



Cultivating a Culture of Quality: Training and Development Strategies for Laboratory Excellence

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OVERVIEW

- Key Training Areas:
 - Strategic Onboarding (vision and mission)
 - Robust Quality Management System Training
 - Data Integrity and Ethics
 - Technical Skill Training and Development
 - Concerns with sequential training
 - Cultivating Leadership Capabilities
- Beyond Training:
 - Fostering a Culture of Continuous Learning
- Employee Empowerment:
 - Driving Innovation and Enhancing Performance

STRATEGIC ONBOARDING



- Develop a Foundational Training and Development Strategy: Prioritize a comprehensive strategy to enhance laboratory performance and ensure regulatory compliance.
 - Essential for achieving high-quality data and operational efficiency.
- Onboarding Beyond Task Training: Integrate new employees into the laboratory's culture and purpose, emphasizing the connection between their roles and the organization's scientific mission.
 - Align with vision and mission to foster a sense of purpose and commitment to data integrity.
- Understanding Contribution to the Mission: By understanding their role in the laboratory's scientific objectives, employees feel valued and develop a strong sense of pride in their work.
 - This alignment drives improved data quality, enhances collaboration, and supports innovation.

Advantages of Strategic Onboarding

Understanding direct impact -become deeply invested, transitioning from a mere job to a meaningful contribution, fostering a proactive work ethic.

Valued and connected employees become organizational ambassadors, significantly reducing turnover and conserving valuable resources.

Empowers employees to think beyond immediate tasks, fostering innovative solutions and driving continuous improvement

**Increased
Engagement
&
Motivation**

**Improved
Performance
&
Productivity**

**Enhanced
Retention
&
Loyalty**

**Increased
Collaboration
&
Teamwork**

**Enhanced
Innovation
&
Creativity**

**Improved
Customer
Satisfaction**

Understanding the 'why', cultivates pride, leading to high-quality output and proactive problem-solving. This translates to an increase in PARs, minimizing the need for CARs.

Promotes increased collaboration and teamwork, enhancing communication and strengthening team cohesion.

Directly translates into enhanced customer satisfaction, a crucial factor for all stakeholders.

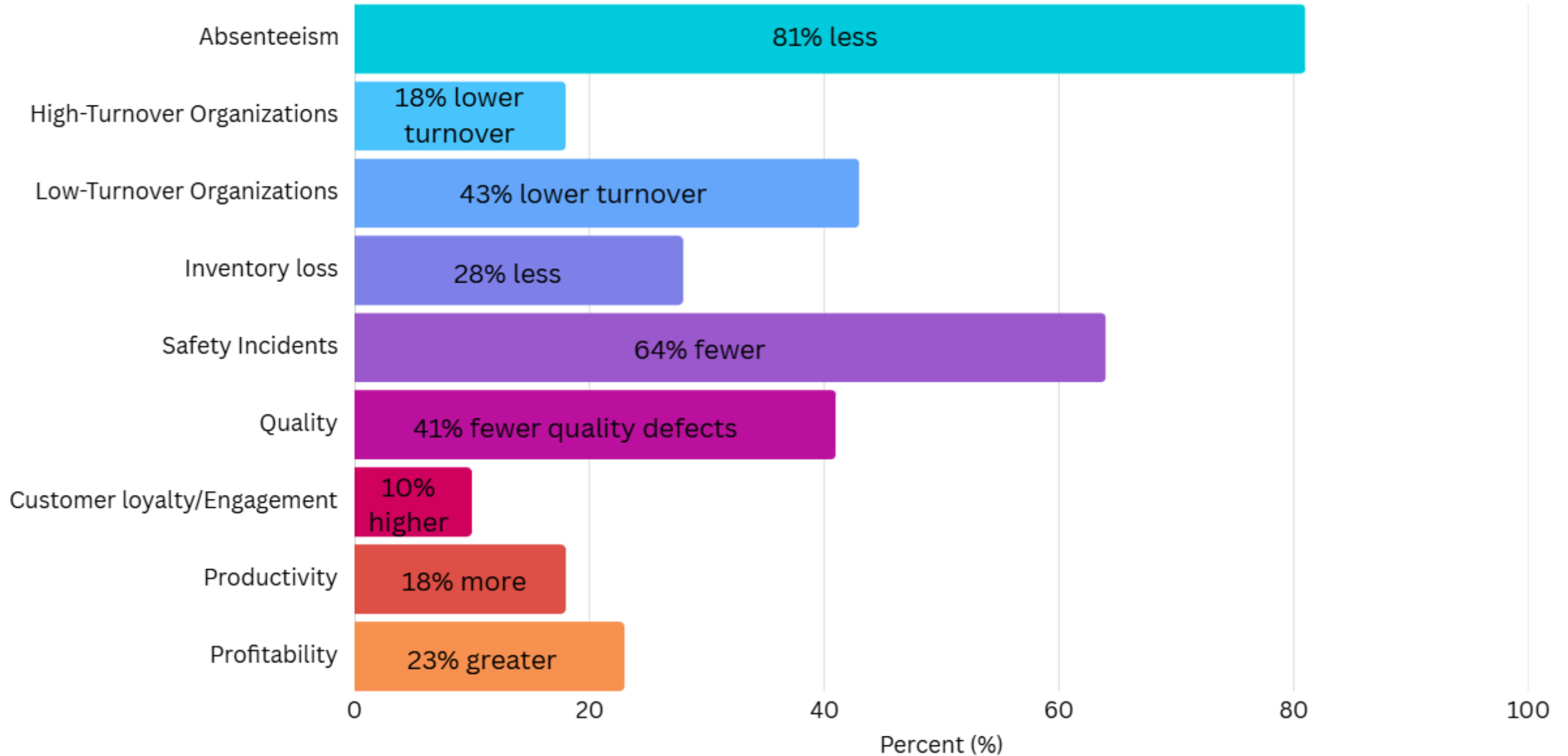


The outlined key advantages reinforce the importance of cultivating a culture of quality where everyone comprehends the 'bigger picture.' It's about more than just metrics; it's about creating a deeply engaged, efficient, and ultimately, a more successful organization.

The Impact of Employee Engagement: Gallup Research Findings

- A large-scale 2020 meta-analysis, encompassing 456 studies across 276 organizations, 54 industries, and 96 countries (representing 112,312 work units and 2.7 million employees), provides strong evidence that employee engagement significantly impacts organizational performance.
- This comprehensive research revealed substantial, quantifiable differences in performance when comparing highly engaged business units to their less engaged counterparts, demonstrating a major positive influence across various key metrics.

Impact of Employee Engagement on Business Outcomes



Quality Management System(QMS) Training

QMS as the Laboratory Blueprint:

- Just as a blueprint guides construction, a robust Quality Management System (QMS) provides the framework for all laboratory operations, ensuring consistent high-quality data production and regulatory compliance.

Core Objectives of QMS Training:

- To ensure accurate, reliable, and legally defensible data, safeguarding data integrity and meeting both regulatory and internal standards.



Just as a well-designed blueprint ensures a successful building project, a robust QMS ensures the quality and integrity of environmental data!

Components of Effective QMS Training:

Quality Assurance Manual or equivalent: covering TNI V1M1 & V1M2.

- Important requirements, tools and procedures of QMS to understand for all laboratory employees, not just QA Managers:
 - Proficiency testing (acceptable vs prohibited practices)
 - CAPA (powerful tools for all)
 - Traceability (expectations and requirements)
 - Control of Records (complete, accurate, traceable and retrievable)
 - General Quality Control Sample Principals (positive/negative controls and purpose of QC)
 - Internal Audits (importance of IA's and expectations)
 - Control Charts (Powerful tool for all)
 - Data Integrity and Ethics (safeguard for data integrity)

Lack of training/knowledge on these topics lead to disconnect between laboratory practices and regulatory requirements.

Data Integrity and Ethics Training: A Mandatory Foundation for Trust and Compliance



- Importance of Data Integrity and Ethics Training: (V1M2 5.2.7)
 - A mandatory requirement for environmental laboratories, essential for regulatory compliance, public trust, and the validity of reported results.
- Core Training Objectives: Emphasize accurate data handling, record-keeping, and ethical conduct through:
 - Reinforcing ethical behavior and discussing ethical dilemmas.
 - Training on preventing and detecting data manipulation.
 - Training on avoiding bias in data collection and analysis.
- Continuous Reinforcement: Ongoing training is crucial for reinforcing ethical practices and ensuring data integrity.
- Regulatory and Ethical Imperative:
 - Data integrity breaches have severe consequences, impacting regulatory compliance, legal standing, and public confidence. This is not just a regulatory requirement; it's a moral imperative.

Systemic Solutions for Data Integrity: Building a Comprehensive Framework



- Addressing Root Causes:
 - Data integrity issues often stem from a lack of oversight or training, necessitating a multi-faceted approach.
- Key Systemic Solutions:
 - Robust Quality Management Systems (QMS): Implement and maintain strong QMS with data validation procedures and regular internal audits.
 - Data Integrity and Ethics Training Programs: Provide specialized training on data handling, manipulation detection, and ethical implications.
 - Whistleblower Protection: Create a safe and confidential environment for reporting suspected fraud.
 - Culture of Transparency and Accountability: Embed ethical values into the organizational fabric.
- Proactive Prevention:
 - These measures create a powerful defense against data integrity breaches, focusing on proactive prevention rather than reactive measures.

The Data Quality Equation: Trust, Growth, and Profitability

- The Data Quality Equation:

Good Quality Data= Customer Satisfaction=More Work=More Profit



- Building Trust and Loyalty:
 - Accurate, reliable data builds customer trust, leading to loyalty and repeat business
- Strategic Investment:
 - Investing in data quality is a strategic move that directly impacts the bottom line

Technical Skill Development

Foundation of Laboratory Success:

A laboratory's success hinges on the competence and proficiency of its personnel. A comprehensive approach to technical training is essential, combining theoretical knowledge with hands-on practical experience.

Ensure new technicians have access to experienced colleagues

**Develop
Standardized
Training Program**

Clear objectives, SOPs and comprehensive training materials

**Provide
Ongoing
Support and
Mentorship**

**Utilize
Experienced
Trainers**

Identify individuals with both technical expertise and training skills to lead trainings

Formally assessing and documenting trainees' competency

**Implement
a Competency
Assessment
Program**

**Incorporate
Variety of Training
Methods**

Hands-on practice, demonstrations, webinars, ect. to cater different learning styles

To ensure trainers have the resources needed to be effective

**Provide
Adequate
Time and
Resources**

Knowledge is key- empower employees with the key to success!



The Pitfalls of Sequential Training

Inconsistent training quality:

- Gaps in understanding and uneven skill levels.
- Missed essential information and development of bad habits



Perpetuation of Bad Habits & Shortcuts:

- Compromised quality and safety.
- Cycle of suboptimal practices.



Limited Perspective & Knowledge Transfer:

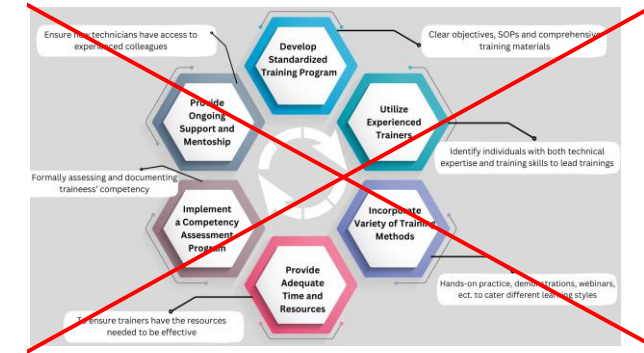
- "This is how we've always done it" mentality.
- Hindered innovation and adaptation.

Time Constraints & Pressure:

- Rushed/incomplete training.
- Interruptions and distractions.

Lack of Feedback & Evaluation:

- Premature sign-offs.
- Limited and ineffective feedback.



Sequential training undermines quality and consistency. A structured approach is crucial for competent personnel.

Training - Continuous Improvement

- Establish mechanisms for collecting feedback from both trainees and trainers, fostering an open and transparent environment for program enhancement.
- Regularly review and update the training program to adapt to evolving technologies and procedures.
- Embrace modern training methods, such as recorded PowerPoint presentations, to enhance visual engagement and accessibility.

Cultivating Leadership: Building a Quality-Driven Environment

- The Importance of Leadership Development:
 - Strong leadership is essential for creating a quality-driven environment and motivating teams. Equipping supervisors and managers with the necessary skills is paramount.
- Key Strategies for Leadership Development:
 - Targeted Management Training: Provide foundational training in communication, delegation, and performance management.
 - Peer-to-Peer Knowledge Sharing: Foster a culture of collaboration by encouraging managers to share best practices.
 - External Expertise and Training: Leverage professional outside resources to bring fresh perspectives and innovative approaches.
 - Teamwork and Collaboration: Promote teamwork throughout the organization, emphasizing collective goals over individual efforts.



Importance of TEAMWORK

Empires are built on the strength of TEAMS



Cultivating Continuous Learning: Driving Excellence in the Laboratory

- The Importance of Continuous Learning: fostering a culture of continuous learning is essential for laboratory excellence.
- Strategies for Cultivating a Learning Culture:
 - Quality-First Mindset:
 - Ingrain a quality-first mindset in every employee, emphasizing high-quality, reliable, and defensible data.
 - Growth Mindset:
 - Foster a culture where questions are valued, clarification is encouraged, and continuous improvement is prioritized.
 - Resource Availability:
 - Provide personnel with access to internal experts, mentorship, and knowledge-sharing opportunities.
 - Targeted Training Opportunities:
 - Offer training in areas of interest to facilitate skill development and knowledge expansion.

According to 20 Forbes Human Resources Council members in the article published January 5, 2024, shared 20 Ways Managers Can Create A Culture Of Continuous Learning:

Core recommendations:

- Integrating learning into the everyday workflow
- Leading by example and fostering peer learning
- Personalized and relevant learning experiences
- Creating a supportive and inclusive learning environment

1. Share Learning Content Regularly In An Informal Way
2. Lead By Example
3. Utilize Online Learning Resources
4. Make Every Meeting A Learning Opportunity
5. Leverage Generative AI For Suggestions In Performance Reviews
6. Make Room For Informal Exploratory Learning
7. Align Training Programs With Needed Skills
8. Hold Employee-Led Lunch And Learns
9. Assign Team Members HR-Related Topics To Research
10. Get Employees Interested
11. Establish Small Group Meetings For Peer
12. Focus On Well-Being
13. Normalize Failure
14. Share Informal Learning Content With Your Team
15. Attend Professional Development Opportunities And Share What You've Learned
16. Focus On Value Proposition
17. Create Regular Opportunities
18. Promote Active Participation Throughout The Company
19. Allow Employees To Weigh In On The Value Of Continuous Learning
20. Ask Employees What They Have Learned This Week

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