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## Language as a tool for protection: the importance of technical communication in the training of occupational safety professionals.

*Language as protective equipment: the importance of technical communication in the training of workplace safety professionals*

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### Summary

This scientific article analyzes communicative competence as an indispensable tool for the prevention of accidents and occupational diseases, situating the discipline of Technical Communication as a structuring axis in the training of Occupational Safety Technicians. The research problem investigates how the failure to interpret regulatory standards and the imprecise writing of technical reports contribute to the ineffectiveness of safety management systems. The general objective is to demonstrate that mastery of standard language and specific technical language is not merely a bureaucratic requirement, but a requirement for protecting life in the workplace. The methodology adopted is an integrative literature review, correlating theories of applied linguistics, andragogy, and occupational safety legislation in force until 2021. The results indicate that clarity in the issuance of Work Orders and assertiveness in Daily Safety Dialogues (DDS) are crucial for workers' adherence to safe procedures. It is concluded that technical literacy, promoted by public vocational education, is a vector for risk reduction and the promotion of a lasting prevention culture.

**Keywords:** Technical Communication. Occupational Safety. Professional Literacy. Accident Prevention. Vocational Education.

### Abstract

This scientific article analyzes communicative competence as an indispensable tool for the prevention of accidents and occupational diseases, situating the discipline of Technical Communication as a structuring axis in the training of Workplace Safety Technicians. The research problem investigates how failure to interpret regulatory norms and imprecise technical report writing contribute to the ineffectiveness of safety management systems. The general objective is to demonstrate that mastery of the standard language and specific technical terminology is not merely a bureaucratic requirement, but a requirement for protecting life in the work environment. The methodology adopted is an integrative bibliographic review, correlating theories of applied linguistics, andragogy, and workplace safety legislation in force until 2021. The results indicate that clarity in issuing Service Orders and assertiveness in Daily Safety Dialogues (DDS) are determinants for worker adherence to safe procedures. It is concluded that technical literacy, promoted by public vocational education, is a vector for risk reduction and the promotion of a perennial prevention culture.

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## 1. Introduction

Technical training in Brazil, especially in the field of Occupational Safety, Historically, it has prioritized mastering regulatory standards (NRs), knowledge about Protective equipment and occupational hygiene. However, professional practice reveals that the Technical knowledge, when not communicated effectively, loses its protective capacity. This article proposes a reflection on Technical Communication not as an ancillary discipline,



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but as an intangible "Collective Protective Equipment" (CPE). The inability of a technician

Failure to write a comprehensible report or to provide clear training can result in errors.

catastrophic. Therefore, the intersection between the fields of Humanities and Technology is urgent and necessary.

for the training of competent professionals.

The rationale for this study lies in the observation that a large proportion of accidents...

The root cause or contributing factor to this problem is a failure in communication. Whether it's a lack of understanding...

from a signpost, from misreading a chemical product label, or from misinterpreting it.

The flawed nature of risk analysis, and the language used to permeate all preventative activities, is evident.

A security professional acts as a mediator between the legislation (technical-legal text) and the reality on the ground.

factory (operational reality). If this mediation fails due to linguistic incompetence, the

Security is compromised. Therefore, the teaching of technical communication in the state public school system assumes...

a strategic role in workforce qualification and in preserving the physical integrity of

workers.

This work is structured around the analysis of five fundamental axes: the language of

regulatory standards and their interpretation; the technical drafting of official documents (PPRA,

PCMSO, LTCAT); oratory and teaching skills in safety training; inclusive communication in

work environment; and the role of the educator in building technical literacy. The methodology

revisits authors of applied linguistics in the workplace and ABNT standards related to documentation.

technical aspects, seeking to establish a standard of excellence for the performance of safety technicians.

The central hypothesis is that linguistic rigor is inseparable from technical-scientific rigor in the prevention of

accidents.

## **2. The interpretation of normative texts as a technical competence**

The basis of a Safety Technician's work is legislation, specifically the...

Regulatory Standards (NRs) of the Ministry of Labor and Employment. Reading these standards.

It requires a high degree of legal and administrative literacy. The professional needs to decode terms.

such as "unhealthiness," "dangerousness," "tolerance limit," and "action level," including their

Legal and practical implications. Failure to interpret a regulatory text can lead a company to legal and practical implications.

failing to comply with legal requirements generates labor liabilities and, worse, exposes workers to risks.

uncontrolled. The teaching of Technical Communication, therefore, should focus intensely on

technical hermeneutics, enabling the student to read, interpret and apply the law to specific cases with

Surgical precision.

In addition to the NR standards, the technician deals daily with equipment manuals, data sheets,

Safety data sheet for chemical products (SDS) and technical standards of ABNT (Brazilian Association of Technical Standards).

Brazilian Technical Standards Association). The ability to extract crucial information from these dense texts is



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vital. For example, misinterpreting the instructions for use of a gas detector in space.

Confinement can be fatal. The Technical Communication discipline equips the student with Instrumental reading and textual analysis strategies, allowing him to filter relevant information and discard the noise. Reading competence, in this context, is a survival skill and a risk management.

Producing text based on interpretation is also a challenge. The technician needs to transcend the language of the standard for the language of the "Work Order" (OS), a document that guides the worker. The worker is made aware of the risks inherent in their job. This transposition requires a skill of retextualization: transforming complex normative discourse into direct, imperative instructional discourse and accessible. If the work order is written ambiguously, the worker may perform the task in a way that is not accessible. Insecure. The vocabulary precision and syntactic clarity taught in the classroom therefore have a direct impact on the safe execution of operational tasks in industrial or construction environments. civil.

The constant updating of standards requires professionals to be independent readers and Critical. With the frequent revisions of the NR standards (such as the new NR-1 on Risk Management Occupational factors), a technician who does not possess well-developed reading skills becomes obsolete quickly. Public education, by emphasizing technical literacy, provides the student with the Tools for continuing education. He learns not only the content of the current standard, but the structure of normative thought, which allows it to adapt to future legislative changes without relying exclusively on external refresher courses, promoting their autonomy. intellectual.

The legal aspect of textual interpretation cannot be ignored. In cases of accidents or During inspections, the written records made by the technician are documentary evidence. A misinterpretation Information recorded in an inspection logbook can be used against the company or against the professional themselves. in civil and criminal proceedings. The civil and criminal liability of the safety technician is intrinsically linked to their ability to understand and record facts in light of the rules. A Technical communication, therefore, acts as a legal shield, ensuring that the actions prevention strategies must be properly grounded and documented in accordance with the law.

### **3. Technical writing and the production of security documents.**

The daily routine of a security professional is permeated by the production of documents: reports. Inspections, technical reports, Risk Management Programs (RMP), Preliminary Analyses Risk Assessment (APR) and CIPA meeting minutes. Technical writing differs fundamentally from literary writing or Journalistic writing; it must be objective, impersonal, concise, and unambiguous. The discipline of Technical Communication It trains the student's eye to eliminate unnecessary adjectives and focus on factual description. One



**Year V, v.1 2025 | Submission: 05/12/2025 | Accepted: 05/14/2025 | Publication: 05/16/2025**

A report stating "the equipment is very dangerous" is subjective and technically invalid; a report which states "the equipment has unprotected moving parts in violation of NR-12 item 12.4" It is technical and actionable.

Standardization is a key element in safety documentation. The correct use of The Portuguese language, combined with adherence to formatting standards, lends credibility to the technician's work. Grammatical or agreement errors in an official document, such as a Job Profile. Social Security (PPP), can disqualify the professional before Social Security or experts. judicial. Formal education in Literature applied to the technical field ensures that the future professional Understand the importance of standard language as a tool for establishing authority. A well-written document... The written document not only communicates the risk, but also demonstrates the professionalism and seriousness of the management. company security.

Clarity in writing operating procedures is vital. When writing a procedure For work at height, for example, the text must follow a strict sequential logic. A Ambiguity in the use of prepositions or conjunctions can alter the meaning of an instruction. vital safety. Technical Communication teaches the use of verbs in the imperative or infinitive form, to Structuring topics and prioritizing information. The goal is for the document to be read and understood in the same way by any worker, regardless of their level of educational level, ensuring standardization and safe execution.

Synthesis is another skill that is developed. Faced with large volumes of data collected in When taking environmental measurements (noise, heat, dust), the technician needs to synthesize the conclusions clearly. for management. The decision-maker (director or manager of the company) is often not a security expert. The technical report must therefore translate technical data into information. managerial aspects, highlighting risks, costs, and investment needs. The ability to argue effectively. Written communication, developed through textual production, is what allows the coach to convince senior management. Investing in security, saving lives through the correct allocation of resources.

Technological evolution has brought new challenges, such as data entry into systems. Governmental systems like eSocial. Accuracy in risk categorization and activity description. In these digital systems, accuracy is critical. A typo or a vague description can lead to fines. automatic or the denial of special retirement benefits. Digital literacy, combined with Linguistic proficiency is essential for navigating these platforms. The technician's training should... Therefore, integrating traditional technical writing with the new requirements of digital tax accounting is essential. and social security, preparing you for the 4.0 reality of workplace safety.

#### **4. Andragogy and public speaking: verbal communication in training.**

In addition to written communication, workplace safety relies heavily on verbal communication.



**Year V, v.1 2025 | Submission: May 12, 2025 | Accepted: May 14, 2025 | Publication: May 16, 2025**

Introductory training sessions, Daily Safety Dialogues (DDS), and CIPA meetings require that the

The technician should be an educator. Andragogy (adult education) is the theoretical framework that should guide them.

This practice. The target audience often has heterogeneous and wide levels of education.

Practical experience. Technical communication must be adapted to engage with this audience.

avoiding arrogant "technicality" and seeking a dialogical language that values the knowledge of

worker while introducing the concepts of prevention.

The coach's oratory skills and demeanor during training directly influence learning.

of the content. An insecure or monotonous communicator cannot engage the team in the culture of

safety. The Technical Communication discipline covers presentation techniques, voice usage,

Body language and audiovisual resources. The goal is to transform the coach into a leader.

A communicator, capable of influencing behavior. Accident prevention involves change.

Attitude change is essential, and this change only occurs through persuasive, empathetic, and assertive communication.

that convinces the worker that safety is a non-negotiable value.

Clear communication in emergencies is a critical aspect. In disaster situations...

(fire, chemical leak), communication must be immediate and free of noise. The technician must

to be trained to issue clear commands and remain calm when communicating via radio or system.

Sound. Simulating crisis situations in the classroom, focusing on communication, prepares the professional.

to perform under pressure. Choosing the right words in a moment of panic can determine the outcome.

The success of an evacuation and the preservation of lives.

Feedback is an essential communication tool in safety management. The technician

You need to know how to correct unsafe behavior constructively, without creating conflict.

unnecessary. Nonviolent communication (NVC) can be a useful approach, teaching the

A technician observes the situation without judgment, expresses the need for security, and formulates a request.

Clearly, a change in behavior is necessary. Interpersonal communication skills are fundamental for...

Maintaining a positive organizational climate, where safety is seen as mutual care and not just...

as punitive oversight.

Cultural diversity in the workplace also requires communicative adaptation. In

In large construction projects or industries, it is common to find workers from different regions of the country or

even immigrants. The coach must be aware of linguistic variations and possible cultural barriers that

Linguistic sensitivity, which has been developed, may hinder the understanding of safety regulations.

In a humanistic education within the field of Literature, it allows the professional to identify these barriers and seek strategies.

Alternative communication methods, such as the use of images, practical demonstrations, or the assistance of interpreters.

Informal interactions within the team.



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## 5. Literacy and inclusion: contemporary challenges in security.

The inclusion of People with Disabilities (PwD) in the labor market, supported by Law Quotas bring new challenges to communication in occupational safety. The technician needs to be Prepared to communicate risks to deaf, blind, or intellectually disabled workers.

Training in Special Education and Inclusion equips professionals to adapt training programs. and signage. This may involve the use of Libras (Brazilian Sign Language), Braille materials, Tactile signage or simplified language. Safety should be accessible to all, and communication It is the bridge to that accessibility.

Functional illiteracy is still a reality in many productive sectors of Brazil. The safety technician frequently encounters workers who can decipher the letters, but They do not understand the meaning of a complex text. Technical communication should therefore utilize Multimodal resources. The use of pictograms, colors, videos, and infographics should complement or even... Replace written text in certain situations. The ability to transcode information from Security regarding nonverbal communication is an advanced skill that should be encouraged in... technical training.

Inclusion also encompasses the generational issue. The job market today coexists with *Baby Boomers*, *Generation X*, *Millennials*, and *Generation Z*. Each generation has its own communication codes and... Different learning methods. The safety technician needs to navigate these codes. using everything from traditional bulletin boards to messaging apps and gamification to Engaging younger people. Communicative flexibility is essential for the preventative message to get across. reach the entire workforce, respecting the specific needs of each age group.

Mental health and psychosocial risks have gained relevance in safety management. (especially with the new NR-1). Communication on sensitive topics such as stress, harassment and Depression requires careful vocabulary and active listening. The safety technician often... It is the first point of contact for the suffering worker. Humanistic training offers the Support to ensure that this communication is welcoming and ethical, guiding the worker to seek help. specialized without stigmatization. The word, in this context, has both therapeutic and preventative functions.

Finally, technical literacy is a tool for citizenship. By teaching workers to read By understanding the risks of their activity, the safety technician is promoting empowerment. of that individual. A worker who understands the "why" of safety regulations ceases to be a He is no longer merely an order-taker, but an active agent of prevention. Education for safety, mediated by effective communication, it contributes to the formation of a collective awareness of Preservation of life, which transcends the walls of the company and impacts society as a whole.

## 6. Conclusion

The argumentative trajectory of this article demonstrates that Technical Communication is not a peripheral discipline, but the foundation upon which the effectiveness of Occupational Safety is built. It is a discipline that involves the analysis of the interpretation of rules, the drafting of documents, public speaking in training sessions, and... Inclusion reveals that linguistic competence is, in fact, a protective tool. The failure to communicate is, invariably, a security flaw. Professionals like Mônica dos Reis Trevisani, who have dedicated decades to the interface between language education and technical training, they play a crucial role in qualifying the national workforce.

The training of Occupational Safety Technicians should, therefore, continue to value and deepen the teaching of the language in its technical and instrumental aspects. It is necessary that... Educational institutions and regulatory bodies recognize that language proficiency is so vital. Regarding mastery of firefighting or first aid techniques. Precision in speech. It avoids errors in action. Clarity in the text prevents accidents in the field.

It can be concluded that investment in technical literacy and inclusive communication is a life investment. In an increasingly complex and regulated industrial landscape, the professional who masters the art of communication stands out not only for their excellence in technical skills, but also the ability to lead, educate, and transform organizational culture. Security begins, fundamentally, with a shared understanding of what is safe, and this understanding is only possible through efficient, humane, and technically rigorous communication.

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**Year V, v.1 2025 | Submission: 05/12/2025 | Accepted: 05/14/2025 | Publication: 05/16/2025**

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