

# Quaderni di Comunità

Persone, Educazione e Welfare  
nella società 5.0

## Community Notebook

People, Education, and Welfare in society 5.0

n. 1/2025

HUMAN-CENTRIC APPROACH  
TO ARTIFICIAL INTELLIGENCE

*edited by*

Marco Filoni, Filippo Maria Giordano, Giorgio Grimaldi



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## 5. PARTICIPATORY APPROACHES FOR THE TRANSITION FROM AUTOMATION TO ARTIFICIAL INTELLIGENCE (AI): A CASE STUDY

by Sara Calicchia, Chiara Colagiaco, Angela Bagnato, Roberta Pistagni, Bruno Papaleo, Francesca Grosso\*

**Abstract:** Per bilanciare il progresso tecnologico con il benessere dei lavoratori è fondamentale preservare spazi di partecipazione centrati sull'uomo e integrare i programmi tradizionali di sicurezza con iniziative di promozione della salute che rafforzino il ruolo attivo dei lavoratori. Questo studio presenta il caso di un workshop partecipativo, condotto all'interno di un'azienda italiana del settore automotive, durante il quale lavoratori, manager e esperti si sono confrontati su come migliorare le condizioni di lavoro, anche attraverso l'uso di sistemi automatizzati di intelligenza artificiale (IA). Attraverso la mappatura dell'esperienza e il dialogo strutturato, sono emerse soluzioni concrete per ottimizzare i processi e promuovere il benessere. I risultati evidenziano un

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miglioramento dell'organizzazione del lavoro e delle relazioni interpersonali, rafforzando la fiducia nel cambiamento tecnologico. L'approccio partecipativo si conferma strategico per integrare le tecnologie IA in modo equo e inclusivo, migliorando la capacità decisionale e il coinvolgimento dei lavoratori.

**Parole chiave:** intelligenza artificiale, approccio partecipativo, promozione della salute, sviluppo organizzativo, approccio centrato sull'uomo.

**Abstract:** To balance technological progress with worker well-being, it is essential to maintain human-centered spaces for participation and integrate traditional safety programs with health promotion initiatives that empower workers. This study presents a participatory workshop conducted in an Italian automotive company, where workers, managers, and experts collaborated to improve working conditions, taking into consideration AI-based solutions as well. Through experience mapping and structured dialogue, concrete solutions emerged to optimize processes and enhance well-being. The results indicate improvements in work organization and interpersonal relationships, fostering greater trust in technological change. A participatory approach is a key strategy for integrating AI technologies fairly and inclusively, enhancing decision-making and worker engagement.

**Keywords:** artificial intelligence, participatory approach, health promotion, organizational development, human-centered approach.

## *Introduction*

Artificial Intelligence (AI) is expected to profoundly influence key dimensions affecting worker well-being in the coming years, such as autonomy, interpersonal relationships, task integrity, and skill utilization (Bankins *et al.*, 2023). In the specific field of occupational health and safety, introducing AI-based

worker monitoring and control technologies, such as self-tracking devices, risks further shifting safety responsibilities onto individual workers. These systems often focus solely on risks identified by AI, neglecting organizational risks that are not technologically monitored (Malenfer *et al.*, 2023). This may mark a return to the Cartesian paradigm of human reductionism and the biomedical approach (Till, 2018), creating new forms of worker control and fostering distrust toward new technologies. To harness the potential of emerging technologies without compromising individual and organizational well-being, it is essential to preserve or restore spaces for participation and reflection, unmediated by algorithms, that prioritize human needs. In Occupational Health and Safety (OHS), it is particularly urgent to integrate traditional risk assessment and prevention programs with Workplace Health Promotion (WHP) initiatives that empower workers to influence the social determinants of their health. This approach aligns with the Luxembourg Declaration and recent comprehensive frameworks for health protection and promotion (Pronk, 2013).

### *1. Objectives and Methodology*

This case study, conducted within a leading automotive company in Italy, introduces the methodology and key outcomes of a participatory workshop involving workers and managers, supported by experts in sustainable organizational models, facilitation techniques, and process engineering. The workshop aimed to improve working conditions in production cells following an assessment process that involved most of the company's personnel (Pistagni *et al.*, 2023). The goal was to identify solutions to alleviate workload in specific production lines through greater automation. The initiative, carried out alongside the

implementation of an AI-based Worker Management (AIWM) project, sought to enhance worker participation and exemplify best practices presented by the company in various institutional settings. The pilot workshop focused on a specific work cell with identified improvement needs. The facilitation methodology was inspired by the “experience map” approach (Strickland *et al.*, 2019), a participatory technique that actively engages employees in analyzing and visualizing their work experiences. This approach aims to optimize processes, promote well-being, and create a more inclusive and health-conducive work environment, ultimately improving productivity and job satisfaction. Experts gathered precise insights into the production process through detailed illustrations of individual actions and phases of work mapped by workers and managers. Workers then identified critical areas on the process map, followed by structured reflection exercises to examine real-world challenges. Using written prompts, participants articulated their thoughts on sticky notes, a method that fosters clarity and critical analysis. Group discussions involving workers, managers, and experts generated actionable proposals and solutions based on these inputs.

The development process was evaluated using focus groups and surveys targeting managers and workers. The surveys captured perceptions of organizational changes, improvements in manager-worker relations, and factual data on implemented projects.

## *2. Results*

This section briefly presents the results of the participatory process, specifically focusing on the workshop conducted in the operational cell. Out of a total of 30 workers, 11 responded to the

qualitative-quantitative questionnaire, while 15 attended the focus groups conducted at the end of the process. In line with the integrated OSH/WHP strategy, workers reported significant improvements in their work conditions, ranging from the physical environment to organizational practices. *“I feel relieved because it means that management also considers workers’ needs”*. Open discussions were among the most valued aspects of the process. The operational cell workshop was particularly appreciated for its concreteness and specificity. Participants highlighted the role of small group work in facilitating mutual understanding and deeper exploration of issues: *“Addressing the problems was more enjoyable, we understand each other better, and we’re fewer people”*; *“Compared to the first time, I found this more concrete, really aimed at solving the situation”*; *“Now we went into detail, narrowing down the focus and reaching a final solution”*.

Managers also highlighted the generative power of the experience as an opportunity to learn from those on the front lines: *“It was the most interesting thing we’ve done here: I realized, through the way they spoke in their own terms, with their feelings, some very precisely, just how important they feel about what they are doing”*. Sharing the map of the cell and working on it together yielded unexpected results due to its concreteness: *“That map is normality for me, but having it printed and laid out on the table had an unimaginable effect”*.

Additionally, the workshop identified improvement solutions for critical issues highlighted during the risk assessment phase, lending credibility to implementing AI technologies designed to address them (e.g., a visual control camera relieving workers from certain repetitive gestures). The participatory process further supported the need to optimize work areas with new production lines integrated into the company’s management system, featuring enhanced human-machine interfaces (HMIs) that simplify

operational and maintenance activities. Moreover, workflow efficiency improved by introducing advanced technologies and wearable sensors for health and safety monitoring, developed in collaboration with various research institutions.

## *Conclusion*

The findings confirm that participatory occupational health and safety approaches foster continuous learning between managers and workers, facilitating intersectoral knowledge exchange. This framework supports the implementation of fair, inclusive AI technologies that address workers' needs. Participatory methods enhance decision-making quality by incorporating workers' practical knowledge of tasks and challenges, yielding more informed, realistic, and effective outcomes. Successful organizational changes that improve worker well-being depend on careful people management that builds a shared vision within the organization. This approach delivers impactful, context-specific solutions that optimize processes. Such participatory processes can mitigate the risk of AI being perceived or used as a control tool that infringes on privacy. Future research should explore how participatory organizational development initiatives influence worker acceptance of new technologies.

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