future of Jobs Report (2025) include: "analytical thinking; creative thinking; resilience, flexibility and agility leadership and social influence, curiosity and lifelong learning, systems thinking, talent management, and motivation and self-awareness." Human-centric skills are not only core competencies today, they will grow in importance into the next decade of the 21st century.

Industry demands Soft Skills

Industry has been critical of the perceived under-preparedness in critical competencies of incoming employees, particularly in the human-centric "soft skills" such as collaboration, communication, problem-solving, and innovation (Segel & Hatami, n.d., Klapwijk & van den Burg, 2020). Employers are frustrated that many employees struggle to collaborate effectively, communicate with respect, or constructively address challenges (Szczepanek, 2023; Zilber, 2024). Some claim that they have stopped hiring recent college graduates because of their lack of motivation, inadequate problem-solving abilities, and poor communication (Blake, 2024; Mekour, 2024). Meanwhile, recent graduates claim they value purpose and flexibility but lack real-world experience (Zilber, 2024; Blake, 2024). The rise of artificial intelligence further pressures educators and policymakers to prepare students for the digital workplace, emphasizing adaptability and proficiency with online platforms (Garbarine, 2023).

Gaps in Soft Skills

Planetary disruptions and international insecurity have affected an entire generation of young people who struggle with issues such as housing insecurity, environmental crises, global pandemics, and violent conflict. Add to this uncertainty and volatility the worldwide shift in the demand for post-AI 21st Century skills that has left our educational institutions and the students in their charge in the past (Andrews-Todd & Kerr, 2019; (Barhate & Dirani, 2022; Peres & Mesquita, 2018). While K-12 schools have long understood and aimed to equip students with human competencies such as communication and problem-solving, the effectiveness of these efforts remains uncertain (McCrindle, 2020; Schwieger & Ladwig, 2018). Employers have voiced concerns about Gen Z's lack of workplace readiness, particularly their limited ability to adapt to AI-driven functions (Malik, 2023; The Job Skills Report 2024, 2023).

Independent and equitable access to information has been accomplished through modern technologies such as the Internet and smartphones. Those same technologies, empowered by Generative AI,

now make such technical skills far less valuable, making it essential for schools to shift to the development of abstract skills (Akyildiz, 2019; Peres & Mesquita, 2018). Standards-based curricula often prioritize testing over life preparation, leaving students under-equipped for adulthood (Blaschke & Hase, 2016; Blaschke, 2021; Forzani, 2014).

PURPOSE AND SIGNIFICANCE OF THE STUDY

The increasing gap between Gen Z and Gen Alpha skills and industry expectations in the AI age demands a study of what these critical areas are. This study targets employers and managers of workers aged 16-26 (CA Child Labor Laws EC 48400 and 48402) to evaluate the perceived competencies and skills gaps of young employees includes recent graduates and young professionals in early-career roles, often in industries like food service and retail, who are still developing workplace skills (Cherry, 2022). This study highlights the challenges that managers and employers across diverse industries face in working with their young employees, with a focus on their assessment of 21st century skills.

Research Design

As a mixed-methods study, we measured employers'/managers' perceptions of work readiness in young employees aged 16-26. Questions focus on the following human-centered, soft skills: collaboration, communication, creative thinking, and problem-solving. IRB approval was granted on April 31, 2024, and data collection was completed in May-July, 2024.

Instrument

This study utilizes a survey composed of both closed-ended and open-ended questions. Likert scale questions measured perceived competence of young employees in four keys 21st Century skills: collaboration, communication, creative thinking, and problem-solving using a five-point scale (1=Not Competent; 5=Highly Competent). Survey questions were adapted from existing frameworks on 21st century skills (World Economic Forum, 2024). and soft skills (Indeed, 2023; Segel & Hatami, 2023; Russell, 2024). Three open-ended questions asked respondents to provide insights into skill deficits, desirable traits, and anticipated industry trends for new hires.

Sampling

Participants of the study included Orange County (CA) employers and business owners who were recruited through social media, word of mouth, email, and in-person outreach. Of the 73 respondents, 50.7% were male and 49.3% female, representing diverse industries and coded as: business (finance, retail, service, construction, etc.) and non-business (education, law/policy, healthcare, entertainment, etc.).

RESULTS

Four primary soft skills were the focus of this analysis **(Table 1)**, in descending order of how employers rated their Gen Z employees: Collaboration (Composite Score = 15.81), Creative Thinking (Composite Score = 15.34), Communication (Composite Score = 13.49), and Problem

Solving (Composite Score = 12.95). The following results are based on a 5-point Likert Scale, where 1=Not Competent; 5=Highly Competent. For our discussion, scores that are above 3.5 are regarded as high ratings, and scores that are less than 2.5 are deemed low ratings.

Table 1. Employer Ratings of Gen Z Employees' Competencies and Composites.

Competencies	Averages
Collaboration (Composite Score = 15.81)	
Working in Terms	3.56
Working Toward a Common Goal	3.40
Recognizing the Contributions of Others	3.10
Sharing Information	3.05
Sharing the Workload	2.70
Creative Thinking (Composite Score = 15.34)	
Understanding the Point of View of Others	3.07
Thinking Outside the Box	2.95
Coming up with Alternate Solutions	2.75
Generating Original Ideas	3.12
Putting One's Own Voice or Personality into Work	3.45
Communication (Composite Score = 13.49)	
Speaking Respectfully to Peers	3.08
Speaking Respectfully to Superiors	2.95
Articulating Thoughts Clearly and Succinctly	2.73
Writing Emails or Reports that are Clear and Articulate	2.38
Effective and Proper Tone in Written Communications	2.36
Problem-Solving (Composite Score = 12.95)	
Identifying a Problem & Attempting to Solve it	2.56
Looking at a situation from a Variety of Angles	2.51
Planning and Using Time Effectively	2.37
Logical Thinking	2.70
Basic Organization Skills	2.81

Collaboration

Each of the primary skills was further sub-divided into composite skills. For Collaboration **(Figure 1)**, the composite skills included Working in Teams (M=3.56), Working Toward a Common Goal (M=3.40), Recognizing the Contributions of Others (M=3.10), Sharing Information (M=3.05), and Sharing the Workload (M=2.70).

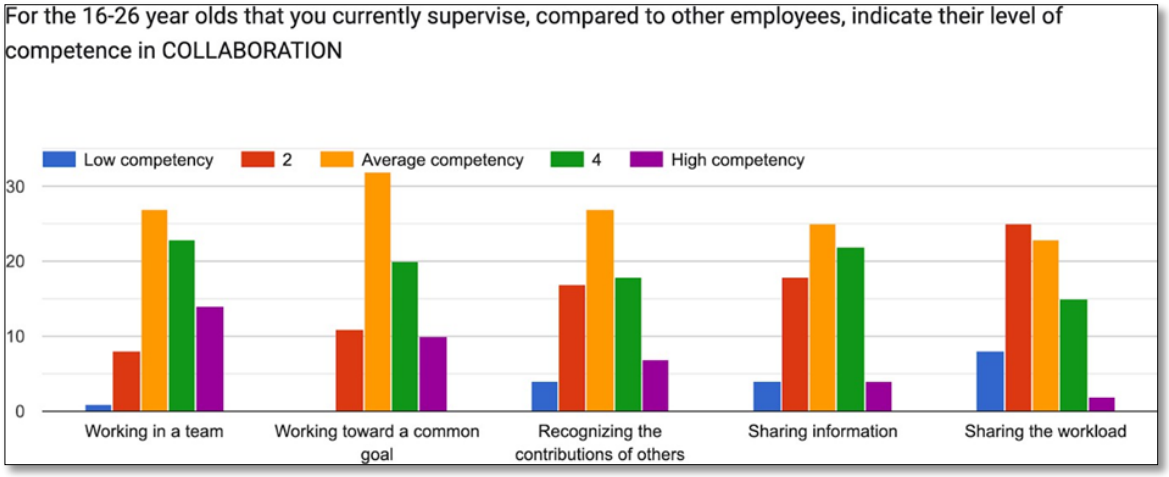

Figure 1. Collaboration Skills of Gen Z Employees (N=73).

The contrasting view of Gen Z employees as being able to work in teams (M=3.56) but poor at sharing the workload (M=2.70) reflects Gen Z's duality, willing but unproven when it comes to collaboration. When employers were asked questions in an open-ended free-response structure regarding hiring foci, they described looking for Gen Z employees who are "team players, willing to work and collaborate" and as "individuals who are not only willing to collaborate but also able to lead when needed." Consequently, one employer comments that Gen Z employees need to "work on communication and social skills as well as teamwork and collaboration." Another employer expands on this, indicating that "Gen Z prefers to communicate over technology (IM/Email), as a result, they don't work effectively as a team (helping each other out when they need it)."

Creative Thinking

Employers' ratings of Gen Z's Creative Thinking can be seen in **Figure 2**. The composite skills include Understanding the Point of View of Others (M=3.07), Thinking Outside the Box (M=2.95), Coming up with Alternate Solutions (M=2.75), Generating Original Ideas (M=3.12), and Putting One's Own Voice or Personality into Work (M=3.45).

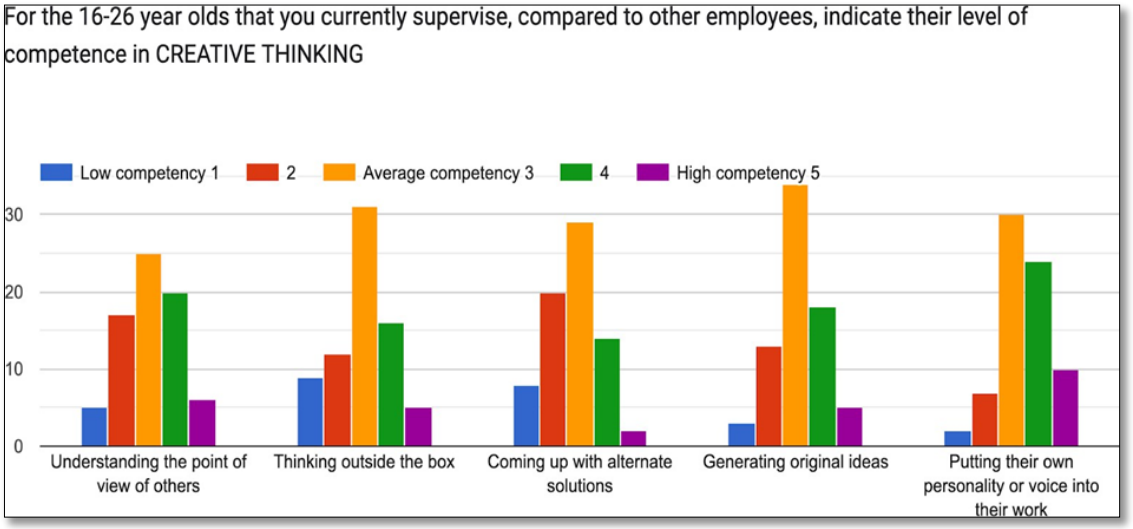

Figure 2. Creative Thinking Skills of Gen Z Employees (N=73).

Though most of the Creative Thinking skills of Gen Z employees are regarded as middle of the road, the composite skill most highly rated was their ability to put their own personality or voice into their work (M=3.45). Gen Z's ability to come up with alternate solutions (M=2.75) was the lowest-rated creativity skill. Employers "found that younger employees were a lot better at thinking out of the box with less strict rules, flourishing in creative and non-traditional roles." They also described Gen Z employees as "those who exhibit initiative, creativity" and as "passionate, empathetic hardworking individuals who tend to be very good at self-educating and learning new skills." On the other hand, one employer commented that their Gen Z employees lack "creative problem-solving [and the] willingness to engage beyond necessary conversation."

Communication

The composite skills for Communication **(Figure 3)** include Speaking Respectfully to Peers (M=3.08), Speaking Respectfully to Superiors (M=2.95), Articulating Thoughts Clearly and Succinctly (M=2.73), Writing Emails or Reports that are Clear and Articulate (M=2.38), and Effective and Proper Tone in Written Communications (M=2.36).

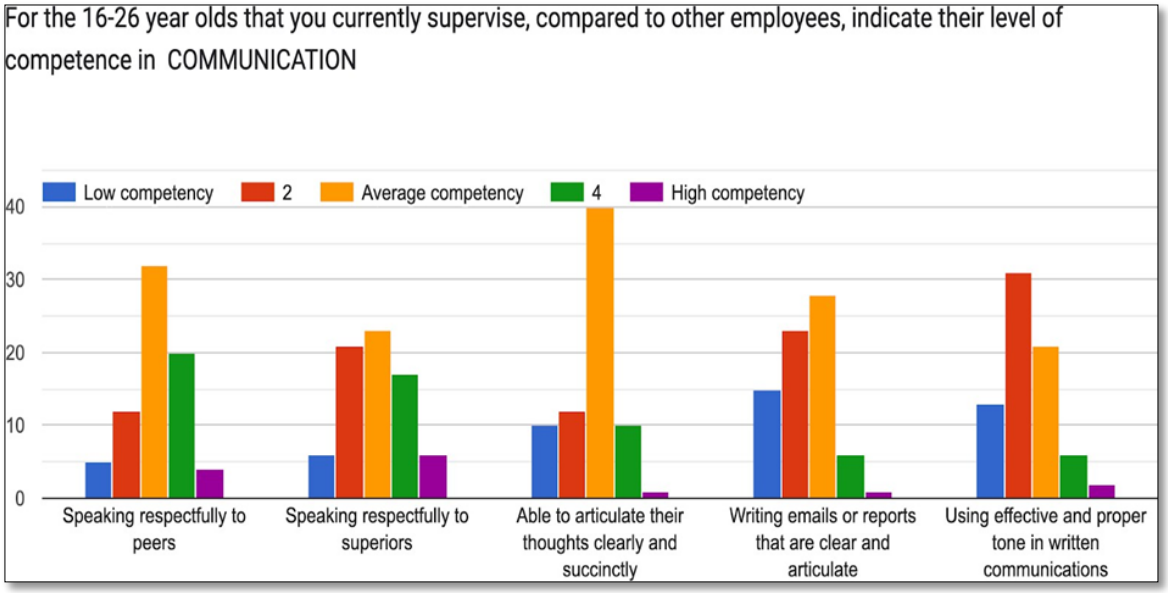

Figure 3. Communication Skills of Gen Z Employees (N=73).

In regards to communication skills, employers gave the lowest ratings of Gen Z employees when it came to their ability to write clearly and succinctly (M=2.38) and effectively and using proper tone (M=2.36). Though below the middle score, verbal skills were rated higher (M=2.73) than their writing skills. Responding to open-ended free-response questions, employers described Gen Z employees as having "better verbal communication skills" compared to "writing [that] are lacking in Gen Z'ers." In general, employers noted a need for Gen Z employees to develop and "Focus on communication-written and oral" and even describe "clear, effective, and confident communication [as] the single most important factor for all employees."

Problem-Solving

As seen in **Figure 4**, the lowest of the four primary soft skills, problem-solving consists of: Identifying a Problem & Attempting to Solve it (M=2.56), Looking at a situation from a Variety of Angles (M=2.51), Planning and Using Time Effectively (M=2.37), Logical Thinking (M=2.70), and Basic Organization Skills (M=2.81).

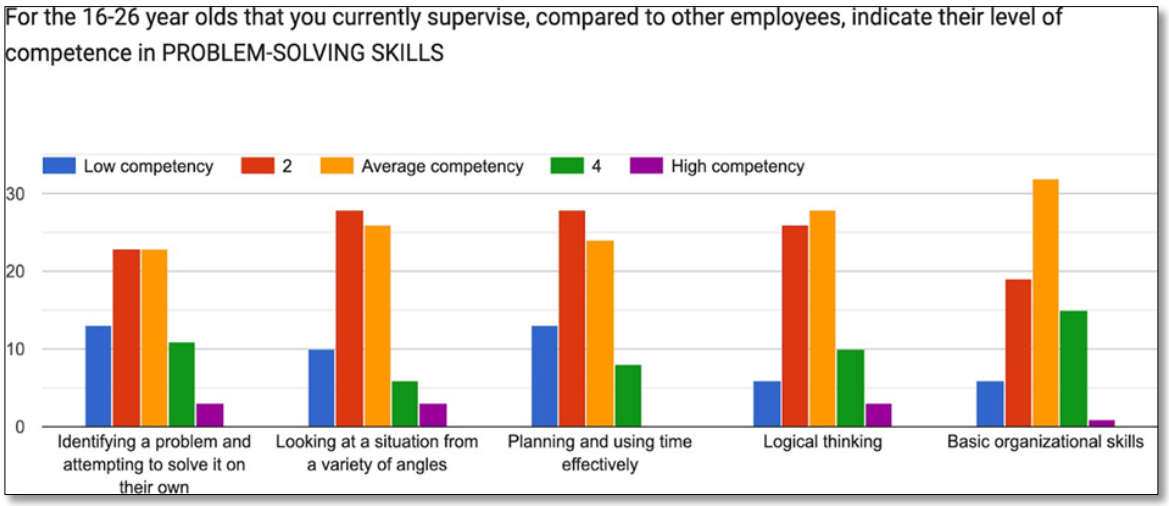

Figure 4. Problem-Solving Skills of Gen Z Employees (N=73).

All of the composite scores showed a negative skew, with a category low for Planning and Using Time Effectively (M=2.37). According to their employers, Gen Z is relatively poor at looking at a situation from a variety of angles (M=2.51), identifying a problem, and attempting to solve it (M=2.56). In open-ended responses, the employers criticized Gen Z employees' lack of "critical thinking, problem-solving, and logic." Another employer indicated "a decline in problem- solving in this generation [who] are quick to accept the process as it was given to them without asking why they are doing something or many times failing to grasp the concept completely." They lamented the lack of "problem solvers who seek collaboration and input from others in and outside their area of expertise" who are "hesitant to ask questions if they don't understand something and they lack basic problem-solving skills." More than anywhere else, employers volunteered advice for Gen Z, that they need help "adapting to problems rather than being a victim" and "learning how to problem solve on their own, [where] they often try one option, and when that fails, they stop."

Employer Characteristics & Gen Z Soft Skills

Using Pearson Linear Correlations and dummy variables for Gender (Male), Industry (Business), and Ethnicity (White), we examined the relationship between employer characteristics and the four primary soft skills **(Table 2)**.

Table 2. Employer Characteristics and Ratings of Gen Z Employees' Soft Skills (N=73).

	Business	**Age**	**Tenure**
Collaboration	-0.29*	0.25*	0.16
Communication	0.03	0.23*	0.14
Problem-Solving	0.02	0.23*	0.10
Creative Thinking	-0.27*	0.15	0.23*

Note: * p<0.05.

Employers from industries such as education, non-profits, and entertainment rated their Gen Z employees higher on Collaboration ($r(71)=-0.29$, $p<0.05$) and Creative Thinking ($r(71)=-0.27$, $p<0.05$) compared to their peers from business and finance. Also, as the age of employers increased, they were more likely to rate their Gen Z employees higher on Collaboration ($r(71)=0.25$, $p<0.05$), Communication ($r(71)=0.23$, $p<0.05$), and Problem Solving ($r(71)=0.23$, $p<0.05$). Finally, the longer employers have served in management positions, the higher they rated Gen Z's Creative Thinking skills ($r(71)=0.23$, $p<0.05$). Gender and Ethnicity of employers had no relationship to their ratings of Gen Z core soft skills.

DISCUSSION

The results of our study reveal the gap between Gen Z skills and those required by employers across diverse industries. And while Gen Z is described with words such as "empathetic" and "passionate", the workplace demands of effective communication and problem-solving are not being met by recent graduates. With advancements in technology such as AI, Generation Z will on the one hand have empowering writing and analytic assistance. On the other hand, those same technologies, if used unreflectively and uncritically, will only lead to fewer opportunities to develop the communication and problem-solving skills that employers are hiring for.

Gen Z employees are noted for their ability to work in teams and towards a common goal. They are passionate and proficient at putting their own voice and values into their work. On the other hand, Gen Z is weak in communicating both verbally and in writing, lacking succinctness, clarity, and articulation. They do not manage time effectively, lack logic and organizational skills, have trouble identifying and solving problems, and fail to look at situations from multiple perspectives or come up with alternate solutions. Despite getting along with team members, they have trouble sharing their workload with others. Some of these gaps were attributed to the lack of grit, adaptability, and the embrace of failing forward.

Finally, employers are not unequivocally critical of Gen Z. Many see unique strengths and skills that can be leveraged to bring success to their organizations. Our results show that education, entertainment, and non-profit employers convey higher estimations of Gen Z competencies than their business/finance counterparts. Employer confidence in Gen Z soft skills increased with employer age and tenure. Many employers also highlighted the need for adaptability and

teachability over all other skills, as the future is unknown and change is rapid. Unmistakably, Gen Z is recognized by many employers for their ability to adapt, learn, and embrace change.

CONCLUSION

Employers in the 21st Century are not looking for a new species but an evolved human, one that has modernized technical skills to perform their job expectations along with enduring traits and foundational competencies. However, the gap between human resource supply and demand has created challenges whose unfortunate solutions create additional challenges for both employers and employees (Hansen, 2021). Disgruntled and frustrated by this gap, employers are protesting with hiring freezes, job displacement by technology, and preferences for older workers (Davidsb & McCaffree, 2024; Intelligent.com, 2023). The results of our study echo these exact frustrations, with employers lacking confidence in their Gen Z employees. Ironically, the technical skills valued just half a decade ago - remember, when coding was the basic skill every child needed to learn - have been wholesale thrown out by Big Tech leaders such as Jensen Huang, CEO of NVIDIA, Sam Altman, CEO of OpenAI, and Sundar Pichai, CEO of Google (Rolfe, 2024; Collins, B. 2024). Instead, these same tech billionaires are hiring anyone with creative thinking, effective communication, engaging collaboration, and critical problem-solving skills. Of these, our results show that Gen Z employees are most lacking in communication and problem-solving skills, and out of 20 composite skills only "working in teams" was rated high (3.56/5.00) by employers.

"Soft Skills" have had ebbs and flows in both the public eye and in corporate hiring practices. Underlying character traits go beyond soft skills and are implicit, natural mental frameworks that apply across domains and for any work task. Thinking strategically, going beyond task completion, and engaging meaningfully, productively, and independently are unmet aspirations we have for Gen Z (Linscott, 2023; Chopra, 2023; Adeyinka-Ojo, 2021). It is equally important to emphasize that as a general concept, soft skill constructs such as collaboration only make sense when understood by the scope and breadth of its application in the workplace. For example, it is not merely enough for workers to get along with others on a team. It is equally important to know how to support, encourage, and co-motivate your fellow employees to higher levels of successful collaboration (Pinkerton, 2023; Brower, 2023). Our results confirm that these composite skills are lacking in Gen Z employees.

As real as this gap is, Gen Zers are digital natives, invested in diversity and inclusion, committed to work-life balance, prioritize experience over materialism, and value open communication (Nuttall, 2025; Parker & Igielnik, 2020). In regards to technical skills, Social Media and Artificial Intelligence are built into their code, they navigate, create, and adapt in these digital environments with ease and fluidity. Generation Z may require strategic development in some core soft skills, but "they don't just want a job-they want to make an impact, and that's a huge advantage for any business…their desire for flexibility and purpose makes

them more engaged and driven," (Zilber, 2024). In a volatile, complex world, the only thing for certain is change. Gen Z is adaptive, missional, embraces risk, and is perhaps as a generation uniquely prepared to inherit the future.

REFERENCES

Adeyinka-Ojo, S. (2021). Strategic thinking in teaching and learning in higher education News and Events Curtin University Sarawak Malaysia. News and Events Curtin University. Available online at: https://news.curtin.edu.my/insight/2021-2/strategic-thinking-in-teaching-and-learning-in-higher-education/

Akyildiz, S. T. (2019). Do 21st Century Teachers Know about Heutagogy or Do They Still Adhere to Traditional Pedagogy and Andragogy *International Journal of Progressive Education*, *15*, 151-169.

Andrews-Todd, J., & Kerr, D. (2019). Application of Ontologies for Assessing Collaborative Problem-Solving Skills. *International Journal of Testing*, *19*, 172-187.

Bailey, J. (2023). AI in Education. *Education Next, 23*, 28-35.

Bardolf, D. (2024). "Snowflakeism" Gen Z hires are easily offended, and not ready for workplace business leaders. New York Post New York Post. Available online at: https://nypost.com/2024/09/14/us-news/gen-z-hires-are-easily-offended-and-not-ready-for-workplace-business-leaders/

Barhate, B., & Dirani, K. M. (2022). Career aspirations of Generation Z a systematic literature review. *European Journal of Training & Development*, *46*, 139-157.

Blaschke, L. M. (2021). The dynamic mix of heutagogy and technology Preparing learners for lifelong learning. *British Journal of Educational Technology*, *52*, 1629-1645.

Blaschke, L. M., & Hase, S. (2016). Heutagogy A Holistic Framework for Creating Twenty- First-Century Self-Determined Learners. In B. Gros, Kinshuk, & M. Maina. The Future of Ubiquitous Learning Designs for Emerging Pedagogies Springer. pp: 25-40.

Blake, S. (2024). Companies Are Quickly Firing Gen Z Employees. Newsweek. Available online at: https://www.newsweek.com/companies-are-quickly-firing-gen-z-employees-1958104

Britton, M. (2023). Gen Z the Pioneers of the AI Era. Matt Britton | Gen Z, AI, & New Consumer Expert. Available online at: https://mattbritton.com/blog-posts/gen-z-the-pioneers-of-the-ai-era

Brower, T. (2024) 5 Skills Gen Z Must Build for Happiness and Success. Forbes. Available online at: https://www.forbes.com/sites/tracybrower/2024/04/14/skills-gen-z-must-build-for- success/

Chauncey, S. A., & McKenna, H. P. (2023). A framework and exemplars for ethical and responsible use of AI chatbot technology to support teaching and learning. *Computers and Education Artificial Intelligence, 5*, 1-11.

Cherry, K. (2022). How hard is it to become an expert at something Very well? Available online at: https://www.verywellmind.com/expertise-how-hard-is-it-to-become-an-expert-at-something-4173614

Chopra, D. (2023). Strategic thinking is the ability to think rationally and comprehensively ahead in order to reach a goal or solve a problem. It involves not only understanding the situation or challenge at hand but analyzing external influences and predicting the outcome of various actions in order to make an infor. Linkedin.com. Available online at: https://www.linkedin.com/pulse/strategic-thinking-characteristics-development-skills-divya-chopra/

Collins, B. (2024). Nvidia CEO predicts the death of coding Jensen Huang says AI will do the work, so kids don't need to learn. TechRadar. Available online at: https://www.techradar.com/pro/nvidia-ceo-predicts-the-death-of-coding-jensen-huang-says-ai-will-do-the-work-so-kids-dont-need-to-learn

Davids, J., & McCaffree, K. (2024). K-12's Student Accountability Crisis. *City Journal.* Available online at: https://www.city-journal.org/article/education-k-12-public-schools-student-accountability-crisis

DeWitte, M. (2022). What to know about gen Z. Stanford News. Available online at: https://news.stanford.edu/2022/01/03/know-gen-z/

Engle, J. (2025). Should Grades Be Based on Excellence or Effort The New York Times. Available online at: https://www.nytimes.com/2025/01/13/learning/should-grades-be-based-on-excellence-or-effort.html

Forzani, F. M. (2014). Understanding Core Practices and Practice-Based Teacher Education: Learning from the Past. *Journal of Teacher Education*, *65*, 357-368.

Future of Jobs Report. (2025). World Economic Forum. Available online at: https://reports.weforum.org/docs/WEF_Future_of_Jobs_Report_2025.pdf

Garbarine, R. (2023). How is AI Changing How We Write and Create College of Humanities and Social Sciences; NC State University. Available online at: https://chass.ncsu.edu/news/2023/03/27/how-is-ai-changing-how-we-write-and-create/

Gladwell, M. (2002). The Talent Myth. The New Yorker. Available online at: https://www.newyorker.com/magazine/2002/07/22/the-talent-myth

Grant, A. (2024). Opinion | No You Don't Get an A for Effort. The New York Times. Available online at: https://www.nytimes.com/2024/12/26/opinion/school-grades-a-quantity- quality.html

Grose, J. (2024). What Teachers Told Me About A.I. in School. The New York Times. Available online at: https://www.nytimes.com/2024/08/14/opinion/ai-schools-teachers-students.html

Haidt, J. (2024, May 6). End the phone-based childhood now. The Atlantic. Available online at: https://www.theatlantic.com/technology/archive/2024/03/teen-childhood-smartphone-use-mental-health-effects/677722/

Hansen, M. (2021). The U.S. Education System Isn't Giving Students What Employers Need. Harvard Business Review. Available online at: https://hbr.org/2021/05/the-u-s-education-system-isnt-giving-students-what-employers-need

Holder, M. (2020). Grades in a Modern Education System | Forbes and Fifth University of Pittsburgh. Available online at: https://www.forbes5.pitt.edu/article/grades-modern-education-system

Indeed. (2022). Employability Skills Definition and 10 Examples. Indeed, Career Guide. Available online at: https://www.indeed.com/career-advice/finding-a-job/employability-skills

Intelligent.com (2024). 1 in 6 Companies Are Hesitant to Hire Recent College Graduates. Available online at: https://www.intelligent.com/1-in-6-companies-are-hesitant-to-hire-recent-college-graduates/

10 Ways to Combat Learned Helplessness in Education One Kid at A Time the Big Ideas Educator. (2022). The Big Ideas Educator. Available online at: https://bigideaseducator.com/learned-helplessness-in-education/

Linscott, M. (2023). Strategic Thinking for Student Success. Purdue University Global Academic Success Center. Available online at: https://purdueglobalwriting.center/2023/09/01/strategic-thinking-for-student-success/

Malik, A. R., Pratiwi, Y., Andajani, K., Numertayasa, I. W., Suharti, S., et al (2023). Exploring artificial intelligence in academic essay: Higher Education Student's perspective. *International Journal of Educational Research Open*, *5*, 100296.

Mark Zuckerberg Predicts AI Will Reshape Coding Forever in 2025. (2025). Medium the PyCoach. Available online at: https://thepycoach.com/mark-zuckerberg-predicts-ai-will-reshape-coding-forever-in-2025-9d9a109b0464

McCrindle, M., & Fell, A. (2020). Understanding Generation Alpha. Available online at: https://generationalpha.com/wp-content/uploads/2020/02/Understanding-Generation-Alpha-McCrindle.pdf

Means, A. J. (2019). Platform Urbanism creativity and the new educational futurism. Educational Theory, *69*, 205-223.

Mekouar, D. (2024). 40% of Employers Avoid Hiring Gen Z Workers, Survey Says. Voice of America. Available online at: https://www.voanews.com/a/forty-percent-of-employers-avoid-hiring-gen-z-workers-survey-says-/7425325.html

Miller, K. (2023). Ai overreliance is a problem. are explanations a solution Stanford HAI. Available online at: https://hai.stanford.edu/news/ai-overreliance-problem-are-explanations-solution

Nearly 4 in 10 employers avoid hiring recent college grads in favor of older workers. (2023). Intelligent. Available online at: https://www.intelligent.com/nearly-4-in-10-employers-avoid-hiring-recent-college-grads-in-favor-of-older-workers/

Nispel, P. (2020). Why Learned Industriousness Spreads to all Life Areas. Available online at: https://www.linkedin.com/pulse/why-learned-industriousness-spreads-all-life-areas-paul-nispel/

Nuttal, C. (2025). 12 characteristics of Gen Z in 2025. Available online at: https://www.gwi.com/blog/generation-z-characteristics

Özpınar, İ., & Arslan, S. (2023). Teacher-based evaluation of students' problem-solving skills. *International Journal of Psychology and Educational Studies*, *10*, 543-560.

Parker, K. & Igielnik, R. (2020). On the Cusp of Adulthood and Facing an Uncertain Future What We Know About Gen Z So Far. Pew Research Center. Available online at: https://www.pewresearch.org/social-trends/2020/05/14/on-the-cusp-of-adulthood-and-facing-an-uncertain-future-what-we-know-about-gen-z-so-far/

Parzyck, Andrew & Brown, Anne. (2023). Exploring the Needs of Generation Z Adult Learners in College and in the Workplace. *American Association for Adult and Continuing Education*.

Peres, P., & Mesquita, A. (2018). Characteristics and Learning Needs of Generation Z. *Proceedings of the European Conference on E-Learning*, pp: 464-473.

Petrilli, M. (2024). Doing educational equity right Grading. The Thomas B. Fordham Institute. Available online at: https://fordhaminstitute.org/national/commentary/doing-educational-equity-right-grading

Pinkerton, S. (2023). 21st Century skills for student success: A comprehensive guide. Level up Village. Available online at: https://levelupvillage.com/skills-for-the-21st-century/

Rolfe, Richard. National Coding Week. National Coding Week (2024), Available online at: https://www.codingweek.org/we-no-longer-need-to-learn-to-code/

Russell, S., Richardson, N., O'Driscoll-Kearney, J., Bin Hendi, T., & Dan Murphy, D. (2024). Skills in the Age of AI. World Economic Forum. Available online at: https://www.weforum.org/meetings/annual-meeting-of-the-global-future-councils-2024/sessions/skills-in-the-age-of-ai/

Schwieger, D., & Ladwig, C. (2018). Reaching and Retaining the Next Generation: Adapting to the Expectations of Gen Z in the Classroom. Information Systems.

Seemiller, C., & Grace, M. (2017). Generation Z Educating and Engaging the Next Generation of Students. About Campus, *22*, 21-26.

Segel, L., & Hatami, H. (2023). Mind the Gap Gen Z's three must-have skills in the age of AI. McKinsey. Available online at: https://www.mckinsey.com/~/media/mckinsey/email/genz/2023/04/2023-04-11b.html

Szczepanek, A. (2023). Gen Z at work. ResumeLab. Available online at: https://resumelab.com/career-advice/gen-z-at-work

The Value of Figuring Things Out. (2021). The Wyzant Blog. Available online at: https://blog.wyzant.com/the-value-of-figuring-things-out/

Vail, K. (2024). Tackling Learned Helplessness in a Standards-Based Grading Environment - Kappan Online. Kappan Online. Available online at: https://kappanonline.org/tackling-learned-helplessness-in-a-standards-based-grading-environment/

What Are Employability Skills and Why Do They Matter (2023). Coursera. Available online at: https://www.coursera.org/articles/employability-skills

Young, S. (2017). Cultivating the Skill of Figuring Things Out | Scott H Young. Scott H Young. Available online at: https://www.scotthyoung.com/blog/2017/10/12/skill-of-figuring-things-out/

Zilber, A. (2024). Here's why companies are rapidly firing Gen Z employees. New York Post. Available online at: https://nypost.com/2024/09/24/business/heres-why-companies-are-rapidly-firing-gen-z-employees/