

## **Information technology and school culture**

### **Abstract**

It is a truism to say that information technology constantly influences school culture, both in terms of teaching methods and ways of communication between students, teachers, and the administration. Faced with this undeniable reality, this research paper strives for a deeper understanding and exploration of the impact that information technologies have on the structural and cultural aspects of the school environment. Rooted in an interdisciplinary approach, the study focuses on analyzing changes in the dynamically developing educational landscape, where digitization and information technologies are becoming an increasingly integral part of school life.

The above observation initiated a research project focused on analyzing the impact of information technology on school culture, considering the complex interactions between technological innovations and the traditional aspects of the educational environment. The goal of my research was not limited to merely describing the current conditions but extended to a deeper understanding and reflection on the potential of information technology. The justification for these considerations was the lack of extensive publications addressing the analyzed topics, with most existing materials seeming insufficient in the face of an evolving educational system. There is a noticeable shortage of research involving students, teachers, and the administration. Although authors can be identified who deal with issues of information technology and/or school culture, there is a lack of a comprehensive and current approach that treats technology and culture as interacting categories.

I have structured the dissertation into five chapters. In Chapter I, I performed an analysis of school culture as a key element in the educational structure. In this chapter, I defined culture in an organizational context, paying special attention to the specifics of educational institutions. Moreover, the inquiry focused on conceptualizing the school as an organization, exploring the nature of organizational culture in an educational setting. Subsequent parts of the chapter presented definitions of organizational culture and school culture, which enabled me to deeply understand these concepts and their application in a school context. The relationship between school culture and the effectiveness of the school was also discussed, emphasizing the importance of organizational culture for the overall efficacy of educational institutions. Further considerations undertook a discussion, capturing the school as an element of the social system, providing two different perspectives on the school: structural and interpretative. These approaches allowed for a deeper understanding of the role of the school in a broader social and

cultural context. The chapter concludes with a relationship between school culture and organizational culture. Subcultures within school culture, including the student subculture, the teaching team, and school directors, were discussed in detail. This part of the work emphasized the complexity and dynamics of the cultures prevailing in the school environment, as well as the diversity of experiences and perspectives among students, teachers, and directors. In summary, the first chapter provided a comprehensive and multifaceted approach to school culture, examining its various dimensions and impact on the functioning of educational institutions. This analysis constitutes an important contribution to understanding the complex relationships and processes that shape school culture, as well as their significance for the effectiveness and development of education.

In Chapter II of the dissertation, I conducted an analysis of information technology in the context of education, considering its growing importance and influence on contemporary educational processes. The next section provides a thorough review of the role of information technology in education, emphasizing its fundamental function as a tool for the realization of educational tasks. In the chapter presented, I included both the hopes and threats associated with information technology, providing a balanced picture of its potential benefits and challenges. The discussion covers various aspects of technology use in the educational environment, including its impact on teaching and learning processes, as well as on social and emotional interactions at school. Later in the chapter, I focused on strategies for the development of digital technology, presenting key directions and approaches in the educational context. This chapter investigates how digital competencies are embedded in the curriculum and how they are developed and assessed within the educational system. In conclusion, the second chapter of the doctoral thesis offers an in-depth and multi-dimensional look at the development and impact of information technology in education. It focuses on analyzing the role of technology as a tool in the educational process, as well as on assessing its impact on the broader aspects of school culture and society. It presents a comprehensive picture of the benefits and challenges associated with the integration of digital technology in education, emphasizing the need for balance between technological innovations and classical teaching methods to ensure effective and comprehensive education. The considerations conclude with an analysis of the relationship between information technology and school culture, and the impact of the experience of remote education during the COVID-19 pandemic on school culture in the context of modern technologies. This chapter presents a penetrating synthesis of digital technologies, capturing key aspects of the interaction between information technology and school culture. The analysis shows how the sudden transformation to remote education has

affected school culture, created challenges, and revealed new possibilities in terms of adapting teaching methods to the digital environment. All these aspects combine, painting a comprehensive picture of the relationship between information technology and school culture in the face of the rapidly changing world of education. To summarize the considerations so far, information technology, although it brings several challenges, also represents a valuable tool enabling the development and adaptation of school culture to contemporary realities. It points to the need for ongoing dialogue and cooperation among all participants in the educational process to effectively use technology in shaping an effective and engaging school culture. In Chapter III of my work, I focused on a detailed discussion of the research project methodology, including both the preparation and conduct of the research, as well as ethical issues that emerged during these activities. Chapter IV is divided into four parts, collectively forming a comprehensive and qualitative analysis of the conducted research. Within this chapter, I thoroughly analyzed and presented participants' opinions on information technologies and school culture, as well as the results of lesson observations. Chapter V focuses on presenting the key findings from the conducted research. It contains a detailed analysis of the changes occurring in school culture using information technology, as well as perspectives for further development of scientific research, which were discussed in the summary of the entire dissertation.

During this research, I decided to adopt a qualitative approach, which stems from the belief that it is impossible to capture all the phenomena studied using traditional measurement methods (Maszke, 2008, p.91). Phenomena that could theoretically be the subject of quantitative inquiries through defined measurable variables did not, however, correspond to the main assumptions of this research (Sołoma, 2005, p. 33). The aim of the research was not so much to measure, but to interpret, explore, and describe reality in a way that allows for a deep understanding of the phenomenon under study. In the process of defining a specific research topic, efforts were made to capture its essence, focusing on the "substance of the fundamental problem being researched" (Apanowicz, 2002, p. 126).

I defined the topic of the doctoral dissertation as follows: Information Technology and School Culture. In the process of detailed explication and precise definition of the terminology used within this research project, I decided to adopt the following assumptions:

- information technology is the integration of computer science applications with many other related technologies.

- school culture is a collection of values and norms, behaviors, and actions that constitute the essence and quality of the level of development achieved by the school and its community.

During the research conducted, I defined the research issues by formulating supplementary questions. Such constructed queries, starting with the word "what," prevented me from providing answers in the form of "yes" or "no," unlike decision questions, which are not applicable in the discussed project (Nowak 2017, p 248).

In the research process, I identified the general research problem:

1. What changes occur in school culture using information technology?

Considering the criterion of detail, I formulated the research questions as follows:

1. How is information technology used by students, teachers, and the administration?
2. How do social processes and interactions change using information technology by students, teachers, and the administration?
3. How does the culture of the school change in the process of education and the functioning of the school using information technology from the perspective of students, teachers, and the director?
4. How has the experience of remote education changed thinking about information technology within the school culture?

The complexity and multidisciplinary nature of the issues analyzed by me, as well as my commitment to maintaining the methodological solidity of the research (Babbie, 2004, p. 309), motivated me to simultaneously use various, mutually complementary research methods. Among them, there was the technique of observation, as well as conducting group and individual interviews.

In the qualitative interview conducted in my study, it took the form of a cooperative dialogue, in which both I and my respondents participated. The interview was dynamic and was conducted by me in stages, with an emphasis on allowing the subjects to express their perspectives comfortably and freely. The research methodology included two types of interviews: individual and group. I conducted interviews both directly and through internet communication tools (video) due to pandemic-related restrictions. In individual interviews, I used the technique of in-depth interviewing, allowing respondents to freely guide me through their life and experiences. In this form of interview, participants had autonomy in emphasizing and structuring various threads and issues. The interview was flexible and only partially organized by me, according to the research plan I had prepared, which did not impose rigidity in asking questions or a predetermined sequence. The interview guidelines prepared by me were

not a limitation, but a framework that allowed for the development of dialogue and emphasized my professional preparation for the study. The focused group interview, on the other hand, took place in the form of a moderated group discussion, involving several selected participants, in line with the scenario I had prepared. This part of the study was crucial for me due to the observed group dynamics, the synergy effect, and the creative inspiration of the participants. The group discussion was based on a scenario previously prepared by me, which defined the main directions of the research and served as an outline for the planned order and scope of the topics discussed.

In my doctoral research, I based qualitative observations on non-intrusive participation in authentic everyday life scenarios of the subjects. Following Muszyński's concept (2018, p. 179), this method can be defined as natural observation, characterized by recording spontaneous human behaviors without modifying external conditions or the course of events. In my research, the openness of the observation and acceptance by the participants became crucial, while simultaneously excluding my direct involvement in the observed events (non-participant observation). This approach to observation did not allow me to precisely predict all categories of behaviors exhibited by the observed individuals, which required me to create a suitably flexible research tool (Rubacha, 2016, p. 124). In the observation sheet I prepared, alongside the defined research problem, I recorded observed facts and circumstances related to this problem. The research process was directed towards detailed, written documentation of observations, supplemented by collecting material in the form of my field notes.

I conducted the research project from 2020 to 2023, focusing on the Lower Silesian Voivodeship, including institutions in Strzelin and Wrocław, covering both primary and secondary schools. This study did not aspire to be representative, meaning I did not need to engage a large research group. To ensure diversity in the sample, allowing for a fuller understanding of the spectrum of phenomena within the analyzed topic (Konarzewski, 2000, p. 33), I decided to include three different groups of respondents: teachers, students, and school directors. The selection of study participants was based on purposive sampling, considering the diversity of perspectives of these groups (Konarzewski, 2000, p. 33), whose common denominator is the use of information technology within subcultures.

The subject of detailed analysis is how information technologies affect social and communicative relations between different participants of school culture in the school environment. This work aims to identify key trends, challenges, and opportunities that arise with the integration of new technologies in education. Thus, the fundamental goal is not only to diagnose the current state of information technology use in schools but also to anticipate

potential trajectories of its development and impact on students, teachers, and school management.

In this context, the study adopts a holistic approach, considering diverse perspectives - from microstructural aspects of individual experiences of students and teachers to macrostructural implications for educational systems. Special attention is also given to the aspect of equality of access to technology and its impact on reducing or deepening educational and social disparities. Through this, the work becomes a significant contribution to the debate on the role of information technology in shaping contemporary education and school culture.

This work sheds light on diverse approaches to technology, highlighting how teachers adapt to new digital tools. In the context of students, the study reveals that although information technology facilitates the formation of virtual student communities and allows for the individualization of the teaching process, it also generates issues such as attention dispersion and social isolation. The COVID-19 pandemic, as a global experiment in education, has intensified these problems, emphasizing the crucial role of technology in ensuring the continuity of the educational process and its limitations.

Regarding school management, information technology has become a tool for increasing management efficiency, although it has not fundamentally remodeled their roles. It has, however, changed the way of communication and collaboration, illustrated by the analysis of interactions between directors and teachers.

In summary, this work provides a comprehensive view of the relationship between information technology and school culture, pointing out the beneficial aspects of this relationship, as well as the challenges associated with it. The conclusions of the work aim to contribute to a better understanding and effective use of technology in the educational sphere, encouraging further research and discussion in this dynamically evolving field.

**Keywords:** information technology, school culture, teacher subculture, student subculture, school directors' subculture