Teaching Professional and Technical Communication: The Case of Technical Documentation

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ABSTRACT

The present article highlights important aspects that need to be considered in the design of the academic linguistic training oriented to develop students’ technical documentation-related writing skills viewed as critical career-boosting skills that influence and condition employees’ promotion and graduates’ hiring chances. Technical documentation is an umbrella term covering different types of technical documents (e.g. technical reports, manufacturing standards, installation guides, quick references cards, troubleshooting guides, release notes, etc.) which, irrespective of usage or function, observe general characteristics and share essential features whose effective recognition and knowledgeability facilitate students’ upward career trajectory. The topic is discussed from the perspective of two teaching priorities – awareness of stylistic features characteristic of technical documentation and awareness of performance standards in terms of technical documentation production – within the ESP (English for Specific Purposes) and BELF (English as Business Lingua Franca) frameworks that prioritize the performative and lingua franca dimensions of the English language use in the currently-emerging globalized workplaces.

Keywords: technical documentation, stylistic features, teaching guidelines.

INTRODUCTION

Currently, technical documentation is either the offspring of engineering professionals (engineers, technical experts, technical trainers, technicians, vendors or sales specialists) or the joint effort of engineering professionals and technical writers or, more adequately coined, technical communicators. Mike Markel claims that ‘the term technical communicator better reflects the increasing importance of graphics and the use of other media, such as online documentation’ (2010: 4) and exemplifies this partnership with a real-life situation: ‘… a computer engineer designing a new microchip will draft the specifications for that chip. The technical communicator will study that draft, interview the engineer to resolve any technical questions, and revise the specifications. Those specifications will be included in the company’s printed product catalog and web-based marketing materials.’ (2010:6).

Looking at the situation from a broader perspective and time span, technical documentation writing and, generally speaking, technical writing skills are revealed by numerous surveys (NACE 2017, NACE 2010, CEEB 2004) as critical career-boosting skills that influence and condition employees’ promotion and graduates’ hiring chances enabling subsequent securely-driven careers. Written communication skills are ranked third, after team-work and problem-solving skills, in the list of the skills employers are looking for most in an applicant’s CV. Moreover, the same surveys indicate employers’ preference for job candidates with demonstrated technical writing skills over already-employed staff needing customised training in this area. Needless to say, poor technical writing skills set back an upward career trajectory.
PRIORITIZED TEACHING GOALS

Two teaching priorities are highlighted by the present article as practical goals of the academic linguistic training customized for the current writing needs of the engineering students. They are discussed from the perspective of the reader-centred approach to writing (Anderson, 2010) and of the BEFL (English as Business Lingua Franca) trends (Kankaanranta & Louhiala-Salminen, 2013), which foreground the purpose-oriented and instrumental dimension of language in achieving job-related tasks, and include:

1) Awareness of stylistic features characteristic of technical documentation

In terms of usage, it is essential to distinguish between the restrictive term technical documentation, designating the physical description of a product, piece of equipment, system, its specifications, applications, maintenance, functionality, operation, etc., intended to be used by technical professionals to ensure optimum performance, as opposed to user documentation that refers to a commercial description, in a simple and accessible technical language, intended for the end user who needs basic knowledge and assistance to operate the device.

Technical documentation is also used as an umbrella term covering different types of technical documents, such as technical reports, recommendation reports, manufacturing standards, tutorials, information materials, installation guides, quick references cards, troubleshooting guides, release notes, scenario tests, functional specifications, quality management system requirements, etc.

Irrespective of usage or function, technical documents observe the general characteristics of technical communication:

- accurate, precise, simple style (KISS style (Keep It Simple Style))
- unambiguous language and content adapted to the targeted reader’s background knowledge of the subject
- avoidance of verbiage and redundancy

and share essential features:

- are designed and targeted at specific readers with specific technical knowledge background and expectations
- provide usable information that enable readers solve technical problems
- are collaborative documents that unite joint efforts and expertise of various engineering professionals (technical experts, maintenance specialists, production engineers), technical communicators, web designers, online documentation specialists, graphic artists, vendors, etc.
- display a structured content for ease of information management and traceability
- display high prevalence of passive voice patterns to provide definitions, to explain processes, methodologies, procedures, rules or to describe analysis and findings:

Potential energy is that energy contained in a body or particle, because of its position in a field of force or because of its interactive position within nearby bodies or particles. Potential energy is held e.g. by a raised body, a spring in tension or in the water of a mountain dam. Water power is converted to electrical energy and this, in turn to electric heat, power to drive motors or light from electricity. The energy of light is stored as chemical energy in the
atoms and molecules of organic material. This energy can be released during combustion as heat, light and power.

(Introduction to building technology, http://www.hqs.sbt.siemens.com/)

- display high prevalence of ‘purpose’ or ‘result’ structures to articulate targeted actions, expected goals or results achieved:

  **in order to** (Verb\textsubscript{infinitive}), to (Verb\textsubscript{infinitive}), **in order not to** (Verb\textsubscript{infinitive}), **so as not to** (Verb\textsubscript{infinitive}), **for + noun + to** (Verb\textsubscript{infinitive}), **so that**

  **In order to get around** this problem, systems designed for comfort supply filtered and heated water at many locations along the bottom of pool.

  The tendency of warmer water to form a layer over colder water is so strong **that** such stratification even remains preserved in piping over long distances
  (Introduction to building technology, http://www.hqs.sbt.siemens.com/)

  *Desigo* relays all critical alarms to the responsible personnel via SMS **so that** measures can be taken quickly and efficiently.
  (Building Management for Atlantis The Palm, http://www.buildingtechnologies.siemens.com/)

  The operator required a reliable, integrated solution **for** all building **functions to heighten** the shopping experience at Dolce Vita Tejo and at the same time **ensure** the highest levels of safety and security.
  (Reliable Total Building Solutions for monumental shopping mall, http://www.buildingtechnologies.siemens.com/)

- display high prevalence of simple tenses (past simple, present simple and future simple) to report facts, to describe contexts, situations, phenomena, results, achievements or to provide explanations

  Thanks to the services **made** available by the data center, critical business functions are safeguarded for many Asian enterprises, and maximum business continuity is ensured by fire safety and security systems. The intelligent building technology at SCB’s **reduces** energy consumption by roughly a third compared to similar structures in China and **reduces** annual CO\textsubscript{2} emissions by up to 1600 tons.
  (Integrated solutions for fire safety, security, and energy efficiency, http://www.buildingtechnologies.siemens.com/)

- display high prevalence of **if-clause** patterns to describe various hypotheses and scenarios

  **If there is** sufficient thermal storage mass (concrete, brick-work), the building **will stay** pleasantly cool even at the hottest time of day, without the need for additional cooling equipment.

  This characteristic **represents** the behaviour of a typical hydraulic pump **provided** there is no control action to influence how the pump operates.
  (Introduction to building technology, http://www.hqs.sbt.siemens.com/)
• feature logical organization, completeness of information (i.e. provision of all necessary and relevant information) and consistent terminology (use of the same terms to designate concepts) to enable comprehensibility;

• ensure readability, comprehensibility and user-friendliness by combining text and visual information.

2) Awareness of performance standards in terms of technical documentation production

In addition to the linguistic knowledge, it is essential to have students assimilate and apply knowledge patterns related to the process and stages of generating technical documentation up to the printing moment observing communication policies and practices enforced in the current English-speaking working environments. While it is true to claim that, at this stage, it’s unlikely to have all students generate professionally-validated technical documentation, simplified tasks such as issuing basic operation instructions, status reports, quick references cards, etc., can be simulated and achieved properly by all learners.

It is sensible to raise students’ awareness with respect to the stage-based and cumulative design of technical documentation entailing four core steps:

• defining technical documentation requirements based on customer needs, ideally retrieved first-hand; at this stage, the performance standard involves students’ competence to set the scope of the documentation, initiate and carry out consultations with the customer and have the scope mutually agreed and endorsed;

• drafting the documentation structure and layout in terms of relevant informational content, functional and user-friendly design, style adequacy and visual-textual interplay; the second performance standard refers to the students’ ability to design the optimum content and format in line with the customers’ expectations, templates and communication practices and corporate policy;

• the actual writing process of the technical documentation considering customer/end user information-related expectations; at this stage the student should demonstrate specific writing skills such as rendering instructional information, procedural information, cause-effect relations, cumulative effects, process segmenting, etc.;

• evaluating and preparing documentation for publication; at this stage, students should adopt a collaborative work style and ensure a quality output by improving the draft documentation based on review and feedback retrieved from relevant technical experts and communicators so that the ready-for-printing material is visually attractive and accurately informative. Familiarization, through project-based assignments, with content management systems such as Joomla, WordPress, Drupalis, extensively used by companies nowadays to manage digital technical content, is equally important at this final stage.

CONCLUSION

Harnessing the author’s teaching experience with technical students as well as relevant survey and research highlights, the present article has advanced vital knowledge patterns needed in currently-emerging professional settings and viewed as essential in the design of the academic linguistic training oriented to build students’ career readiness. They refer, on the one hand, to linguistic patterns (e.g. passive voice patterns to explain procedures, if-clause patterns to articulate hypotheses and cause-effect relations) whose skillful command enable students generate elegantly-written
technical texts in an adequate professional jargon, and, on the other hand, to professional environment-specific knowledge (e.g. familiarization with web content management systems) related to the production of technical documentation in currently-emerging professional environments. Their assimilation, personalization and hands-on deployment help students to perform comfortably engineering job-specific tasks and, equally important, facilitate fast and secured career advancement.

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