The Transformation of the World of Work in the Digital Era: Towards New Organizational Models

NOUI Rabah^{*1}, CHAOUCH Katia² ¹ Department of Sociology, University of Bejaia (Algeria) Rabah.noui@univ-bejaia.dz ² Department of Sociology, University of Bejaia (Algeria) katiachaouch666@gmail.com

Received: 15/02/2025 Accepted: 08/05/2025 Published: 01/06/2025

Abstract:

The transformation of the world of work in the digital era is disrupting organizational methods, professional practices, and jobs. While it promotes the emergence of new opportunities and job creation, it also generates significant challenges for workers and companies, necessitating constant adaptation to new technological demands.

To explore this topic, we adopted a quantitative approach, data collection relied on a documentary study for the general context and a questionnaire aimed at analyzing perceptions and the concrete impacts of digital transition.

The results from our survey provided precise answers to our research problem, thereby confirming the profound transformations induced by digital technology in the world of work. They also reveal a progressively positive trend toward the adoption and mobilization of digital technologies in the workplace.

Keywords: Digital Transformation, Organizational Models, Innovation, Perception

 $Corresponding\ author: NOUI\ Rabah,\ e-mail:\ Rabah.noui@univ-bejaia.dz$

- INTRODUCTION

Stating that digital technology is at the heart of transformations in the workplace has become increasingly evident, as more individuals work through these technologies (the internet, email, collaborative tools, or management software). Analyzing their usage seems necessary, as these technologies can contribute to a profound change in the nature of work.

The arrival of digital technology in the workplace leads to changes that disrupt both companies and workers, affecting organization, collaboration methods, and working conditions. Workers can now work remotely from anywhere in the world, meaning they are no longer required to go to a physical office to perform their tasks. They can work from home, a café, or even the beach! Teams have also become more dispersed, with workers often collaborating from different locations around the globe. This transformation has created new challenges, such as the need to maintain clear and constant communication at a distance, but it has also opened up new opportunities for both workers and companies.

1. Context and Problem Statement:

The relationship to work has evolved with a changing work environment brought about by the digital revolution. This upheaval, driven by the rise of digital technologies such as computing, the development of the internet, and technologies 4.0 and 5.0, is transforming societies, enhancing daily life, and revolutionizing how we live and, most importantly, how we work¹. The interaction between workers and the internal processes of an organization has been elevated to a new level; work and its management have become not only faster and more fluid but also more responsible and collaborative.

The current work environment has also disrupted our time in the office, our behaviors, activities, and practices, thanks to the many new professional tools available. Time management has been optimized, and the efforts dedicated to daily tasks have, in most cases, been alleviated.

Technological advances, globalization, and evolving lifestyles have led to significant changes in how people work. This transformation has important implications for workers, companies, and society as a whole. In this context, it is essential to understand current trends and the potential impacts of this transformation in order to adapt and thrive in this new world of work.

Like many other countries, Algeria has experienced a significant disruption in work due to digital transformation, bringing notable changes ranging from perceptions of work and attitudes toward it to modifications in tasks and organizational behavior. From this point, this paper aims to explore the major transformations induced by digital technology in the industrial world of work. Two secondary questions underpin this inquiry:

What is the effect of digital innovation on changes in organizational models at work?

How do various stakeholders react to this new transformation? Two hypotheses are proposed to provisionally address these questions:

Despite some resistance to change and implementation difficulties, digital transformations in the world of work are perceived positively by workers.

Digital technology fosters new forms of work organization that trend toward increased remote collaboration.

2. Research Objectives:

In this research, we will demonstrate how digital technology has changed the world of work.

We will explore how digitization paves the way for new forms of work organization and how it contributes to changing professional profiles.

We will also examine the implications of digitization on the world of work.

We aim to discover the importance of digitization in the workplace.

3. Theoretical Underpinning:

Several key polysemous concepts underpin this reflection on the world of work, necessitating conceptual clarification to define and contextualize them:

3.1. Digitization:

In a strict sense, digitization can be defined as the process of transforming information of any kind into a binary code intended to be processed by a digital system or equipment. In a broader sense, as used in this study, it refers to the services and objects resulting from this technical process². According to ODEC, digitization has had a considerable impact on the world of work; it reduces repetitive tasks and creates new, more interesting ones, leads to the gradual disappearance of many low-skilled jobs, and gives rise to new positions requiring specific skills, increasing time pressure at work.

3.2. Digital Transformation: What Are We Talking About?

It is a challenging task to propose a universal and general definition of the term digital transformation. CHAINTREILL defines it as the alignment of long-term strategy with short-term operations within a company to integrate new economic models, digital tools, and practices in order to better interact with clients and employees across all touchpoints in their life cycles³. According to HINCHCLIFFE, digital transformation can be described as the fluid transition from one method of working to an entirely new one, replacing entities within the company and modes of operation to achieve much greater value than was possible with a traditional, low-scale, and low-leverage business⁴. To simplify this concept, researchers from Capgemini in collaboration with MIT define digital transformation as the use of technology to radically improve the performance or reach of businesses.

4. Indicators of Digital Transformation:

A study conducted by BCG⁵ (the Boston Consulting Group) experts examining the driving forces behind digital transformation affecting

companies and their economic environment has identified five major criteria for the digitization of a sector:

4.1. Technological Advances:

Technological advances have led to varying degrees of adoption of digital tools between new entrants and established players. Innovation has given rise to new modes of production and management methods.⁶

4.2. The Data Revolution:

The data revolution represents a second disruptive reason, characterized by the growth of exchanged volumes without prior conditions, though the degree of capture by companies is not always uniform. New business models are emerging, fueled by data to enhance their competitiveness⁷. Thanks to the internet and technology, the flow of data now transcends the constraints of time and space. Information has become ubiquitous.

4.3. New Business Models:

The business model refers to the economic model of an activity or company, which precisely describes the positioning of the company, the objectives of the activity, the means and resources implemented to achieve them, as well as the rules, operating principles, and values of the company in question.⁸

4.4. Changes in Consumer Behavior:

This constitutes the most important factor, as the customer is at the heart of the organization's strategy. Today, the customer is the primary and most affected party by the digital revolution, and thus the organization must accompany this change and choose the most appropriate means as recommended by its demanding clientele.

4.5. Legal and Regulatory Aspects:

This aspect also affects the economic models in place according to sectors: barriers to entry, licensing costs, regulation of production and distribution modes of products, as well as their delivery⁹, etc.

5. Components of Digital Transformation:

According to WIERSCH and AUTISSIER, the digital transformation of a company manifests as a triple combination: portability, dematerialization, and automation; each family of effects interacts with the others and reinforces this interaction in a reciprocal manner between concepts¹⁰.

5.1. Portability:

Digital technology encompasses a range of mobile applications, referred to as "portable." These mobile applications are developed using languages that allow their portability across various devices, such as desktop or laptop computers, tablets, and smartphones. "Client-server" applications that require a fixed computer for use are being replaced by applications accessible via a web browser or on a server with web connectivity. Applications (commercial, entry management, or document sharing) are also accessible on portable devices, allowing for greater freedom of action, which was impossible with fixed computers.

5.2. Dematerialization:

With a transactional and informational objective, digital applications dematerialize all or part of a process without human intervention and without any printable document, such as new communication channels that replace and transform physical agency, counter, and store networks, as well as information systems for managing large databases that replace paperwork in modern enterprises. Digitization also allows for the storage of entered and processed information in databases according to the nature of operations. It is also possible to dematerialize processes concerning the client (as a requester), whereby the client inputs their information regarding choices and requests with a simple click from the websites or applications provided by the organization.

5.3. Automation:

Automation can be defined as "the use of equipment to reduce the amount of human labor per unit of product."¹¹ IT applications enable transcription (for example, booking a vehicle with the memorization of data and processes performed). This memorization can trigger other dependent actions automatically. For instance, Uber is an application that directly connects the client to the service, allowing for the automatic presentation of payment receipts and the maintenance of a history of transactions. Actions follow from management rules derived from observing practices without human intervention. This automation ensures rapid execution of the various stages of a process.

5.4. Disintermediation/Re-intermediation:

GOSSANT and AUTISSIER have added another element, which is disintermediation/re-intermediation, concerning the effects of reorganization of value chains with the emergence of new actors that intervene between traditional companies and their clients, necessitating a reinvention of business and intermediation models based on the new roles played by individuals and new assets derived from data.



Fig. 1: The Stages of Digital Transformation

Source: Created from the survey results

6. Research Methods and Techniques:

We opted for a quantitative method aimed primarily at measuring the phenomenon under study. This approach helps us determine and sociologically analyze the transformation of the world of work in the digital era. As noted by MAURICE Angers, "quantitative methods aim primarily to measure the phenomenon being studied. Measurements can be ordinal, such as 'greater than or less than,' or numerical with the use of calculations"¹².

6.1. Techniques Used:

To gather maximum information on the subject studied, we utilized the following techniques:

6.1.1. Observation:

This involves paying attention to and focusing one's senses on a phenomenon or group of phenomena to discover their qualities and characteristics, ultimately acquiring new knowledge. In our research, we employed indirect observation, which consisted of observing our population during the execution of their work.

6.1.2. The Questionnaire:

The questionnaire is a means of communicating with informants by questioning them one by one in an identical manner to extract responses that reflect trends from a large population¹³. The choice of technique depends on the method used. During the observation period, we found that the most appropriate technique for quantitative study is the questionnaire, as the conditions for applying this technique are present in our research.

We developed a questionnaire on the digital transformation of the world of work, which contains two main axes:

- Axis 01: Digital transformation in the company (5 questions focused on digital transformation).
- Axis 02: The impact of digital tools at work (5 questions focused on digital tools).

The survey questionnaire was distributed to senior executives of the two industrial companies, Groupe GEMA and CEVITAL, and a valid number of 70 questionnaires was collected. The choice of our sample is linked to the object of study as well as to the variables of our hypotheses.

7. Analysis of Key Research Findings:

7.1. Profiles of Respondents:

Frequency	Percentage	Valid Percentage	Cumulative Percentage
Valid	Male	40	57.1%
	Female	30	42.9%
Total		70	100%

Tab. 01: Distribution of Respondents by Gender

Source: Created from the survey results

We observe from this graph that the male demographic is represented at a rate of 57.1%, compared to 42.9% for females. We can conclude that men are the majority within the companies GEMA and CEVITAL.

		Frequency	Percentag e	Valid Percentage	Cumulative Percentage
Valid	- 20 years	2	2,9	2,9	2,9
	20-30 years	15	21,4	21,4	24,3
	31-40 years	30	42,9	42,9	67,1
	+ 40 years	23	32,9	32,9	100,0
	Total	70	100,0	100,0	

Tab. 02: Distribution of Respondents by Age

Source: Created from the survey results

According to the data presented in this graph, the highest age category is [31-40 years], with a rate of 42.9%, followed by the category of those over 40 years old, with a rate of 32.9%. Next is the medium category of [20-30 years], represented by a percentage of 21.4%, and finally, the smallest category is those under 20 years, with a rate of 2.9%.

We found that the majority of these employees are between [31 and 40 years old], which allows the company to rely on their skills, dynamism, and especially their experience in the workplace. This experience plays an important role in the development of both companies and in facing upcoming challenges.

Semonly							
		Frequency	Percentage	Valid Percentage	Cumulative Percentage		
Valid	-2 Years	7	10,0	10,0	10,0		
	2-5 Years	14	20,0	20,0	30,0		
	6-8 Years	17	24,3	24,3	54,3		
	+8 Years	32	45,7	45,7	100,0		
	Total	70	100,0	100,0			

Tab.03: The distribution of the study population by professional seniority

Source: Created from the survey results

The data from this graph indicates that 45% of respondents have more than 8 years of seniority, 24.3% have a seniority of [6-8 years], 20% have a seniority of [2-5 years], and only 10% have less than 2 years of experience or seniority.

7.2. Attitudes of Senior Executives Towards the Digitization of Work:

Through our survey, we questioned various executives from the two companies about their attitudes and perceptions regarding the transformation that the tasks they perform are undergoing.

		Frequency	Percentage	Valid Percentage	Cumulative Percentage
Valid	Facilitate work	15	21,4	21,4	21,4
	Speed	36	51,4	51,4	72,9
	Collaborative work	19	27,1	27,1	100,0
	Total	70	100,0	100,0	

Tab.04: The influence of digital technology on work

Source: Created from the survey results

Digital technology influences work in terms of speed, which is the most selected proposition by our respondents, at a rate of 51.4%. This is significantly higher than other factors. In addition to speed, digital

tools also enhance collaborative work, which ranked second with 27.1%. Furthermore, the ease of work was marked at 21.4%.

From this analysis, we conclude that digital technology impacts the workers of GEMA and CEVITAL by improving work speed, facilitating collaboration, and enhancing ease of work.

		Frequency	Percentage	Valid Percentage	Cumulative Percentage
Valid	Yes	28	40,0	40,0	40,0
	No	42	60,0	60,0	100,0
	Total	70	100,0	100,0	

Tab. 05: The Use of Remote Work

Source: Created from the survey results

Our field survey reveals that 60% of respondents do not use remote work, compared to 40% who do. We conclude that remote work is less utilized in our companies, as the majority of responses indicated "no." Remote work may be less prevalent in certain companies due to the nature of their work or corporate culture. However, this trend signals an emerging transformation that could gain momentum in the coming years.

According to our study, we found that digital technology has facilitated the development of remote work, offering numerous advantages for both employees and companies. Remote work tools such as online collaboration platforms, video conferencing tools, and project management software enable employees to work from anywhere, providing greater flexibility and freedom. The benefits for companies are also significant, including reduced overhead costs and an increased ability to attract and retain talented employees. Remote work is becoming increasingly popular due to the advantages it offers.

		Frequency	Percentage	Valid Percentage	Cumulative Percentage
	Major change	48	68,6	68,6	68,6
Valid	Minor change	22	31,4	31,4	100,0
valld	Total	70	100,0	100,0	

Tab.06: Employee opinions regarding implemented changes

Source: Created from the survey results

We attempted to measure the impact of digital tools for work and communication that can change company activities. These tools were identified as causing a major change, as indicated by 68.6% of respondents, while some noted a minor change, represented by 31.4%.

Based on the data related to this table, we deduce that the majority of our respondents admitted that with the integration and use of new technologies and digital tools, work has experienced a major change in its functioning and organization within a company.

		Frequenc y	Percentage	Valid Percentage	Cumulative Percentage		
	Direction	27	38,6	38,6	38,6		
Valid	Human Resources Department	21	30,0	30,0	68,6		
	Finance and Accounting Department	10	14,3	14,3	82,9		
	Procurement Department	12	17,1	17,1	100,0		
	Total	70	100,0	100,0			

Tab.07: Services affected by the introduction of new technologies

Source: Created from the survey results

In our case studies (GEMA and CEVITAL), the new work methods have affected certain departments. They are heavily used in management, with a rate of 38.6%, while other departments have also adopted these new methods, such as the personnel and human resources department at 30%, the procurement department at 17.1%, and the finance and accounting department at 14.3%.

From our survey conducted in the two companies, CEVITAL and GEMA, administrative services are increasingly using digital technologies to simplify processes and improve efficiency. Online forms, electronic signatures, and data storage systems are some examples of technology being used in administrative services.

				Valid	Cumulative
		Frequency	Percentage	Percentage	Percentage
Valid	Moderately	12	17,1	17,1	17,1
v and	A lot	28	40,0	40,0	57,1
	Extremely	30	42,9	42,9	100,0
	Total	70	100,0	100,0	

 Tab. 08: digital technologies and the increase in flexibility within the company in terms of work location and schedule

Source: Created from the survey results

According to the survey results, 42.9% of our respondents indicated that digital technology increases work schedule flexibility, which is extremely beneficial for the company, while 40% confirmed a significant increase in schedule flexibility. This is followed by 17.1% who noted a moderate increase in work schedule flexibility.

From our survey, digitization is perceived as an opportunity and an advantage within GEMA and CEVITAL¹⁴. Digital technologies have greatly enhanced flexibility regarding both the location and timing of work in these companies. Remote work tools such as online collaboration platforms, video conferencing tools, and project management software enable employees to work from anywhere and at any time. This increased flexibility can be beneficial for employees with family obligations or time constraints and can also help companies attract and retain talented employees. In summary, digital technologies have broken traditional constraints related to work location and hours, offering more flexibility for both employees and

companies.

Tab.09: digital technologies and the improvement of communication and
collaboration among team members

		Frequency	Percentage	Valid Percentage	Cumulative Percentage
Valid	Moderately	10	14,3	14,3	14,3
	A lot	45	64,3	64,3	78,6
	Extremely	15	21,4	21,4	100,0
	Total	70	100,0	100,0	

Source: Created from the survey results

In this table, we can see that 64.3% of our respondents confirm that digital technology improves communication and collaboration among them. Among these, 21.4% see it as extremely beneficial, while 14.3% have noticed the positive effect of digital technology on improving communication and collaboration among employees.

Our survey showed that digital technologies have significantly enhanced communication and collaboration among team members. Instant messaging tools, online collaboration platforms, and enterprise social networks allow team members to communicate in real-time and work together on projects, regardless of their location. Video conferencing tools also facilitate remote meetings, making collaboration easier for team members situated in different places. Overall, digital technologies have eliminated communication and collaboration barriers among team members, greatly improving the efficiency and productivity of companies.

		Frequency	Percentage	Valid Percentage	Cumulative Percentage
Valid	Moderately	17	24,3	24,3	24,3
	A lot	45	64,3	64,3	88,6
	Extremely	8	11,4	11,4	100,0
	Total	70	100,0	100,0	

Tab. 10: The impact of digital tasks on the reorganization of business

Source: Created from the survey results

From this table, we observe that 64.3% of our respondents acknowledged that the impact of digital tasks during work greatly helps them reorganize the functions of the company. Additionally, 24.3% stated that the contribution of digital technologies is moderate, while the remaining 11.4% reported that the reorganization is extremely effective.

From the conducted survey, we find that digital technologies have a considerable impact on reorganizing company functions. They enable better management of tasks and resources, as well as faster and more effective communication between various departments. Digital tools also facilitate the collection and analysis of important data for decision-making. In summary, digital technologies have become essential for managing modern businesses.

Tab. 11: The evaluation of technologies and digital tools on the increase in equity and speed of the company in terms of responding to changes in the market and the environment.

		Frequency	Percentage	Valid Percentage	Cumulative Percentage
Valid	Moderately	15	21,4	21,4	21,4
	A lot	39	55,7	55,7	77,1
	Extremely	16	22,9	22,9	100,0
	Total	70	100,0	100,0	

Source: Created from the survey results

According to the data collected from our sample, 55.7% of our respondents selected "a lot," indicating that the use of digital technology increases and contributes to the company's agility and speed in responding to market and environmental changes. Meanwhile, 22.9% selected "extremely," and a minority of 21.4% chose "moderately."

From this latest analysis, we conclude that the use of digital technologies enhances and contributes to the company's agility and speed in adapting to market and environmental changes, as reported by the majority of our respondents, who indicated that it positively influences the efficient functioning of work within the company.

After this analysis, we found that the companies (GEMA and CEVITAL) adopt and prefer digitized methods. According to respondents, digitization is a process that replaces traditional work methods with digital technologies, providing numerous new ways to perform their tasks. Digitized work methods offer many advantages over traditional methods, including speed, accuracy, and ease of use. They also allow easy access to important information and data from any location, which can enhance efficiency and productivity.

CONCLUSION

The analysis of the results highlights a generally positive perception among workers regarding the digital transformations in the world of work. Nearly all respondents have successfully integrated digital tools without difficulty, emphasizing the advantages they offer, such as task automation, easier collaboration, and access to more effective tools.

Moreover, a large majority considers digital work as a source of motivation, underscoring its positive impact on professional and personal engagement. Additionally, a marked preference for digitized work methods emerges from the responses collected, attributed to the gains in speed, accuracy, and efficiency they provide.

Thus, these elements confirm that workers are favorably adopting the digital transition in their professional environment. We have demonstrated that digital technology influences the organization of work, work forms, jobs, and skills, transforming workers' behaviors, activities, and practices.

Furthermore, we found that digital technologies impact the training and development of workers' skills, as well as their well-being at work. Indeed, workers need to develop new skills to adapt to new technologies and remain competitive in the labor market. We also observed that remote work is becoming increasingly common, necessitating an adaptation of human resource management practices.

Therefore, we can say that this topic has been an ongoing trend for several years, and no company can escape this trend that requires adaptation. Mastery of digital tools continues to contribute to changes in work processes and the distribution of responsibilities across departments and management. This is why companies must be prepared to consider the changes to which they are exposed.

- End notes:

- ¹ Étievant, G. (2017). *Les impacts du numérique sur l'organisation du travail et les conditions de travail*. Paris : DARES. https://dares.travail-emploi.gouv.fr/publication/les-impacts-du-numerique-sur-l-organisation-du-travail-et-les-conditions-de-travail
- ² Latreille, A. (2017). Numérisation. *LEX Electronica*, 22(2). Consulté le 4 février 2023, sur https://www.lex-electronica.org/articles/numerisation/

³ Chaintreuil, J.-N. (2016). Un manuel pour la transformation numérique de l'entreprise. *Le Monde*. https://www.lemonde.fr/economie/article/2016/01/18/un-manuel-pour-latransformation-numerique-de-l-entreprise_4859362_3234.html

- ⁴ Hinchcliffe, D. (2022, 28 juillet). Transformation numérique. *The Rolling Notes*. Consulté le 4 février 2023, sur https://www.therollingnotes.com/2022/07/28/transformation-numerique/
- ⁵ Deimler, M. S., Lesser, E., Ransbotham, S., & Reeves, M. (2015). *The Industries of the Future: The Digital Transformation of Industries.* The Boston Consulting Group (BCG).
- ⁶ Bit2Me Academy. (s.d.). *Que es la Web 5.0* ? Consulté le 14 février 2023 sur https://academy.bit2me.com/fr/que-es-la-web-5-0/.
- ⁷ Audery, R. (2021, 26 août). La transition numérique : transformation, révolution, accélération, virage technologique. Où en est-on vraiment ? Consulté le 23 février 2023 sur www.melchior.fr.
- ⁸ Matricano, D. (2020). *The business model*. In D. Matricano (Ed.), *Entrepreneurship trajectories* (pp. 61–82). Academic Press. https://doi.org/10.1016/B978-0-12-818650-3.00003-9
- ⁹ Slioui, E.-M. (2020). La condition du changement et son impact sur la transformation numérique des organisations. Communication présentée au Colloque Transformation digitale et organisations, Université de Montpellier.

- ¹⁰ Autissier, D.Moutot, J.-M., Johnson, K. et Metais-Wiersch, E. (2019). Outil 63. La transformation digitale. *La boîte à outils de la conduite du changement et de la transformation* (p. 178-179). Dunod. https://shs.cairn.info/la-boite-a-outils-de-la-conduite-du-changement--9782100776344-page-178?lang=fr.
- ¹¹ John, R. B. W. (2014, septembre). *Statistique canadienne. Revue juridique*, p. 02.
- ¹² Angers, M. (1997). Initiation pratique à la méthodologie des sciences humaines. Éditions CEC
- ¹³ Angers, M. (1997). Initiation pratique à la méthodologie des sciences humaines. Éditions CEC
- ¹⁴ Cevital. (s.d.). *Cevital agro-industrielle*. Consulté sur http://www.cevital.com.

- References :

- Audery, R. (2021). La transition numérique : transformation, révolution, accélération, virage technologique. Où en est-on vraiment? *Institut De l'entreprise*. Consulté le 23 février 2023 sur www.melchior.fr.
- Antoine , L. (2017). La numérisation . Lex Electronica, 22.
- Chaintreuil, J.-N. (13 avril 2016). Un manuel pour la transformation numérique de l'entreprise. Consulté le 06 février 2025 sur : https://www.lemonde.fr/
- Slioui, E.-M. (2020). La conduite du changement et son impact sur la transformation numérique des organisations [Mémoire de maîtrise, Université du Québec à Trois-Rivières]. Dépôt institutionnel UQTR. (Thèse de maîtrise, Université du Québec à Trois-Rivières).
- Consulté sur : https://depote.uqtr.ca/id/eprint/9543/​:contentReference[oaicite:3]{index=3}
- Hinchcliffe, D. (2022). Transformation numérique : Le point de vue des DSI. The Rolling Notes. website: https://www.therollingnotes.com/2022/07/28/transformation-numerique-dsi/
- John, R. B. W. . (2014). Statistique canadienne . Revue Juridique, 1.
- Gaujard, C. (2008). L'idéal-type de la start-up : Une synthèse de l'organisation du travail et de l'emploi dans un contexte de ruptures. Consulté sur : Université du Littoral Côte d'Opale, Laboratoire de Recherche sur l'Industrie et l'Innovation. website: https://riifr.univ-littoral.fr/wpcontent/uploads/2008/04/doc-

178.pdf​:contentReference[oaicite:5]{index=5}

- Sperandio, J. (2000). Les NTIC : Impacts ergonomiques chez l'utilisateur, implications pour l'ergonomie. فَدَم في La SLEF-Séances plénières.