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Digital management and interprofessional communication in collaborative work environments: a field study in Djelfa

ABSTRACT

Digital transformation has brought profound changes to organizational structures and to the dynamics of interprofessional communication. In this context, digital management has become a key element for improving coordination, information exchange, and team performance, particularly in cultural organizations. This study aimed to analyze the impact of digital management on interprofessional communication and its influence on the effectiveness of collective performance at the Main Public Reading Library of Djelfa Province. The research adopted a descriptive-analytical approach and used a questionnaire as the main data collection instrument. The sample consisted of 72 employees selected through purposive sampling, considering their direct involvement in digital communication processes and teamwork. Descriptive statistical techniques and Pearson's correlation coefficient were employed for data analysis. The results indicate a clear adoption of digital management, an adequate level of interprofessional communication, and a positive relationship between communication and team performance, although challenges related to digital skills gaps and interaction styles persist. It is concluded that digital management contributes to strengthening interprofessional communication and improving collective performance, provided it is accompanied by continuous training strategies and organizational support.

Keywords: Digital management, interprofessional communication, team performance, digital transformation.

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Gestión digital y comunicación interprofesional en entornos laborales colaborativos: estudio de campo en Djelfa

RESUMEN

La transformación digital ha generado cambios profundos en las estructuras organizacionales y en las dinámicas de la comunicación interprofesional. En este contexto, la gestión digital se ha convertido en un elemento clave para mejorar la coordinación, el intercambio de información y el desempeño de los equipos de trabajo, especialmente en organizaciones de carácter cultural. El presente estudio tuvo como objetivo analizar el impacto de la gestión digital en la comunicación interprofesional y su influencia en la eficacia del desempeño colectivo en la Biblioteca Pública Principal de la Provincia de Djelfa. La investigación adoptó un enfoque descriptivo-analítico y utilizó el cuestionario como instrumento principal para la recolección de datos. La muestra estuvo conformada por 72 empleados seleccionados mediante muestreo intencional, considerando su participación

directa en los procesos de comunicación digital y trabajo en equipo. Para el análisis de los datos se emplearon técnicas estadísticas descriptivas y el coeficiente de correlación de Pearson. Los resultados muestran una adopción clara de la gestión digital, un nivel adecuado de comunicación interprofesional y una relación positiva entre esta y el desempeño de los equipos, aunque persisten desafíos vinculados a las brechas de competencias digitales y a los estilos de interacción profesional. Se concluye que la gestión digital contribuye al fortalecimiento de la comunicación interprofesional y al mejoramiento del desempeño colectivo, siempre que vaya acompañada de estrategias de formación continua y apoyo organizacional.

Palabras clave: Gestión digital, comunicación interprofesional, desempeño de equipos, transformación digital.

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Gestão digital e comunicação interprofissional em ambientes de trabalho colaborativos: um estudo de campo em Djelfa

RESUMO

A transformação digital tem gerado mudanças profundas nas estruturas organizacionais e nas dinâmicas da comunicação interprofissional. Nesse contexto, a gestão digital tornou-se um elemento-chave para melhorar a coordenação, a troca de informações e o desempenho das equipes de trabalho, especialmente em organizações de caráter cultural. O presente estudo teve como objetivo analisar o impacto da gestão digital na comunicação interprofissional e sua influência na eficácia do desempenho coletivo na Biblioteca Pública Principal da Província de Djelfa. A pesquisa adotou uma abordagem descritivo-analítica e utilizou o questionário como principal instrumento de coleta de dados. A amostra foi composta por 72 funcionários selecionados por amostragem intencional, considerando sua participação direta nos processos de comunicação digital e no trabalho em equipe. Para a análise dos dados, foram empregadas técnicas estatísticas descritivas e o coeficiente de correlação de Pearson. Os resultados indicam uma adoção clara da gestão digital, um nível adequado de comunicação interprofissional e uma relação positiva entre essa comunicação e o desempenho das equipes, embora persistam desafios relacionados às lacunas de competências digitais e aos estilos de interação profissional. Conclui-se que a gestão digital contribui para o fortalecimento da comunicação interprofissional e para a melhoria do desempenho coletivo, desde que seja acompanhada por estratégias de formação contínua e apoio organizacional.

Palavras-chave: Gestão digital, comunicação interprofissional, desempenho de equipes, transformação digital.

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INTRODUCTION

Amid the dynamic transformations imposed by digitization on organizational structures and work patterns within institutions, interprofessional communication has evolved beyond a traditional exchange activity into a strategic function that intersects with concepts such as participative leadership, knowledge management, and the development of high-performing teams (Reuschl et al., 2022; Kaganer et al., 2023). Contemporary institutions—particularly those in the cultural and service sectors—increasingly rely on digitally supported communication systems to ensure the smooth flow of information, coordinate efforts, and foster team performance in complex and rapidly changing environments (Witschel et al., 2019; Soomro & Khan, 2025).

The transition toward digital management stands as one of the most significant shifts reshaping institutional structures, introducing fundamental changes in organizational hierarchies, modes of interaction, and decision-making processes (Omol, 2024; Trieu et al., 2024). Within this context, interprofessional communication skills emerge as a critical factor

directly influencing the effectiveness of team performance—especially in light of challenges related to digital competency gaps, disparities in communication abilities, and difficulties adapting to digital environments characterized by asynchronous interactions and smart platforms.

This study arises from the urgent need to understand the dynamics of interprofessional communication within the framework of digital management, by analyzing the extent to which employees possess these skills and how they impact team performance in a service-oriented cultural institution—represented by the Main Public Reading Library in Djelfa Province—as a telling model of digital transformation in the public sphere.

Methodological Framework of the Study

Problem Statement

In the context of the profound structural transformations experienced by modern organizations, digitization has introduced a new managerial paradigm that reshapes organizational relationships and redefines patterns of interaction within the workplace. Digital management is no longer merely a matter of technological updating; it has evolved into a comprehensive system that reconfigures traditional notions of communication, leadership, role distribution, and coordination mechanisms among professional teams.

Within this framework, interprofessional communication emerges as an effective organizational tool for building social capital, fostering collaboration, facilitating knowledge transfer, and strengthening functional cohesion. However, the transition toward a fully digital environment disrupts traditional patterns of interpersonal interaction and introduces challenges related to skill gaps, disparities in digital competencies, and the emergence of new forms of “communicative asynchrony”—all of which may directly impact the quality of institutional coordination and the effectiveness of team performance.

Given the nature of libraries as knowledge institutions open to change, and their critical role in re-engineering the relationship between individuals and information, the Main Public Reading Library in Djelfa Province represents an exemplary environment for examining how digital management affects the dynamics of interprofessional communication. It raises the question of whether such transformation serves as a catalyst for development or a barrier to functional cohesion. Hence, the central research problem is posed as follows:

What are the key transformations that have affected interprofessional communication under digital management, and how do these transformations impact the effectiveness of team performance at the Main Public Reading Library in Djelfa Province?

From this central question, the following sub-questions arise:

What are the manifestations of digital management in the library under study?

What is the level of interprofessional communication skills among employees?

What is the relationship between interprofessional communication and team performance effectiveness?

What challenges face interprofessional communication under digital management?

Research Hypotheses

Clear manifestations of digital management are evident in the library under study, reflected in its organizational structure and work methods.

Employees possess varying levels of interprofessional communication skills influenced by the nature of digital transformation.

There is a statistically significant relationship between the level of interprofessional communication and the effectiveness of team performance.

Interprofessional communication faces several challenges under digital management, most notably skill gaps and variations in interaction patterns.

Research Objectives

To identify the manifestations of digital management at the Main Public Reading Library.

To assess the level of interprofessional communication skills among the staff.

To analyze the nature of the relationship between interprofessional communication and team performance effectiveness.

To explore the challenges hindering effective communication in a digital work environment.

Significance of the Study

The significance of this study lies in its focus on one of the key organizational issues facing institutions in the digital transformation era—interprofessional communication—which encompasses communicative and organizational dimensions that directly impact performance. Furthermore, the study offers an analytical approach that integrates concepts from digital management and organizational sociology, making it a valuable reference for understanding the evolving nature of communication within service-oriented institutions.

Key Concepts of the Study

Interprofessional Communication

Linguistic Definition: The term "communication" derives from the verb to connect, meaning to reach or convey something. In language, it refers to the exchange of messages, information, or emotions between two or more parties.

Theoretical Definition of Interprofessional Communication

According to Adel Abdallah, interprofessional communication is defined as "*the process of exchanging messages and information among employees within an institution in a way that serves work objectives and ensures coordination and integration of functional roles*" (Abdallah, 2015, p. 112). This definition emphasizes the instrumental and organizational dimensions of communication, highlighting its role in aligning individual tasks with collective goals and in fostering functional integration within institutional structures.

From a broader perspective, interprofessional communication extends beyond the mere transmission of information to encompass a dynamic process of interaction that facilitates collaboration, mutual understanding, and shared decision-making among professionals from different functional backgrounds. In this sense, communication operates as a strategic organizational mechanism that supports teamwork, enhances operational efficiency, and contributes to the achievement of institutional objectives.

Nordin et al. (2014); Baker (2002) reinforce this view by conceptualizing interprofessional communication as a core competency in collaborative work environments, particularly in organizations undergoing digital transformation. They argue that effective communication among professionals enhances trust, reduces role ambiguity, and strengthens coordination, which are essential factors for successful teamwork and organizational performance (Goldhaber et al., 1978). Their work highlights the importance of structured communication practices and shared communicative norms in sustaining productive professional relationships.

Similarly, Wehmeier (2008) situates interprofessional communication within the broader framework of organizational communication, emphasizing its function in integrating diverse professional roles and perspectives. According to Wehmeier, communication serves as a linking process that connects organizational actors, facilitates knowledge exchange, and enables coordinated action across institutional units (Spaho, 2013; Christensen & Cornelissen, 2013). This perspective underscores the role of communication as a foundational element in organizational cohesion and adaptability.

Taken together, these theoretical contributions suggest that interprofessional communication is a multidimensional process that combines informational, relational, and

functional aspects. It plays a critical role in ensuring coordination, enhancing collaboration, and supporting organizational effectiveness, particularly in complex and digitally mediated work environments.

Commentary: Interprofessional communication is not merely about information transmission; it constitutes a network of social and cognitive interactions that affect the quality of organizational performance and foster trust within work teams.

Operational Definition: In this study, interprofessional communication refers to the staff's ability to exchange information and coordinate tasks using both digital and non-digital means, thereby contributing to collective effectiveness within a digital organizational environment.

Digital Management

Linguistic Definition: The term "management" stems from to manage, meaning to organize or direct, while "digital" relates to the use of numbers, and by extension, digital technology in functional performance.

Theoretical Definition: Abdelkader Fares defines digital management as "*a managerial model that uses information and communication technologies to enhance institutional performance, transparency, and efficiency*" (Fares, 2020, p. 77). This conceptualization is further supported by Serna Gómez et al. (2021), who argue that digital management enables organizations to optimize decision-making processes, improve information flow, and strengthen organizational agility through the strategic use of digital platforms and data-driven tools. Similarly, Babalola and Genga (2024) emphasize that digital management plays a critical role in enhancing institutional effectiveness by fostering innovation, accountability, and adaptive capacity in rapidly changing work environments. Together, these perspectives highlight digital management as a comprehensive organizational approach that goes beyond technological adoption to include structural, cultural, and strategic transformation.

Commentary: Digital management is not merely the adoption of technological tools; it represents a paradigm shift in managerial thinking, grounded in transparency, flexibility, and participatory decision-making.

Operational Definition: In this study, digital management refers to the extent to which the library employs digital systems and software to manage organizational processes, provide services, and facilitate internal interaction among employees.

Team Performance

Linguistic Definition: The term "performance" is derived from to perform, meaning to accomplish or carry out, while "team" relates to a group of individuals working together within a shared framework.

Theoretical Definition: Ahmed Zaki defines team performance as "*the extent to which a work team as a whole completes tasks according to standards of efficiency and quality within a defined timeframe*" (Zaki, 2016, p. 64). This definition aligns with Delisle's (2007) perspective, which emphasizes that effective team performance depends on coordination, role clarity, and shared responsibility among team members. Likewise, Spreitzer, Cohen, and Ledford Jr. (1999) highlight that high-performing teams are characterized by empowerment, mutual accountability, and collaborative decision-making, all of which enhance productivity and overall effectiveness. Together, these viewpoints underscore team performance as a collective outcome shaped by organizational structure, interpersonal dynamics, and shared commitment to common goals.

Commentary: Team performance is a direct reflection of the level of harmony and coordination among team members and is influenced by leadership style, communication mechanisms, organizational culture, and collaborative skill levels.

Operational Definition: In this study, team performance refers to the overall level of accomplishment achieved by work teams within the library as a result of their communicative

interactions and collective organization in a digitally driven work environment.

Methodological Procedures of the Study

Research Method

Descriptive Method

The descriptive method was selected as it is the most appropriate approach to understanding the internal dynamics of the institution without interfering in its actual practices. It allows for an objective analysis of professional interactions within the context of digitalization.

Theoretical Definition: The descriptive method is one of the scientific approaches aimed at studying phenomena as they exist in reality without altering them. It relies on the precise collection and systematic analysis of data to understand the nature of relationships between variables (Al-Qasimi, 2010, p. 115).

Commentary: The descriptive method is one of the most widely used approaches in field and social research. It enables the researcher to analyze phenomena within their natural context and to understand their organizational and sociological dimensions.

Operational Definition: In this study, the descriptive method involves analyzing the features of interprofessional communication within the context of digital management at the Main Public Reading Library in Djelfa. It is based on describing the organizational reality and measuring its impact on team performance.

Data Collection Tool

Questionnaire

The questionnaire was chosen for its ability to cover a wide sample and for providing quantifiable data suitable for statistical analysis, reflecting the general tendencies of the respondents.

Theoretical Definition: The questionnaire is a research tool based on a set of closed or open-ended questions presented to respondents in order to collect quantitative or qualitative data on a specific topic (Khawalda, 2005, p. 142).

Commentary: The questionnaire is among the most effective tools for data collection in organizational studies, especially when analyzing the attitudes and behaviors of a large number of individuals in a unified manner.

Operational Definition: This study relied on a structured questionnaire administered to employees of the Main Public Reading Library in Djelfa, in order to measure their perception of digital management, interprofessional communication, and its influence on team performance.

Sample and Sampling Method

Purposive Sampling

Purposive sampling was deemed most suitable for this study, as its participants possess the necessary experience and practical knowledge to realistically and thoroughly analyze the phenomenon under investigation.

Theoretical Definition: Purposive sampling is a type of non-probability sampling in which participants are selected based on specific criteria related to the research objectives, such as experience or direct involvement in the phenomenon studied (Obeidat et al., 2004, p. 195).

Commentary: This type of sampling ensures the quality of data, particularly in studies targeting a specific category within a particular professional environment, thereby enhancing the credibility of the findings.

Operational Definition: A purposive sample was adopted in this study, consisting of 72 employees from the Main Public Reading Library in Djelfa, due to their direct involvement in digital communication and teamwork practices.

Presentation and Analysis of Data in Light of the Study Hypotheses

Presentation of Personal Data of the Respondents

Table 1

Presentation of Respondent Data

Personal Variables	Categories	Frequency (f)	Percentage (%)
Gender	Male	48	66.67%
	Female	24	33.33%
Age	Less than 30 years	15	20.83%
	30 to 40 years	33	45.83%
	Over 40 years	24	33.33%
Educational Level	Technical/Intermediate Degree	18	25.00%
	Bachelor's Degree	34	47.22%
	High School (third year)	20	27.78%
Professional Experience	Less than 5 years	10	13.89%
	5 to 10 years	29	40.28%
	Over 10 years	33	45.83%

The data shows that males represent the majority, with 66.67%, reflecting the male dominance in technical and administrative positions within the library. In comparison, females represent 33.33%. In terms of age groups, the majority of employees (45.83%) are between 30-40 years old, indicating a relatively young workforce that may be more open to digital transformation.

Regarding educational levels, the largest group consists of employees holding a Bachelor's degree (47.22%), followed by those with a high school diploma (27.78%). These findings suggest a good level of education that can contribute positively to the successful application of modern communication strategies.

In terms of professional experience, almost half of the sample (45.83%) has more than 10 years of experience, which provides a substantial knowledge and skill base for understanding and analyzing the impact of digital transformation on communication methods and team performance.

From an organizational sociology perspective, the distribution of personal characteristics of the sample reflects the diversity of the institution's human structure. This diversity enables the researcher to analyze professional and communication relationships within the work environment as a social system with its own rules and dynamics. The male dominance may be linked to a traditional organizational culture that affects communication and interaction styles, while the educational structure and professional experience reveal the potential for building a strong knowledge-based social capital within the institution.

According to modern functional approaches (structural functional theory), the distribution of roles based on education and experience enhances the stability of the organizational system and reflects the nature of labor division within the institution. From the human capital theory perspective, the high percentage of educated individuals indicates the availability of human resources capable of addressing the requirements of digital management and interprofessional communication challenges.

In terms of gender analysis, the low percentage of females may indicate a lack of gender-sensitive approaches in the distribution of tasks and roles within the institution, prompting a discussion on empowering women administratively in culturally semi-closed work environments. These results align with the study by "Boukharri Fatma and Maamri Mohamed" (2023) on "Participatory Leadership in Library Institutions," which found that diversity in the institution's demographic structure (age, experience, educational level)

contributes to building effective and influential communication patterns in the work environment. However, it also presents challenges related to aligning communication styles with the evolution of digital organizational structures.

Presentation of Data for the First Partial Hypothesis: There are Clear Manifestations of Digital Management in the Library Under Study, Reflected in the Organizational Structure and Work Methods

A set of items was designed to measure the clarity of digital management manifestations in the library through five items, using a five-point Likert scale (Strongly Agree, Agree, Neutral, Disagree, Strongly Disagree). The distribution of responses is as follows:

Table 2

Items to measure the clarity of the manifestations of digital management in the library

Item	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree	Total Frequency	Approval Percentage (Strongly Agree + Agree)
The library relies on digital systems for human resource management	28	22	10	8	4	72	69.4%
Internal email and digital applications are used for communication	30	26	6	6	4	72	77.8%
The library relies on electronic databases for daily management	24	28	8	7	5	72	72.2%
The organizational structure has been updated to meet digital management requirements	20	26	12	8	6	72	63.9%
Staff are regularly trained to use digital management tools	18	22	14	12	6	72	55.6%

From the table, it is clear that the majority of the sample agreed on the presence of tangible manifestations of digital management in the library, with agreement percentages ranging from 55.6% to 77.8%. This indicates a noticeable shift towards the use of digital tools for resource management, as well as for organizing communication and administrative processes. The highest approval rate was found in the item related to the use of internal email and digital applications for communication (77.8%), indicating an actual integration of digital tools into the communication structure. On the other hand, the item concerning regular staff training had the lowest approval rate (55.6%), highlighting an ongoing challenge related to continuous staff training.

From the perspective of organizational sociology and labor, these results reflect what is called "Neo-Bureaucratic Transformation," where rigid hierarchical structures are replaced by more flexible, decentralized systems through digital management tools. This is evident in the reliance on email and electronic databases as core communication channels, signaling a shift towards network-based functions instead of traditional linear functions.

The use of "digital databases" and "electronic human resource systems" also signals a move toward digital governance, which contributes to enhancing transparency and accountability within the organization. This aligns with modern concepts of digital management, such as organizational flexibility, adaptive structuring, and horizontal information flow. In contrast, the low percentage of continuous training points to a digital organizational gap, where technological infrastructure is available, but human capacity is lacking, which could affect the effectiveness of digital transformation in team-based work.

These results are consistent with new institutional theory, which asserts that organizations adopt digital technologies not only to improve efficiency but also to gain organizational legitimacy and competitive standing within their environment. This aligns with Manuel

Castells' theory of the network society, where digital tools serve to reconstruct social and administrative structures by accelerating communication and redistributing power.

A study by "Bouafia and Belkacem" (2021) on "The Impact of Digital Management on Improving Organizational Performance in Algerian University Libraries" found that the adoption of digital systems improved internal coordination and streamlined procedures. However, it also highlighted challenges related to inadequate user training.

3. Presentation of Data for the Second Partial Hypothesis: Employees Possess a Varied Level of Interprofessional Communication Skills Influenced by the Nature of Digital Transformation

We measured the interprofessional communication skills of library employees through five key indicators using a five-point Likert scale, and the distribution of responses is as follows:

Table 3

We measured the interprofessional communication skills of library employees

Item	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree	Total Frequency	Approval Percentage (Strongly Agree + Agree)
I am able to clearly convey information to my colleagues using digital tools	26	28	8	6	4	72	75.0%
I listen to my colleagues and understand their viewpoints during collaborative work	30	24	10	5	3	72	75.0%
I use electronic communication tools (email, platforms, chat, etc.) to coordinate daily work	24	26	12	6	4	72	69.4%
I face difficulties in conveying ideas due to some colleagues' weak use of digital tools	16	18	14	16	8	72	47.2% (inverse - adjusted for accurate measurement)
I feel that digital transformation has improved understanding and cohesion within the team	20	22	16	10	4	72	58.3%

The results show that employees possess a reasonably good level of interprofessional communication skills, especially in conveying information clearly (75%) and listening and interacting positively with colleagues (75%). There is also widespread use of electronic communication tools (69.4%). However, the item regarding difficulties in communication due to varying digital skills indicates a real organizational issue, as 47.2% of respondents reported this barrier, reflecting the direct impact of digital transformation on the effectiveness of interprofessional communication. The moderate approval rate for the statement "digital transformation has improved understanding and cohesion" (58.3%) suggests a clear disparity in employees' perceptions of the impact of digitization on social dynamics within the workplace.

From an organizational sociology perspective, the disparity in interprofessional communication skills can be explained through Jürgen Habermas' theory of communicative action, which emphasizes that effective communication is based on mutual recognition of competence and roles. This can be disrupted in digital work contexts due to cognitive digital disparities. The impact of "digital transformation" creates new communication patterns that rely on digital media, which require digital, supervisory, and participatory communication skills. These skills are not yet fully developed in all individuals, which explains the variation in communication performance within the team. In light of modern management concepts, this disparity is linked to the level of what is known as: interactive digital competence, organizational communicative intelligence, and participatory knowledge management.

This hypothesis aligns with the socio-technical theory, which posits that the effectiveness of

any organization depends on the interaction between two systems: the technical and the social. The lack of digital skills among some individuals directly affects communication quality and, consequently, collective efficiency. This also intersects with Edwin Hollingshead's ideas on "knowledge and skill distribution within the team," which assert that communication effectiveness depends on the balance of skills within the group, not just the competence of the individual.

A study by Salah and Msabah (2022) on "Interprofessional Communication in the Digital Workplace" indicated that Algerian institutions are experiencing gradual development in communication skills, but there is a noticeable disparity linked to years of service and adaptability to technology. Furthermore, a study by Merzouki and Leila (2020) found that inadequate digital training negatively affects colleague interactions and hinders smooth communication in digital work environments.

Presentation of Data for the Third Partial Hypothesis: There is a Statistically Significant Relationship Between Interprofessional Communication and Team Performance Effectiveness

The Pearson correlation coefficient test was used to measure the relationship between two variables:

Variable 1: Interprofessional communication level

Variable 2: Team performance effectiveness

Table 4

Variables

Variables	Correlation Coefficient (r)	Statistical Significance (Sig.)	Relationship Type	Relationship Strength
Interprofessional Communication × Team Performance	0.624	0.000	Positive Significant	Relatively Strong

Note: The significance level was considered ($\alpha \leq 0.05$).

Correlation Coefficient (r): Reflects the strength of the relationship between the variables. Since the value of 0.624 is considered relatively strong, it indicates a substantial relationship, though not perfect.

Statistical Significance (Sig.): The calculated significance indicates that the relationship between the two variables is statistically significant (Sig. = 0.000), meaning the relationship is real and not due to chance.

Interpretation of Results:

The results reveal a relatively strong positive and statistically significant relationship between interprofessional communication and team performance effectiveness, with a correlation coefficient of $r = 0.624$. This relationship is statistically significant at a significance level of Sig. = 0.000. This indicates that as the level of interprofessional communication skills among employees improves, it positively impacts team performance within the library, particularly in areas such as coordination, task quality, and the achievement of organizational goals.

Theoretical Perspective:

From an organizational sociology standpoint, this result aligns with the principles of social capital theory, where Putnam emphasizes that communication cohesion within an organization enhances trust and cooperation, which are crucial factors in the effectiveness of team performance. Additionally, the systems theory of work asserts that effective communication skills among team members are critical determinants of success in organizational systems, particularly in digital environments that require seamless information flow and quick decision-making. This highlights the importance of modern

concepts such as interactive digital coordination, participatory organizational communication, and communication empowerment.

The socio-technical approach further supports the idea that team performance is directly influenced by the effectiveness of communication channels within the organization, especially when technological media are involved. This makes digital communication competence an organizational necessity. The social exchange theory also reinforces this relationship, with Blau and Homans suggesting that the quality of communication relationships enhances the exchange of support and trust, which in turn boosts team performance.

Supporting Studies:

A study by Zitouni (2021) on Algerian administrative institutions showed that the effectiveness of interprofessional communication significantly impacts team dynamics and goal achievement.

A study by Ahmadi and Ben Issa (2022) on digital work environments in public libraries revealed that increased digital communication competence improves interaction between employees and reduces instances of administrative tension.

5/ Presentation of Data for the Fourth Partial Hypothesis: The Process of Interprofessional Communication Faces Several Challenges in the Context of Digital Management, the Most Prominent of Which Are the Skills Gap and Differences in Interaction Patterns

Table 5

Challenges of Interprofessional Communication in the Context of Digital Management

Challenges	Frequency	Percentage (%)	Likert Scale Rating	Sociological and Statistical Commentary
Skills Gap	45	62.5	4.2 (Strongly Agree)	The high percentage indicates that the majority of employees feel there is a noticeable skills gap, reflecting the significant challenge employees face in adapting to new digital skills.
Differences in Interaction Patterns	40	55.6	3.8 (Agree)	This challenge clearly shows that there are differences in how employees interact with digital tools, reflecting a challenge in coordination between teams due to the varying use of tools.
Lack of Technological Training	35	48.6	3.5 (Agree)	There is an urgent need for greater training in technological skills, which could improve interprofessional communication and reduce skill gaps.
Lack of Digital Collaboration Across Departments	30	41.7	3.2 (Neutral)	Despite digital transformation, some departments still suffer from a lack of effective digital collaboration, which affects communication between teams.
Resistance to Change from Some Employees	25	34.7	2.9 (Neutral)	This indicates that some individuals are resistant to adapting to modern digital management systems.

Skills Gap appears to be one of the biggest challenges negatively affecting the effectiveness of interprofessional communication. The high frequency and percentage show that most employees feel they are not adequately equipped to handle digital tools and techniques of digital management. As for Differences in Interaction Patterns, it is considered a secondary challenge but has a noticeable effect on the communication process, as the variation in interaction methods between individuals can complicate coordination and affect the effectiveness of teamwork. Lack of Technological Training points to the need for continuous skills updating to reduce performance gaps and increase communication effectiveness. The Lack of Digital Collaboration Across Departments shows the need to improve communication and collaboration between teams through digital tools. Resistance to Change requires special

attention from management to provide the necessary support for adapting to digital transformations.

The data shows that sociological challenges related to technology require continuous attention from library management to improve collective performance. The impact of the Skills Gap is considered one of the main causes leading to poor communication between teams, as employees rely on traditional communication skills, which hinders work effectiveness. Also, the Differences in Interaction Patterns among employees in the digital work environment reflect a disparity in the ability to use modern technologies, leading to ineffective coordination between teams.

Based on Goffman's Interactionist Theory (1959), which emphasizes how technological contexts affect social interaction patterns, it can be said that digital challenges exacerbate social isolation among employees and affect their engagement in effective social interactions. Furthermore, Dorman (2001) points out that the lack of training is one of the main factors leading to weak institutional communication.

The data underscores that sociological challenges related to technology require ongoing attention from library management to improve team performance. The impact of the skills gap is considered one of the primary causes of poor interprofessional communication, as employees tend to rely on traditional communication skills, which hinders work effectiveness. Furthermore, the differences in interaction patterns within the digital work environment reflect a disparity in employees' ability to use modern technologies, which can obstruct effective team coordination.

According to Goffman's Interactionist Theory (1959), which focuses on how technological contexts influence social interaction patterns, it can be argued that digital challenges increase social isolation among employees, thereby affecting their participation in effective social interactions. Moreover, Dorman (2001) highlights that the lack of training is a key factor that leads to weak institutional communication.

Fourth: Results in Light of the Study Hypotheses:

Results in Light of the First Partial Hypothesis:

Hypothesis: "There are clear manifestations of digital management in the library under study, which reflect on the organizational structure and work methods."

Acceptance or Rejection of the Hypothesis:

Based on the high approval rates expressed by the sample members regarding the items that measure the manifestations of digital management – which ranged from 55.6% to 77.8% – these percentages provide sufficient evidence of a noticeable shift toward digitalization in the library, especially in areas related to management, communication, and resource organization. Therefore, the first partial hypothesis is accepted, as it is supported by field data reflecting the actual presence of digital management manifestations within the studied institution.

Results in Light of the Second Partial Hypothesis:

Hypothesis: "Employees possess varying levels of interprofessional communication skills that are affected by the nature of the digital transformation."

Acceptance or Rejection of the Hypothesis:

Based on the analysis of results regarding the level of interprofessional communication skills, the findings showed that employees possess varied communication skills. These range from high levels of communication in some aspects, such as clear information delivery (75%) and good listening (75%), to medium levels in others, such as using electronic means for daily coordination (69.4%). There were also clear challenges in other areas, such as digital disparity (47.2%) and a slight improvement in understanding and harmony due to digital transformation (58.3%).

Based on these results, the second partial hypothesis can be accepted, as the findings indicate a noticeable variation in communication skills among employees under the influence of digital transformation, reflecting the impact of this phenomenon on communication between individuals.

Results in Light of the Third Partial Hypothesis:

Hypothesis: "There is a statistically significant relationship between the level of interprofessional communication and the effectiveness of collective performance."

Acceptance or Rejection of the Hypothesis:

Based on the results of the correlation test between the level of interprofessional communication and the effectiveness of collective performance, the correlation coefficient ($r = 0.624$) showed statistical significance (Sig. = 0.000). This represents a strong, positive, and significant relationship. This means that as interprofessional communication improves, it positively impacts the effectiveness of collective performance. Based on these results, the third partial hypothesis can be accepted, as there is a clear and significant relationship between effective communication within the team and collective performance.

Results in Light of the Fourth Partial Hypothesis:

Hypothesis: "The process of interprofessional communication faces several challenges under the application of digital management, the most prominent of which are the skills gap and differences in interaction patterns."

Acceptance or Rejection of the Hypothesis:

The results related to the challenges of interprofessional communication under digital management showed that the skills gap was one of the most prominent challenges (62.5% of respondents strongly agreed), while differences in interaction patterns posed another challenge (55.6%). These challenges clearly reflect the reality of digital interaction within teams. Employees also indicated a lack of technological training (48.6%) and a lack of digital collaboration between departments (41.7%).

Based on these results, the fourth partial hypothesis can be accepted, as the challenges related to digital skills and differences in interaction patterns are major obstacles that affect the effectiveness of interprofessional communication in the digital work environment.

General Study Results Based on the Partial Hypotheses:

First Partial Hypothesis:

"There are clear manifestations of digital management in the library under study, which reflect on the organizational structure and work methods."

Acceptance of the Hypothesis:

Based on the results, which showed high approval rates ranging from 55.6% to 77.8% for items that measure the manifestations of digital management, these results indicate a noticeable shift towards digitalization in the studied library. These percentages represent a gradual presence of digital management, especially in areas related to management, communication, and resource organization. Thus, the first partial hypothesis is accepted, as it is supported by field data.

Second Partial Hypothesis:

"Employees possess varying levels of interprofessional communication skills that are affected by the nature of the digital transformation."

Acceptance of the Hypothesis:

The results revealed a variation in interprofessional communication skills among employees, with some demonstrating high skills such as clear information delivery (75%) and good

listening (75%), while others showed medium skills such as using electronic tools for daily coordination (69.4%). The results also highlighted challenges related to digital disparities (47.2%) and the impact of digital transformation on understanding and harmony among individuals (58.3%). These findings suggest that digital transformation influences interprofessional communication skills, thus the second partial hypothesis is accepted.

Third Partial Hypothesis:

"There is a statistically significant relationship between the level of interprofessional communication and the effectiveness of collective performance."

Acceptance of the Hypothesis:

Results from the correlation test showed a strong and significant positive relationship between the level of interprofessional communication and the effectiveness of collective performance. The correlation coefficient ($r = 0.624$) and statistical significance (Sig. = 0.000) indicate that improving interprofessional communication contributes to enhancing collective performance. Therefore, the third partial hypothesis is accepted.

Fourth Partial Hypothesis:

"Interprofessional communication faces several challenges under the application of digital management, the most prominent of which are the skills gap and differences in interaction patterns."

Acceptance of the Hypothesis:

The results regarding the challenges of interprofessional communication in the context of digital management revealed that the skills gap was one of the most prominent challenges, with 62.5% of respondents strongly agreeing with this. Additionally, differences in interaction patterns posed another challenge (55.6%), along with a lack of technological training (48.6%) and limited digital collaboration between departments (41.7%). These challenges significantly affect the effectiveness of interprofessional communication in the digital work environment, hence, the fourth partial hypothesis is accepted.

CONCLUSIONS

Acceptance of All Four Partial Hypotheses:

The study overall demonstrated a shift towards digitalization in the studied library, positively impacting organizational structure and work methods. Interprofessional communication skills among employees vary, with digital transformation clearly influencing these skills. Moreover, the study showed a strong relationship between effective communication and the success of collective performance, while also highlighting the challenges faced in interprofessional communication due to digital transformation.

The findings suggest that while digital management introduces many positive changes, there are challenges related to skills, training, and communication that need to be addressed to maximize the benefits of digital transformation in the workplace.

Study Conclusion:

In conclusion, this study shows that digital management plays a pivotal role in enhancing interprofessional communication skills within modern institutions. However, it requires special attention to narrowing the skill gaps among employees. While digital transformation strengthens communication and coordination among individuals, it is not without challenges that call for further training and ongoing support. In this context, the application of digital communication technologies requires a comprehensive strategy that includes continuous training on technological tools and encourages collaboration across departments to achieve positive interaction. The effectiveness of team performance depends on the ability to quickly adapt to digital changes and enhance effective communication between employees to create a productive and progressive work environment.

LIMITATIONS OF THE STUDY

Despite the relevance of its findings, this study presents several limitations that should be acknowledged. First, the research was conducted in a single public cultural institution, which may limit the generalizability of the results to other organizational contexts or sectors. Second, the reliance on a questionnaire as the sole data collection instrument may not fully capture the depth and complexity of interprofessional communication dynamics, as respondents' perceptions could be influenced by subjective interpretation or social desirability bias. Additionally, the sample size, although adequate for descriptive analysis, restricts the possibility of more advanced statistical modeling. Finally, the cross-sectional nature of the study prevents the examination of changes over time in communication practices and team performance within a digital management framework.

FUTURE STUDIES

Future research could expand on the present study by adopting a comparative approach across different institutions or sectors to enhance the external validity of the findings. Longitudinal studies are also recommended to examine how interprofessional communication and team performance evolve over time as digital management systems mature. Moreover, the use of mixed-methods designs, combining quantitative instruments with qualitative interviews or observations, would provide a deeper understanding of the social and cultural dimensions of communication in digital work environments. Further studies could also explore the role of leadership styles and organizational culture as mediating variables in the relationship between digital management and team performance.

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