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Valentyna Kuzmenko,¹ Anton Bielich²

¹ senior lecturer NU “Zaporizhzhia Polytechnic”

² student of BAD-113 NU “Zaporizhzhia Polytechnic”

INNOVATIVE APPROACHES TO IMPROVING THE QUALIFICATIONS OF PERSONNEL IN THE CONSTRUCTION INDUSTRY UNDER DIGITAL TRANSFORMATION CONDITIONS

The construction industry is undergoing a significant stage of digital transformation, which requires personnel to acquire new skills in order to work with modern technologies. Digital transformation is crucial for economic growth, as the construction sector provides employment and is expected to remain one of the most relevant industries in the coming years [1]. Upskilling is essential to increase productivity, reduce costs, and improve safety, but it requires a strategic approach to employee training.

Let's explore the main modern methods of upskilling workers in construction

1. Online courses on platforms such as Coursera, Digital Construction Skills, etc., help workers learn building information modeling (BIM), data analytics, and project management software;

2. Virtual and augmented reality technologies allow for the simulation of construction scenarios for safe hands-on training;

3. Integration of training into daily work, for example, using BIM during project planning, helps develop practical skills in real time;

4. Seminars and webinars by industry associations support continuous learning and provide updates on the latest technologies.

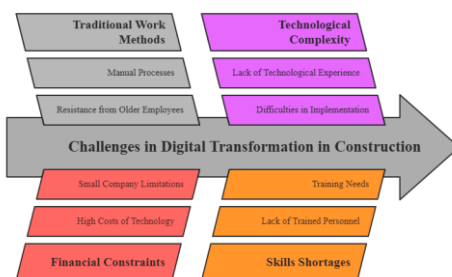


Figure 1 – Overcoming digital transformation challenges in construction

Based on the analysis of current publications [1–3], it is evident that upskilling construction personnel in the context of digital development is a relevant and timely issue.

This trend is associated with improved efficiency and productivity (e.g., daily output per worker), enables better use of available resources through forecasting, and allows for monitoring and analysis of working conditions to identify risks and enhance safety on construction sites [2].

Construction company leaders face several challenges in integrating modern technologies into the construction industry:

1. Traditional work methods hinder the adoption of new technologies, especially among older employees;
2. Significant investments in software, equipment, and training are required, which can be a challenge for small companies;
3. The complexity of new technologies may lead to difficulties, particularly for those with limited technological experience;
4. A lack of workers with the necessary skills requires substantial efforts in training or hiring;

To overcome the challenges of digital transformation in the construction sector, a comprehensive approach is essential. Leaders must actively promote the benefits of new technologies through communication. Companies should invest in training, collaborating with educational institutions, and begin implementation through pilot projects (such as testing BIM on small-scale sites).

Collaboration through industry forums, such as CITB, fosters knowledge exchange, helping staff effectively adapt to new conditions.

Digital transformation brings significant opportunities to the construction industry, but it requires innovative approaches to workforce training. Investments in digital platforms, VR/AR simulations [3], and continuous learning programs will help overcome challenges such as resistance to change and skills shortages. Strategic planning, strong leadership, and collaboration will ensure successful adaptation, unlocking the potential of digitalization to enhance efficiency, safety, and sustainable development.

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