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At *Monozukuri Juku (ZIKUU)*, we have long encouraged woodworking students to learn CAD and have explored how to use AI. These efforts are made with the AI era, declining birthrate, and population decrease in mind. Going forward, we believe we must put these ideas into practice more deliberately.

My own background is as a programmer, a guitar maker, a road bike builder, and later also in architecture and welding. Naturally, that experience shapes my perspective. And of course, this mindset also informs our daily activities at the school.

Examples of "Dual-Skill" People

Digital & Analog Dual Skills

- A programmer who can build houses (an “architectural programmer” managing blueprints in code)
- A farmer who can build robots (designing their own automation systems for agriculture)
- A construction worker who can harness AI (automating site surveying with AI)
- A data scientist who can weld (skilled in metalwork too)
- A web designer who can do woodworking (a UI designer who builds furniture)

- A chef who can design circuits (IoT-enabling their own kitchen equipment)
- A carpenter who can program (using CNCs and 3D printers for wood processing)
- A farmer who can draft (designing greenhouses with CAD and building them themselves)
- A potter who can build servers (and run their own online shop)
- A welder who can tune AI models (applying them to improve on-site efficiency)

White-Collar & Blue-Collar Dual Skills

- A welder who understands business management (and runs their own workshop)
- A plasterer who can manage communities (organizing events and handling social media)
- A fisherman who does project management (using data for catch management)
- A woodworker who can build IP strategies (protecting their work internationally)
- An electrician with legal expertise (strong in contracts and regulations)
- A mechanic who can write papers (publishing new repair methods academically)

Cross-Cultural Fusion Dual Skills

- An engineer who forges Japanese swords (fusing traditional craft with advanced machining)
 - A robotics researcher who practices tea ceremony (integrating Japanese spirit and science)
 - A rural entrepreneur combining farming and the metaverse (virtual rice fields•)
-

Why Dual Skills?

1. Areas where AI excels vs. struggles

- **Strengths:** memory, search, optimization, pattern recognition, code generation, translation—tasks that can be formalized.
- **Weaknesses:** adaptive judgment on site, fine physical work, creativity rooted in social/cultural context, ethical judgment.

AI represents **one wing of knowledge**. The other wing—**embodiment and hands-on field experience**—remains with humans.

Those who can cross both sides—the dual-skilled—will be most advantaged.

2. White-collar alone will be swallowed by AI

Relying only on desk work (clerical tasks, design, translation, programming) carries a high risk of replacement.

Already, tools like **GitHub Copilot** or **Claude** automate much of coding and document drafting. Knowledge disconnected from hands-on experience competes directly with AI—and loses.

3. Blue-collar alone will be eroded by AI + robotics

Automation is spreading in manufacturing, logistics, and construction.

Examples: unmanned forklifts, automatic welding arms, self-driving heavy machinery.

Routine, repetitive labor is the first target for technology.
AI robots are strong because they **never rest, are fast, and precise.**

4. Dual-skilled people can fully leverage AI as a tool

- **Farmer & Robotics** – A farmer who can modify and control robots can predict yields with AI and immediately improve on-site.
- **Carpenter & Programmer** – Woodworking knowledge can be reflected in CAD/CAM, allowing automated processing plus hand finishing.
- **Construction worker & AI Engineer** – Surveying/design made efficient by AI, while responding instantly on site.

Instead of seeing AI as a –competitor,– dual-skilled people can make it a –partner.–

5. Innovation happens at boundaries

Historically, new value has emerged at the boundaries of existing fields.
Examples:

- Biology & Information Science – Bioinformatics
- Physics & Finance – Quantitative trading

Dual-skilled people, as –boundary crossers,– can create entirely new jobs in the AI era.
Dual skills generate **irreplaceable value.**

6. Shifts in education and labor markets

Conventional education has assumed –single-specialty expertise.–
But since AI can now shoulder much of that expertise, education must shift to cultivating people who **use AI to change reality.**
That condition is fulfilled by –Digital & Analog– dual-skilled individuals.

At *Monozukuri Juku*, we want to be a place where as many people as possible –especially young people– can pursue dual skills.

If you work in education, if you are raising the next generation, or if you simply feel things cannot continue as they are –why not aim for dual skills with us? Let’s commit five years to it.

Related Articles

- [What young people should know about the –2030 Problem–](#)
 - [What parents of young people should know about the –2030 Problem–](#)
 - [The unemployment issue in the AI era](#)
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A Side Note: The Difference Between Professionals and Amateurs

There seems to be a common view that professionals are simply those who earn money from it. But that's not the essence.

When an amateur decides to do something, it ends with "I want to."
A professional transforms that into "I must."
Amateurs create escape routes; professionals do not.
The mindset is completely different.
It's not about money; it's about commitment.

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