WE CANNOT FIX WHAT WE DO NOT SEE

The Lifesaving Power of Visual Literacy

By Doug Pontsler

Identifying hazards in the workplace can be challenging for a number of reasons. For example, the workplace can become so familiar to workers that they look past hazards in plain sight that can impact their safety and the safety of others.

People sometimes fail to recognize hazards that are right in front of them. Have you ever heard someone in an incident review comment that even though they walked past something many times, they never saw the hazard until an incident occurred? Perhaps you have even said that yourself.

Visual literacy is defined as the ability to read, write and create visual images. It is a concept that typically relates to art and design but has much wider applications. Visual literacy is all about how and what we see, how we determine what it means, and what action we take as a result. This article discusses the application of visual literacy to improve hazard identification and risk reduction. Using the same tools that artists, art historians, teachers and others use to understand a work of art can also help workers identify hazards that exist around them.

Why We Miss Things Around Us

Most of the sensory information that sighted people process is visual. They tend to be overly confident that when they look at something, they see what is there. It is a common misconception that people see the world as a high-definition movie, when in fact they are collecting snapshots of what they are seeing and weaving them together to make sense of them. Estimates vary as to the number of snapshots people process per second, but the brain fills in the blanks to create meaning. While the brain is very good at its job, it is not perfect, which leaves opportunity for error. People must slow down and closely examine what they are looking at to avoid quick determinations of what they are seeing, especially workers who are exposed to hazards that can result in injury.

Habituation is also a factor in why people may not see the hazards around them. Habituation describes when an environment becomes so familiar to people that they no longer see individual elements in it. Let's look at a simple example. Do you drive a vehicle? Do you drive the same vehicle most of the time? If your answer is yes, it stands to reason that you are familiar with this vehicle, especially the aspects that are important to your driving experience. Now let's test how well you see the details around you. Take out a piece of paper and draw the vehicle's instrument panel. You look at this panel many times while driving to check your speed, fuel level, and whether any warning lights are illuminated. Can you draw it accurately? Most people cannot. This is a good example of how surroundings can become so familiar that people no longer see them. This can be true in the workplace as well.

In workplace safety programs, workers' most fundamental action is identifying hazards that need to be eliminated or controlled to prevent injury. Common methods for identifying hazards range from informal hazard hunts, where risks are identified by looking critically at the work environment, to formal processes such as design-for-safety reviews to determine whether potential hazards can be eliminated before they are introduced to the workplace. In all cases, the goal is to find and define hazards that represent risk in the workplace. But what if workers do not see the hazards to begin with? This represents a missed opportunity for mitigation. The concept applies to more than hidden hazards; unseen hazards can also be those in plain sight that workers simply do not see. These hazards have become so familiar that they fall into the background and are subconsciously ignored.

Improving Workplace Visual Literacy

People can take steps to improve their ability to see the workplace more clearly and redundant hazards more accurately by becoming visually literate. Learning specific tools and techniques taught in visual literacy curricula can help build competency and capability.

Steps to Improve Visual Literacy

1) Recognize that we do not see as well as we think we do. Stop assuming that when we look at something, we see what is there. Most people have had no training on how to see. People often do not realize how our vision system functions or recognize the factors that shape how we interpret the visual information taken in. People are not generally skilled in using their vision in a disciplined or structured way when examining a work environment or work activities, but instead rely on intuition. These factors can result in workers missing details that are important to interpreting what is being seen, which can lead to failing to achieve goals.

2) Apply some simple, structured tools that advance visual literacy to improve how workers see the work environment and activities. Begin by having workers move from the perimeter of what they are looking at to the interior. This helps mitigate the natural human tendency to glance around, looking at things that catch the eye or that workers are drawn to by their experiences or expectations.

APPLYING VISUAL LITERACY IN SAFETY

- **Acknowledge visual limitations.** Recognize that we do not see as clearly or accurately as we think, and that training is needed to improve how we observe our surroundings.
- **Combat habituation.** Break routine by consciously looking at familiar environments with a fresh perspective to uncover overlooked hazards.
- **Use structured observation techniques.** Apply specific tools such as scanning from perimeter to center, spotting contrasts and changing perspectives to improve hazard identification.
- **Integrate visual literacy into training and existing processes.** Include visual literacy techniques in safety audits, incident investigations, and hazard hunts to increase effectiveness and accuracy.
- **Connect with safety outcomes.** Connect visual literacy education to key safety metrics such as hazard identification rates to reinforce its practical value.

Look for contrast in color, size or location as an indicator that something is unlike something else. A dark spot on a clean floor may indicate a fluid leak that can be a slip hazard. Also, look at things from a different perspective. In addition to looking at equipment from the operator's perspective, look under and behind the equipment to see conditions that might be a problem in maintenance or other tasks.

Imagine conducting a hazard hunt without a disciplined or structured approach. This might reveal some things that could lead to identifying hazards, but the overall effectiveness would fall short of what might be possible. How much more effective would the hazard identification process be if workers could more effectively see the details around them?

3) Integrate visual literacy training into safety processes. When preparing people to conduct audits and assessments as one example, provide visual literacy training so that they have the capability to objectively see details as they execute audits and assessments. This involves slowing down; looking, observing and seeing in greater detail; describing the details; analyzing and interpreting the risks; and communicating mitigation strategies.

While general awareness training on visual literacy is helpful, such training is more effective when linked to key safety processes such as hazard identification and when the impact is measured in key process metrics. For example, hazard hunts will reveal more potential hazards, incident investigations will include more inputs to the root causes associated with the incident, and design for safety reviews will be more complete.

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Conclusion

Organizations that take a proactive approach to improving workplace safety have found that applying insights from other disciplines is essential to improving workers' quality of life and preventing fatalities. Discussions about wellness, mental health, neurodiversity, and diversity, equity and inclusion are all examples of insights from other disciplines. Applying lessons from art education in how and what people see—and how they interpret what they see—is another example. Leaders must learn more about visual literacy and train the workforce to be better critical thinkers, problem-solvers and communicators—all characteristics that companies seek in employees. **PSJ**

VISUAL LITERACY CASE STUDY

The author worked with a global automotive and mobility company that sought to integrate visual literacy training into its people-first behavior-based safety program. In the dynamic, fast-paced environment of vehicle and components manufacturing, it is critically important for workers to be able to identify and describe what they see, and assess what it means (i.e., the potential severity and frequency of risk) and what to do as a result. These are essential skills when working on an assembly line, with robotics and in spray painting, metal fabrication or other areas within a vast manufacturing facility.

The company introduced visual literacy across the organization as part of the hazard hunts being conducted. Hundreds of associates were trained to use the visual literacy tools and the number of hazards identified were measured along with the time to address them. Integrating the visual literacy tools into existing environmental, health and safety processes was identified as a key to success. Since implementing the training, the company has seen significant improvements in the number of hazards being identified, along with the quality of BBS observations and job safety analyses. Worker buy-in and engagement were evident; one associate commented, "This is the coolest safety training I have ever had."

Doug Pontsler is chair and managing director of COVE: Center of Visual Expertise, established by the Toledo Museum of Art in 2018. The organization focuses on applying visual literacy to industrial and service sectors, emphasizing safety. Previously, he was vice president of operations sustainability and environmental, health and safety at Owens Corning, holding roles in corporate services and global sourcing. A former National Safety Council (NSC) board member and Campbell Institute chair, Pontsler earned NSC's Distinguished Service to Safety Award in 2019 and International Visual Literacy Association's Special Contribution Award in 2023. He is a member of ASSP's Greater Detroit Chapter and Risk Management Practice Specialty.

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