



Challenges in the Application of ABNT Standards: A Study on the Transition to Higher Education and Academic Production

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Summary

The transition to higher education implies an increase in academic difficulty and the need to comply with ABNT standards in the production of academic work. This study seeks to analyze the main difficulties faced by higher education students in understanding and applying ABNT standards, as well as in producing academic work. The research is based on a literature review, using a methodological approach to identify, analyze and synthesize studies on these difficulties. The results reveal that the lack of familiarity with ABNT standards, the complexity of the standards and the lack of adequate guidance are challenges faced by students. In view of this, higher education institutions and responsible bodies must promote awareness and offer support in the application of ABNT standards from the beginning of students' academic careers.

Key words: Higher education, ABNT standards, Academic production.

Abstract

The transition to higher education involves an increase in academic difficulty and the need for compliance with ABNT standards in academic work production. This study aims to analyze the main difficulties faced by higher education students in understanding and applying ABNT standards, as well as in academic work production. The research is based on a literature review, using a methodological approach to identify, analyze, and synthesize studies on these difficulties. The results reveal that lack of familiarity with ABNT standards, the complexity of the standards, and the scarcity of adequate guidance are challenges faced by students. Therefore, it is necessary for higher education institutions and responsible organizations to promote awareness and provide support in applying ABNT standards from the beginning of students' academic journey.

Keywords: Higher education, ABNT standards, Academic production.

1. Introduction

The transition to higher education is marked by increased academic difficulty and the requirement to comply with ABNT standards in the production of academic work. From subject activities to course completion work, students face the challenge of mastering formatting and standardization requirements. Although scientific methodology disciplines provide a basis, these instructions are often insufficient to address all the nuances of ABNT standards.

Complexity increases at advanced levels of study, such as master's and doctorate degrees, where writing and publishing scientific articles becomes imperative. Although extracurricular courses in scientific writing and ABNT standardization can be a solution, the demands of the course, combined with professional and personal responsibilities, make this option unfeasible for many students.

In this context, this study's general objective is to analyze the main difficulties faced by higher education students in understanding and applying ABNT standards, as well as in producing academic work.

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The specific objectives are: Identify previous studies that address students' difficulties in applying ABNT standards; Explore the possible causes underlying difficulties in understanding and applying ABNT standards; Discuss best practices to help students understand and apply ABNT standards.

The justification for this research lies in the need to provide additional support to students, in order to facilitate their adaptation to the academic environment and promote the development of essential skills for their professional training.

1.1 Methodology

This study is based on a literature review, using a methodological approach to identify, analyze and synthesize studies on students' difficulties in applying ABNT standards and producing academic work.

A search was carried out in academic databases. Inclusion criteria were defined and applied to select relevant studies. Studies that addressed students' difficulties in applying ABNT standards and producing academic work were considered. Studies that were not related to the topic or that did not meet the defined quality criteria were excluded.

The selected studies were evaluated and pertinent data will be extracted and organized according to the specific objectives of the study. The results were discussed in light of the existing literature, highlighting the main difficulties identified, their possible causes and the recommended strategies to overcome them. Conclusions and recommendations were presented with the aim of improving the understanding and application of ABNT standards and the production of academic work.

2 Theoretical Framework

2.1 From Scientific Revolution to Scientific Initiation

The period that precedes the adoption of a paradigm is marked by constant debates and disputes. The paradigm incorporates elements of a metaphysical nature that shape the work itself within this model. The dynamics of events in Brazil and around the world demonstrate the need to adapt to new circumstances (Freitas, 2023).

These adaptations, as is common with everything new, often bring with them complex structures, not always receptive to changes, when it comes to previously established models. In these situations, innovative practices play an important role in several sectors.

The period of normal science is one in which we work within a certain paradigm adopted by a scientific community. During this period, problems are defined, containing their solutions. This phase is also characterized by the gradual accumulation of knowledge, resulting in the construction of more sophisticated instruments, allowing more precise measurements, without necessarily seeking novelty (Moreira, 2022).

However, there are flaws that can become serious and trigger a crisis in the paradigm, leading to its rejection and replacement by another. Thus, it is up to scientists to structure problems, but as more anomalies emerge, the crisis sets in, undermining confidence in the established paradigm and initiating philosophical discussions about foundations and methods.

The crisis deepens when a rival paradigm emerges, which is different and incompatible with the previous one, resulting in the reconstruction of the field of investigation based on new foundations. An example of this is the Galilean revolution of the 17th century, in which observations of sunspots made by Galileo through a telescope contradicted the current paradigm.

The paradigm can be compared to a kaleidoscope, where a change alters the pattern of mirrors, creating a new configuration. In this context, Galileo introduced a new paradigm. However, the choice between theories often involves subjective factors and judgments on the part of scientists (Novais, 2020).

Therefore, the scientific revolution represents the abandonment of one paradigm in favor of another, by the entire scientific community, and not by isolated individuals (Pirozelli, 2021). In his 2018 book "The Structure of Scientific Revolutions", Thomas Kuhn revolutionized the philosophy of science in the 20th century by offering a historical analysis that revealed a conception of science that was different from the traditional ones.

According to Kuhn (2018, p. 20):

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If science is the collection of facts, theories and methods gathered in current texts, then scientists are men who, with or without success, have endeavored to contribute one or another element to this specific constellation. Development becomes the gradual process by which these items were added, singly or in combination, to the ever-growing stock that constitutes scientific knowledge and technique. And the history of science becomes the discipline that records both these successive increases and the obstacles that inhibited their accumulation. Concerned with scientific development, the historian then seems to have two main tasks. On the one hand, he must determine when and by whom each fact,

contemporary scientific theory or law has been discovered or invented. On the other hand, it must describe and explain the piles of errors, myths and superstitions that inhibited the faster accumulation of the constituent elements of the modern scientific text. Much research has been directed for these purposes and some still are.

Kuhn (2018) argues that the history of science can contribute to scientific work, bringing together facts carried out by practitioners from different scientific disciplines, and revealing flaws in the conception of science as a purely cumulative process. He watches:

[...] In recent years, some historians are finding it more and more difficult to fulfill the functions prescribed to them by the concept of development by accumulation. As chroniclers of an augmentation process, they find that additional research makes it harder (not easier) to answer questions like: When was oxygen discovered? Who was the first to conceive of energy conservation? Increasingly, some of them suspect that these are not the kinds of questions to be raising. Perhaps science does not develop through the accumulation of individual discoveries and inventions. Simultaneously, these same historians are confronted with increasing difficulties in distinguishing the 'scientific' component of past observations and beliefs from what their predecessors readily label 'error' and 'superstitions'. The more they study, say, Aristotelian dynamics, phlogistic chemistry or caloric thermodynamics, the more certain they become that, as a whole, the conceptions of nature were no less scientific, no less the product of idiosyncrasy than those in vogue. (Kuhn, 2018, p. 20 – 21).

In this context, Kuhn presents a new paradigm of science that challenges the traditional cumulative conception, highlighting the importance of scientific work throughout history and the behavior of scientists within the scientific community (Pirozelli, 2021).

Traditional teaching practice is still present in the country's academic institutions, where teachers tend to transmit finished knowledge as absolute truths to students (Malanchen, 2022). We do not align with this approach. We defend a model that stimulates students' cognitive development.

Thus, research arises when there are problems to be solved and questions to be answered. It was this vision that guided the development of this article in question. Scientific Initiation becomes an essential instrument to introduce students to the world of research, offering theoretical and methodological support for carrying out studies that contribute to students' professional training.

Its purpose is to awaken the scientific vocation and encourage potential talents among undergraduate students, motivating them through participation in research projects. To achieve this, it is necessary for advisors to generate quality scientific work, with the potential for publication in journals of national importance or relevance to teaching in general (Tavares, 2020).

The dynamics of knowledge in the contemporary world depends on research and techniques that aim at the physical and intellectual development of society. New discoveries and improvement methods result in advances for life in society. Therefore, it is essential to value and improve scientific work, both in Brazil and around the world (Castro, 2023).

It is interesting to observe the evolution of knowledge over the centuries, a process that has accelerated to the present day. Even in Antiquity, significant social and economic changes were already taking place.

The first signs of human presence on Earth date back to approximately 200,000 years ago, but only in the last 2 to 3 thousand years has humanity begun to develop more critical and intellectual thinking. An analysis allows us to see the difference between today's society and that of 200 years ago, as well as examine the social and scientific transformations that have occurred in Brazil in the last 100 years.

3 Scientific work, as the engine of these changes, aimed to advance knowledge and develop new techniques for technological and social purposes. An example of this are the theories developed in the past, such as the General Theories of Administration, which had an impact on the structuring of business society. From Taylor's Scientific Management to Fayol's Classical Management, theories and paradigms emerged to face the organizational challenges of the time, although not all of them remain applicable to contemporary problems (Knappe, 2022).

Each stage of scientific development has its particularities. The initial stage is marked by the student's learning, who must acquire study, reading and personal documentation habits. Then, the student enters the research phase, where it is necessary to use a solid theoretical framework and reliable sources.

Subsequently, in the scientific production stage, the research results are disseminated to the scientific community and validated through peer review.

Chaves and Campos (2022) emphasize that the search for links between work and education has sparked interest in better understanding the world of work, an area often neglected in pedagogical research and reflections.

Projects, also known as didactic projects, are organizational forms of a teaching process whose main characteristic is the beginning in a problem situation and articulation around a specific objective. Therefore, working with projects is a special approach to developing both teaching and research, resembling the dynamics of a team that comes together to develop a research project in an educational institution or company.

These situations promote skills such as group work, sharing ideas, respecting the opinions of others and collaboration, requiring you to give up your own opinions in favor of better solutions. The projects also enable interdisciplinary assessment of content, encouraging research and facilitating monitoring of the development of skills throughout the modules.

When creating a research project within the faculty, the aim is to articulate the skills developed in each module, promoting reflection on these skills, developing research and data interpretation skills, stimulating critical thinking, and awakening interest in professional research.

Furthermore, the projects seek to encourage creativity, promote interaction between technical knowledge and its application at work, and familiarize students with scientific language through the publication of articles, placing them as protagonists of knowledge and improving their professional profile (Campos; Stem, 2020).

2.2 Challenges in applying ABNT Standards

The Brazilian Association of Technical Standards (ABNT) is an institution established in 1940, recognized as the main national standardization body and made official at the federal level. As disclosed on its official website, ABNT develops Brazilian Standards to guide the preparation of academic works, and is committed to implementing programs that ensure safety, ethics and recognition of products and services (ASSOCIAÇÃO BRASILEIRA DE NORMAS TÉCNICAS, 2022).

Standardization's main objective is to structurally standardize academic work, reduce variations and organize information, contributing to the authenticity of authorship. In the academic context, the most relevant Brazilian Standards (NBR) include NBR 10520/2002, for citations; NBR 6023/2018, for references; NBR 14724/2011, for preparing academic works; and NBR 6022/2018, for publishing articles, among others (Nunes, 2022).

Adherence to standards for standardizing academic and scientific work is considered a requirement for those who carry out research in academic and scientific institutions. This technical competence is an integral part of the scientific communication process, essential to guarantee the circulation of information in the academic environment, whether verbally, non-verbally or written (Lima; Brasil, 2024).

General standards, often national in nature, use technical and sometimes concise language, which can make their interpretation challenging. The development of institutional manuals is a useful practice, as they translate and adapt general rules to specific practical situations, facilitating their understanding and application. However, it is important to note that some instructions may present inaccuracies or errors in relation to the documentary guidelines, which may hinder their implementation (Lima; Brasil, 2024).

For many university students, professors and researchers, the task of transforming research into scientific text can be challenging. Writing an academic work requires skills such as mastering formal writing, being concise and coherent, and ensuring that the text is accessible to all readers, including those less outside the area of specialization. Reviewing and adjusting the text during the writing process is essential to ensure that it remains relevant, coherent and understandable (Silva et al., 2022).

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Precision in scientific communication is necessary, as it reflects the rigor of scientific thinking and inspires confidence in the reader, ensuring that the interpretation is correct and logical. On the other hand, inaccuracy can result in errors. In addition to different individual interpretations, a lack of precision can also be observed in the bodies responsible for disseminating and guiding document standardization guidelines. It is important to highlight how inaccurate information, in addition to harming standardization at a local level, can mislead people when submitting their work to other academic bodies that require the application of established standards. When applied in broader contexts, such as those

who consult institutional guidelines for public tenders, there is a risk of promoting errors, even among more experienced users (Lima; Brasil, 2024).

The transition to the university environment can be difficult for freshmen, being marked by an increase in the level of demand and autonomy compared to high school. Students face issues such as adapting to academic writing, understanding the different types of academic text and searching for relevant bibliographic sources. Therefore, a good bibliographic collection is fundamental for the construction of knowledge (França et al., 2022).

With regard to references and citations, knowledge of specific standards is essential to avoid plagiarism. Lack of familiarity with these standards can lead students to assume ownership of ideas that are not theirs. The dissemination of these standards should not be the exclusive responsibility of higher education institutions, but also of basic education institutions and the media, aiming to raise awareness in society about their importance and application (Nunes, 2022). Andrade (2023) highlights the importance of respecting copyright, as established by ABNT standards, as part of the ethical aspects of scientific research.

Therefore, it is essential to highlight the importance of academic standards from the beginning of the academic trajectory of university students. Guiding them on where to find the standards and how to apply them helps them build a foundation from the first semester onwards. Many students enter university without basic knowledge about the standards, which highlights the need for education on this topic (França et al., 2022).

In this context, it is understood that scientific research plays a fundamental role in higher education institutions, whether public or private. Teachers must guide students in understanding scientific knowledge, encouraging them to carry out research as part of their training. Furthermore, the discipline of Scientific Research Methodology stands out as a scientific tool, helping students in the search for answers and organizing explanations about reality (Assunção, 2023).

Conclusion

This study aimed to analyze the main difficulties faced by higher education students in applying ABNT standards, as well as in producing academic work. Throughout the research, it was possible to identify that these obstacles are linked to the transition to the academic environment, marked by increased demands and autonomy in relation to high school.

One of the main challenges faced by students is the lack of familiarity with ABNT standards, which can result in errors when preparing academic work, such as inappropriate citations and plagiarism. This lack of knowledge is often attributed to the lack of prior education on the topic, both in high school and in the first semesters of university.

Furthermore, it was observed that the complexity of ABNT standards and the technical language used can make their interpretation and application difficult, especially for beginner students. In this sense, the lack of adequate guidance from educational institutions and the scarcity of extracurricular courses on the topic contribute to the perpetuation of these difficulties.

Given this scenario, it is essential that higher education institutions and bodies responsible for disseminating ABNT standards promote educational actions aimed at raising students' awareness of the importance and application of these standards from the beginning of their academic career. Furthermore, it is essential that teachers are prepared to guide students and offer support in preparing academic work.

In this context, it is understood that scientific research plays a prominent role in the training of higher education students, and the understanding and application of ABNT standards are essential skills for the academic and professional development of students. Therefore, there needs to be a joint effort by educational institutions, teachers and students themselves to overcome these difficulties and guarantee the quality of the academic work produced.

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