

Cite this Article: Rizwan, S., & Ashfaq, S. (2026). Organizational Noise in Open and Distance Learning Systems: A Multidimensional Framework for Understanding Communication Barriers. *Journal of Regional Studies Review*, 5(1), 226-241.
<https://doi.org/10.62843/jrsr/2026.5a186>

RESEARCH ARTICLE

JOURNAL OF REGIONAL STUDIES REVIEW (JRSR)

Organizational Noise in Open and Distance Learning Systems: A Multidimensional Framework for Understanding Communication Barriers

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Abstract: Organizational communication in Open and Distance Learning is highly complex because of the technological, structural, and contextual dynamics it presents. Communication theories suggest that organizational noise refers to the environmental, technological, cultural, and language barriers that interfere with or disrupt the communication process of sending, receiving, and giving feedback on a message. This study investigates the nature of organizational noise in a large-scale distance education system by identifying its manifestations, their sources, and factors that influence them. A qualitative research methodology was employed through semi-structured interviews and a focus group discussion. The faculty, administrative staff, and students related their experiences of organizational noise in the online environment of the Open University. Data analysis was conducted using thematic analysis to identify manifestations of organizational noise and their sources within the distance education context. The findings show that organizational noise is not only a complex construct that transcends the communication problems experienced by individuals. Rather, it is a holistic phenomenon that is formed through the interactions of structural, technological, cultural, and language barriers, such as spatial distance, design flaws in technology leading to inequalities in access and use, power, and generational disparities. Further, bilingualism as a support mechanism can also contribute to noise production.

Keywords: Digital Transformation, Thematic Analysis, Institutional Culture, Digital Literacy, Infrastructure Disparities

Introduction

Communication is a critical component in any organization in order to ensure institutional unity, effectiveness in performance, and quality service delivery. In higher education and more so in Open and Distance Learning (ODL), communication is a variable that must be worked harder than usual in order to deal with the challenges that arise due to the absence of direct personal contact with learners and the use of media channels to communicate with learners. The concept of organizational noise, which originated from the classical communication theory, is relevant to discuss in relation to communication conflicts, failures, and inefficiencies in organizations. Organizational noise is an obstacle that occurs in a communication process, and it can occur in the form of distortion, delay, or disruption of the message, and can be structural, cultural, or language-related obstacles that occur at the point of the source of the sender and the receiver of information.

In this digital age of learning, communication in an organization presents numerous opportunities and challenges. As a result of the adoption and use of Learning Management Systems (LMS), institutional portals, and mobile applications, communication within an organization has become very fast and efficient. However,

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new communication complexities and distortions arose that were not only technological but also systemic. Some of these include technological literacy challenges, unequal access to digital resources, and the lack of digital literacy. However, it is in large-scale Open and Distance Learning (ODL) systems that communication challenges are very pronounced because they entail large-scale geographical dispersion and decentralisation of learning institutions and heterogeneity of learners and staff.

In the context of organisational noise, where multiple variables interact to produce a complex dynamic, factors such as the geography of space, lack of infrastructure and technology can create communication disparities between different areas. Cultural obstacles such as administrative procedures and bureaucracy, as well as inter-generational issues related to the use of new communication technologies, can also hinder communication and slow down the response. The use of institutional language, administrative language, bilingual communication, official language, and minority languages can lead to ambiguity and complexity, which can be different for different socio-cultural and educational groups. These factors are interdependent, and they enhance each other's obstructive effect on the process of information transmission and interpretation.

Digital technologies are being rapidly adopted in the education sector, but communication challenges are still being discussed in isolation. Current research isolates each challenge, such as communication challenges caused by technology, student engagement, and so on. Hence, there is an urgent need for an integrated perspective that conceptualizes communication challenges occurring in Open and Distance Learning (ODL) systems.

By exploring communication challenges arising from the interaction of environmental, technological, socio-cultural, and language factors the study aims to develop a multi-dimensional framework of organizational noise applicable to distance education within Open and Distance Learning (ODL) contexts, and to thereby inform the types of institutional interventions required to develop institutions which are more communicationally competent, clear, participatory and productive communications and hence with improved organisational performance.

Objectives

- a) To examine the extent to which organizational noise disrupts internal communication in open and distance learning systems.
- b) To analyze how environmental, technological, cultural, and linguistic dimensions of organizational noise interact to influence communication processes.
- c) To propose contextually relevant and system-level strategies for reducing organizational noise and improving communication efficiency.

Research Questions

- (a) How do different dimensions of organizational noise affect internal communication in open and distance learning systems?
- (b) How do environmental, technological, cultural, and linguistic factors interact to shape communication barriers?
- (c) What strategies can be employed to reduce organizational noise and enhance communication effectiveness in digitally mediated education systems?

Literature Review

Much has been written about environmental and infrastructure noise. In Open and Distance Learning (ODL), the geography of place and space, as well as the unequal distribution of technology, unreliable energy sources, and unequal access to learning devices and technologies, all form part of the environment in which learning communication takes place. Material conditions that impede the reception and decoding of the

digital messages that are sent and that may thereby obstruct learners from realizing the learning potential of digital education are a common theme in studies carried out in the global South as well as in international literature. Azionya & Nhedzi (2021) and Devkota (2021) also mention digital inequality as one of the factors that determine learners' participation, engagement, and continuity in online learning activities. Leadership in digital higher education is yet another research strand that deals with how universities are leading their expansion into digital higher education and whether this is resulting in a reduction or an increase of inequalities, depending on the style of leadership they are applying (Laufer et al., 2021). From an organisational-noise perspective environmental noise cannot be reduced to physical distance, but also to the underlying infrastructure that supports communication.

Technological noise, a concept first discussed in the context of noise studies of everyday environments, refers to a range of auditory interference originating from new environments, new technologies, or new social situations. The second main thread of this research is the concept of technological noise. A review of recent literature points out the technological barriers that can obstruct the adoption of digital learning, such as system crashes, poor inter-operability, poor user experience, insufficient technical support, and low digital literacy of learners (Barikzai et al., 2024; Gkrimpizi et al., 2023; Singun, 2025; Yeh & Tsai, 2022). According to García-Peñalvo, (2021) and Laufer et al., (2021) as educational institutions face the on-going and profound digital transformation, a significant amount of concern is raised about communication models, as there is a risk that old forms of (educational) communication are simply replaced by new forms of noise, causing fragmentation and exclusion for learners and stakeholders in the digital learning environment of an educational institution if its digital model, staff's digital competence, and related stakeholder management are not adequately designed. In the context of the literature concerning the concept of digital literacy, Tinmaz et al. (2022, p. 1363) mention that "digital literacy refers to a set of skills and knowledge that people need to develop to interact and use information and communication technologies and digital tools to solve real-life problems efficiently and safely in the online world". In higher education, however, the content of the teacher's digital literacy is still in the phase of conceptual clarification, and necessary support mechanisms have not yet been fully developed in various educational environments (Wang & Baek, 2023). Furthermore, Meng et al. (2024) and Yan & Pourdavood (2024) also mention that effective online learning also depends on students having the same level of digital support and on the institution being ready for it. Technological noise in the framework of this study includes not only technical issues, but also the friction between the institutions' digital goals and learners' digital skills.

There is a third category of challenges "organisational noise" which is not mentioned in the literature, but all the examples given are variations of the following terms: hierarchy, inertia, lack of horizontal coordination, insufficient participation of stakeholders, institutional heterogeneity. According to Alhubaishy and Aljuhani (2021), teachers' and learners' attitudes are a major barrier to managing the change of technology in an institution that is not ready to change, nor ready to change the attitudes of teachers and learners. According to Laufer et al. (2021), governance, leadership, and collaboration are all significant factors that determine whether a technology-enhanced learning initiative will unite or divide. Recent literature reviews (Gkrimpizi et al., 2023; Singun, 2025) confirm that many barriers related to the organizational culture, leadership, stakeholder management, etc., are mentioned as challenges for managing digital transformation in higher education. This can be used as an argument for the fact that managing communication challenges in Open and Distance Learning (ODL) institutions is not only about getting the right mechanisms and tools in place, but rather that the barriers that educators and learners encounter in their communication processes are deeply embedded in the "cultural noise" of the institution. Cultural noise in this context refers to more than just environmental noise. It is about the values, norms, and power relations that shape and form the communication processes and channels in an institution, whether academic or administrative.

The fourth strand is named linguistic and interactional noise, because of the growing body of research on language and communication quality, but also because of the increasing attention for digital inequality

and platform design in the literature on higher education. Many of the issues mentioned in the literature relate to language clarity and accessibility, inclusive communication, and adequate interaction modes. Deep et al. (2025), for instance, found that student-teacher communication methods have a significant impact on students' engagement and motivation in online learning environments and are therefore a part of the learning environment itself, rather than an instrument for delivering learning materials. Reviews on accessible and inclusive online learning highlight the need for designing appropriate messages, interfaces, and communication styles that facilitate students' engagement with learning activities. Lomellini et al. (2025) also highlight the importance of appropriate language design for students with disabilities, but also for students from disadvantaged socio-economic backgrounds and for students with language or literacy difficulties that may have been poorly addressed in their previous learning environment. The meta-review on the Effectiveness of Online Higher Education identified interaction quality as one of the factors that contribute most to the success of online higher education (van Dorresteijn et al., 2025). This paper considers linguistic and interactional noise in a broad sense. It extends far beyond problems with vocabulary or bilingual difficulties to all other aspects of language and communication that are not optimised for their context of use in a Higher Education institution. Optimisation means that the language and communication is suitable for all intended recipients and is deployed at the right time and in a form that can easily be understood.

The recent literature affirms multiplicity, interdependence and organisational embedding of communication barriers in Open and Distance Learning (ODL) institutions. There is a clear gap in the literature concerning integrated frameworks that encompasses environmental, technological, cultural and linguistic barriers under the organisational noise construct. The existing literature is mostly focused on aspects of digital inequality, online readiness, and e-learning adoption. There is a scarcity of research that identifies how these different forms of interference interact within the communication system of an organization, and that transcends different activities, departments, and processes, both academic and administrative. This study conceptualizes organizational noise as an integrative framework that encompasses the environmental, technological, cultural, and linguistic barriers that disrupt communication within ODL institutions.

Methodology

Research Design

The study employed qualitative methodology to investigate the occurrence and nature of organizational noise in the Open and Distance Learning (ODL) context and the environmental, technological, cultural, and language factors that are embedded in it. It aims at eliciting the experiences, beliefs, and understandings of distance learners and teachers in relation to communication barriers.

Research Approach

The theoretical framework adopted in this study was interpretivist. The interpretivist perspective affirms that different organisations communicate differently from each other and in most cases communicate in more ways than is verbally expressed. It is socially constructed, and thus, the context of the individuals and institutions involved is very critical. The study sought to find out the understanding and feelings of individuals in relation to communication disruptions in institutional processes.

Participants and Sampling

Purposive sampling was employed in this study to get cases where individuals were actively involved in the institutional communication processes. The sample for this study comprised:

- a) Faculty members involved in academic communication and instructional processes
- b) Administrative/principal officers engaged in institutional coordination
- c) Regional directors representing geographically distributed

d) Learners enrolled for undergraduate studies in Open and Distance Learning (ODL)

The number of participants was 29. This consisted of 14 regional directors, 6 faculty members, 4 administrative representatives, and 6 students; 2 students from each of the faculties that offer programs through Open and Distance Learning (ODL), thus covering all functional and geographical levels of the university.

Data Collection Methods

Data were collected through semi-structured interviews and focus group discussions, which were conducted by using a guideline built on the four dimensions of organizational noise.

(a) Semi-Structured Interviews

Faculty members, administrative staff, regional directors, and students were interviewed in semi-structured interviews in order to gain a deeper insight into their experiences and to explore further in relation to organizational noise.

(b) Focus Group Discussion

In order to complement information obtained from interviews with members of the faculty, administration, and regional directors, a focus group discussion was organized. Students were not a part of the focus group discussions as they did not provide consent. The participants were asked for their opinions on challenges they encounter in the communication process and their recommendations for improving communication at the university.

Data Analysis

Data was analyzed through thematic analysis by applying coding, categorizing, and interpreting. Hence, the four forms of organizational noise, which are Environmental noise, Technological noise, Cultural noise, and Linguistic noise, were examined in terms of which themes were expressed. An integrative (convergent) methodology was employed in order to synthesize qualitative information gathered from interviews and focus group data. This methodology served to draw out common themes from the data and condense them in order to gain insight into the underlying organization noise construct as an interrelated whole.

Trustworthiness and Rigor

To ensure quality and reliability of the study findings, data triangulation was done through the use of multiple sources, i.e., interviews and focus group discussions. Participant diversity across academic and administrative roles was ensured, and systematic coding and theme development were carried out to enhance analytical consistency. These measures contributed to the reliability and interpretive validity of the findings.

Ethical Considerations

The ethical standards were maintained throughout the study. Participation in the study was voluntary. After explaining the objective of the study to the respondents, their consent was sought. The principles of confidentiality and anonymity were strictly adhered to; no sensitive information was requested from the respondents. The information obtained from the respondents was meant for academic purposes only.

Findings

Noise in an Open and Distance Learning (ODL) context is complex, deeply embedded in the system, interrelated, and interferes at every level of interaction within the academic and administrative systems. Whilst some sources of noise may not appear to make a significant impact on communication in isolation, when they are considered together, they can have a hindering effect on communication. The following sub-sections give further insight into each of the types of noise and their effect on communication within an ODL context, drawing on interview and focus group data.

Interview Findings

Environmental Noise: Structural Distance and Unequal Communication Landscapes

The phenomenon of environmental noise was identified as a structural condition of the ODL environment as opposed to an event. In the context of the study, physical distance was identified as a design feature of ODL environments, but with the caveat that its effects extended well beyond the spatial to embrace issues of environmental communication inequality and the exacerbation of socio-economic inequalities.

An administrator articulated this inherent characteristic:

"Our university is all about distance learning and therefore, of course, there is physical distance between the departments and the regional offices, which is on purpose."

Although most people accept this distance, they consider that environmental noise caused by these structures has a very different impact, depending on the characteristics of the infrastructure, the coverage of the area, and the topography of the place. According to the directors, the experience of communication is different for different people.

"In Balochistan or in the north, there is no connectivity or implementation as is in Punjab or in Islamabad."

The uneven structure of the infrastructure leads to asynchronous and delayed communication. It is effective for all areas. The faculty members expressed that the environmental noise prevents teaching and learning.

"When the student is not in the same location as you... It becomes more difficult to make sure that the student understands and responds immediately."

The research shows that environmental noise can act as a contextual constraint that may affect the speed, reliability, and reciprocity of communication in administrative and pedagogical tasks.

Technological Noise: Digital Systems as Enablers and Disruptors

The learners and instructors (faculty) identified technological noise as the most common and most visible type of organizational noise. They believed that technology noise forms a large part of organizational noise. They further believed that technology is an integral part of the Open and Distance Learning (ODL) system. They also acknowledged that communication has moved a long way from the postal system to much more sophisticated communication methods.

"Emails or the portal make it happen immediately, instead of taking days to receive letters."

"Noise isn't eliminated, it's just changed, and that created a lot of new challenges for us."

The third major observation is that even though a system can seem to be functioning properly, the system is often not fully taking advantage of its trained capabilities, and this creates another level of noise and also reduces the system's effectiveness.

"Primarily, LMS is used to post lectures... a lot of its functionality remains unused due to the fact that the instructors were not trained properly."

This is a capacity gap between the technological capabilities of the system and the capacity of the users to make full use of it. Currently, the systems are not fully utilized, and the users are facing a number of technical difficulties with the system:

"At the beginning, we encountered many difficulties with the Wi-Fi connection... and even now the internet connection is not stable in all places."

Technological noise was further compounded by inconsistent user engagement and digital practices:

"Some of the users do not check their emails on a regular basis."

The study indicated that the technological noise is not a failure of the technology itself, but rather a result of the misfit between technological infrastructure, institutional expectations, and human capacity. Thus, digital technologies can be both an enabler and a hindrance for communication.

Cultural Noise: Institutional Hierarchies and Behavioral Norms

Cultural noise is a term that describes the environmental factors that are inherent to the organization and its working practices that can distort, hinder, or act as barriers to the sending, receiving, or reading of messages. Cultural noise played a very important part in the communication process because it intervened in the sending, transmission, and reception of the messages. The communication procedures that were part of the organization were also an important factor that contributed to the communication problems that arose:

"We have to be doing it through the right channels... but sometimes issues are lost due to the hierarchy."

The informal structures were accountable in some respects, but introduced bureaucratic hurdles that were very frustrating and hindered a quick response. Faculty members noted that:

"Too many levels of procedure might slow down urgent academic coordination."

Generational technology adoption and resulting communication disparities are also considered forms of cultural noise.

"Some of our senior staff members are not yet accustomed and do not have full confidence in using digital tools for their working communications."

There is a generational divide that leads to different communication cultures for different age groups and levels of engagement/digital literacy. Some of the key issues that surfaced include:

"Top management is accommodating, yet sometimes files get lost or misplaced when they are transferred downwards."

The results show that cultural noise acts as an organizing principle in the social structure of networks and can influence individual behavior, and therefore how information flows through communication systems at multiple scales. This has direct implications for the performance and reliability of the system.

Linguistic Noise: Complexity, Formality, and Communication Accessibility

Linguistic noise was found to be a small but annoying factor affecting the clarity of a communication, its interpretability, its expressiveness, and the self-assurance of users. Many respondents felt that in institutions, people tend to use language professionally, scientifically, and in excess, which is incomprehensible to non-professional users:

"The language is hard to understand by non-experts due to the use of technical language."

Administrative staff also highlighted issues related to information overload and message structuring:

"Emails are efficient but difficult to filter, especially when important updates are mixed with technical information."

When languages are mixed or when people switch between two languages, communication can become noisy. In a bilingual setting, people have to deal with many different aspects of language noise. In our study, we asked people whether they would trust certain platforms to send sensitive information. The results show that people are less likely to trust those platforms when communication appears to be noisy.

"Students visit us physically to establish whether we received their message or not."

This reflects a loss of confidence in communication where a message is not clearly presented or made accessible to the listener, and the listener has to make a guess about whether the information is correct. Linguistic noise has an impact not only on the intelligibility of a communication system but also on the confidence of its users.

Student Perspective on Organizational Noise

Environmental Constraints and Administrative Dependency

Students had encountered communication problems on a daily basis in their institution due to a number of factors, including physical accessibility barriers and administrative issues.

"There was no one who could assist students when the regional staff member was absent. We just had to wait."

Students have identified many physical and operational barriers they encounter on campus in order to try to illustrate their need for improvement. In particular, they think that campuses should be available to students, staff, and members of the community in order to have access to services that cannot be provided through other media. The availability principle underlies the reliability of this communication system.

Technological Instability and Digital Inequality

The main source of disruption for the students was technology. They encountered difficulties related to synchronicity and meeting the required timeline. Students wrote:

"The connectivity was also a significant issue... 'Sir, no voice, no voice!'"

"When I tried to upload my work in the late afternoon on the due date, the site was very busy and would not load."

Students also commented on the structural issues with current technology systems, such as what they see as the fragmentation of systems and barriers presented by different platforms and passwords.

"There were two passwords for access to the CMS and LMS, and I remembered one of the old passwords that had stopped working."

Digital literacy differences were evident, particularly across age groups:

"It was simple for us young learners, but harder for those who are older."

According to the study, the technological noise refers not only to the technology malfunction but also to unequal opportunities of using the technology.

Cultural Practices and Informal Communication Dependence

Students reported that institution-level communication was often supplemented or overtaken by informal communication within social networks of friends, which was also prevalent for working students:

"We don't really have time to read through all the messages that are sent to LMS, so we are largely relying on WhatsApp for information and updates".

The students have undergone a huge change in the way they interact with office departments. Earlier, the students used to follow the formal channels to air their grievances, but today they have begun to opt for informal modes of communication. The reason is that they do not have the time to follow formal channels of redressal, as they feel that the system is inefficient.

One area where students felt teachers could improve was in relation to their involvement and understanding of the lessons:

Teachers used to be late. The lesson was scheduled for 8.00 pm, but commenced at 8:50 pm."

"Some teachers are not prepared and do not sound professional."

These insights propose that cultural noise refers to inconsistent behavior or over-explaining the point one is trying to make, and using too many sources to relay information.

Linguistic Barriers and Communication Accessibility

Young students frequently encountered linguistic barriers related to administrative and technical language used by public institutions.

"The language is easy to understand. Sometimes the language is too formal or too technical."

Students who speak languages other than English shared the ways in which the exclusionary power of English has an impact on rural students:

"The English used in the books appears to be a barrier that poses a real challenge for rural students."

Students preferred to receive messages via multimodal and simplified language, realizing that the television lectures they had been receiving were more understandable. The students experience the organizational noise in the learning areas as a persistent and cumulative load, rather than as a series of disruptive incidents. Communication disruptions are not experienced as mere technical failures, but as a wide range of different communication irregularities that occur in relation to the aspects of communication, such as timeliness, reliability, accessibility, and equity.

Focus Group Discussion Findings

Communication Environment: Functional yet Complex

Some of the focus group participants thought that the communication system generally worked fairly well, but that it was often too complicated. While they could remember some of the improvements, they complained that "the communication system is layer upon layer of communication" and that "too many messages are being sent out."

"Communication generally feels busy and complex..."

Participants emphasized that communication effectiveness varies across contexts, suggesting uneven institutional performance.

Digital Transformation: Progress with Persistent Gaps

Digital transformation has an impact on increasing communication efficiency and has some impact on shortening transit time and improving coordination:

"Digital transformation has greatly improved communication processes."

However, participants also highlighted inconsistencies in message delivery:

"Some students receive timely notifications... while others never receive them."

The digital revolution has opened huge opportunities, but it has also created new challenges and inequalities where the digital system is fast but not fair, leaving a lot of work to be done to close the digital divide and ensure greater social participation.

Technological Noise: Operational Challenges and Workload Implications

As suggested by the interviews, some of the barriers identified were confirmed, and the focus was then turned to more operational aspects:

"System glitches, delayed notifications, and difficulties in navigating digital platforms."

Participants also highlighted the increased workload associated with digital systems, particularly for faculty: *"Managing attendance, teaching, and handling technical tasks can be time-consuming."*

This points out that the technological noise which invades communication channels is not a triviality and can have a real impact on the methods of work, thereby increasing workload.

Environmental Constraints: Persistent Structural Limitations

Despite digital advancements, environmental constraints remain significant:

"Weak internet... messages can neither be sent nor received on time."

The study shows that digital innovations are no panacea for reducing structural inequalities, particularly in rural areas.

Communication Inequities at the User Level

Some of the concerns that have been identified are information disparity between users, such as between students and teachers, and information disparity for students.

"Some students receive timely information... while others miss notifications."

Language complexity was also identified as a barrier:

“The language used can sometimes be difficult for students to understand.”

This study presents the problem of systemic inclusivity, where communication systems do not ensure that all intended stakeholders are reached equally.

System-Level and Individual-Level Interactions

Participants explicitly distinguished between system-level and individual-level contributors:

“Communication issues exist at both system-level and individual-level.”

The terms system level and individual level refer to infrastructure, technology, and institutions on the one hand and to digital literacy, awareness, and participation of people on the other. They are not mutually exclusive.

The study examined the organization and impact of noise in the context of Open and Distance Learning (ODL). Findings showed that noise in ODL is not a set of barriers but a system of disturbing elements interacting with one another and causing disruptions. The interaction of these various elements, environmental, technological, cultural, and linguistic, tends to multiply the efforts learners have to undertake in order to communicate with each other in the ODL environment, and this is most pronounced in the case of learners in rural and other marginalized communities.

Noise in Open and Distance Learning is not reduced by digital transformation; it is different. Some physical sources of delay, which were previously a source of noise, have been eliminated, but new noise sources have arisen due to a wide range of factors, including learner digital literacy, the design of the technology itself, the learning environment within the organization, and the ways in which learners and teachers communicate. Thus, communication challenges in ODL are complex, dynamic, and deeply systemic and therefore require a holistic, context-dependent response that cannot be reduced to a simple technological solution.

The study offers organizational noise as a lens to explore communication inefficiencies in the digital learning environment and highlights the need for multi-faceted interventions (technological, institutional, and communicative).

Discussion

Organizational Noise as a Systemic and Interdependent Construct

Communication challenges in Open and Distance Learning (ODL) have been identified as being systemic and therefore cannot be viewed as isolated issues. This means that they are the result of the interaction of structural, procedural, cultural, and technological factors. Furthermore, the recent meta-analyses on digital learning in higher education highlighted that communication in digital learning environments is not a technology effect but the result of an interaction between technology, structures, processes, human abilities, and communication design (Barikzai et al., 2024; van Dorresteijn et al., 2025; Yeh & Tsai, 2022). This study affirms that organizational noise is an interdependent construct that results from the interaction between environmental, technological, cultural, and linguistic factors and that, therefore, attempting to gain insight into ODL systems through isolated variables such as technology, learner engagement, and learning resources is not satisfactory.

Environmental and Technological Noise: From Access to System Alignment

The study has established that infrastructural inequalities remain one of the factors that affect communication in distance learning in a world where education has been carried beyond the boundaries of geography through technology. Other studies have also shown that access to digital technologies and resources differ significantly in rural and urban areas and have various impacts on learners' participation, response, and

consistency (Azionya & Nhedzi, 2021; Devkota, 2021; Michikyan et al., 2025). The study, therefore, contributed significantly to the body of knowledge on the subject matter by highlighting that environmental noise was not only about distance or technology but that it was deeply rooted in the structural aspect of institutions, the responsiveness of administrative staff, and learners' operational dependency in distance learning, which affected communication success.

Digital technological noise has been identified as one of the problems in today's educational settings. On the one hand, technology has enabled communication at all levels. However, when carrying out academic tasks that require depth and concentration, such as submitting assignments and participating in online classes, learners experienced more sources of digital technological noise. As discussed in the literature, technological noise is a communication obstacle that arises from the excess of information and technology that does not allow for effective communication (García-Peñalvo, 2021; Laufer et al., 2021) and can perpetuate existing inequalities if the technology used is not aligned with the organizational context. The findings of this study confirm this assertion and points to the fact that the misalignment of technology functions and users' digital skills, a problem identified in the literature of unequal digital literacy in higher education (Tinmaz et al., 2022; Wang & Baek, 2023), which contributes to technological noise as a communication obstacle that is not only technical but also socio-technical in nature and refers to the affordances of technology, the digital skills of the users and the expectations of the institutions.

Cultural Noise: Organizational Practices and Informal Communication Systems

This study uncovered cultural noise as a means of communication. The findings indicated that the culture, bureaucracy, and technology generational gap affected the communication process and channels in ODL. This study and many others are in line with the fact that the institutional culture, governance, management, and stakeholder engagement are major determinants of the success of digitalization projects (Alhubaishy & Aljuhani, 2021; Laufer et al., 2021; Gkrimpizi et al., 2023; Singun, 2025).

According to the study, institutions have parallel communication ecosystems that deal with students' use of instant messaging apps to communicate in informal ways with peers, because official channels are not adequate. The cultural noise that students create by means of informal communication is not only a way of resisting the official communication systems of institutions, but it also serves as a means of communication, since students communicate in informal ways in order to communicate more effectively, and this is a sign of the weakness of the institutional bonding and trust and the inadequacy of official communication channels.

Linguistic Noise: Communication Design, Accessibility, and Inclusion

The third key finding was that the linguistic and interactional aspects of communication are not always given sufficient attention in the literature on digital education. This study supported other research, which suggests that the quality of communication is important for learner engagement and learning outcomes (Deep et al., 2025). The students encountered a range of linguistic, pragmatic, and presentational challenges in the communication they received from teachers and peers. These ranged from relatively straightforward and accessible to highly formal and cryptic, and at times difficult to follow. The findings highlighted the difficulties multilingual and socio-economically disadvantaged learners encounter, as their language use may differ from the social language expected in remote learning environments, and they are often already at a disadvantage because of their limited digital resources and access to technology.

The purpose of this paper is to investigate the impact of linguistic noise on online learning environments for students in order to strengthen the foundations for previous research carried out on the subject of online learning. As has been previously demonstrated, online learning requires communication design that is both accessible and user-centric (Lomellini et al., 2025). By linguistic noise, we mean any expression, whether it be lexical, grammatical, expressive, or typographic, which may interfere with the message, thereby hindering the understanding of that message, and thus affecting students' trust in the communication channels used by an educational institution. Such interference is also confirmed by the fact that students sometimes have to resort to external verification tools.

Student Perspective and the Redistribution of Communicative Responsibility

Students believed that communication problems occurred due to operational and administrative causes. However, they understood organizational noise as a mixture of persistent timeliness, reliability, accessibility, and equity problems. In relation to communication in online learning, Park and Choi (2009) and Lee and Choi (2011) identified a number of factors that affect student dissatisfaction and dropout, including poor institutional communication. The difference in this study was that students' experience of communication problems was not merely due to unclear or late communication. Rather, the intrinsic inconsistency in organizational communication itself caused the communication problems. As a result, students had to continue to struggle with their learning activities because the communication structures and technology set up to support learning activities were structurally and technically unsustainable.

This study has identified a reversal of communicative responsibility within institutions and learners. Learners in Distance Education are generally considered to attain the optimal level of independence for their learning situation through the interactive dialogue and course design mechanisms of transactional distance theory (Moore, 1993; Moore & Kearsley, 2012). This study has identified cases where learners were required to accept a large amount of independence, and were obliged to adopt various compensatory strategies, such as the use of communication substitutes to deal with the lack of access to information and resources due to the ineffective communication technology. Consequently, the balance between structure and dialogue identified by Saba (2000) in the systems perspective, which is broken due to the communication failure, leaves learners to develop their own compensatory strategies.

The literature on digital divide by Van Dijk (2020) and Warschauer (2004) all center on access, skills, and usage. This study adds communicative burden to the discourse of digital divide inequalities. Students with limited digital skills, poor network connectivity, and poor time resources have to spend more time and effort in managing their learning, which they describe as being communicatively burdened. This study, therefore, adds to the body of literature dealing with the digital divide inequalities in a unique way by broadening the understanding of communication barriers to learning from being mere obstacles to learning to being perpetuators and exacerbators of existing inequalities in ODL.

Digital Transformation as Reconfiguration rather than Resolution

Digitalization is often seen as a deterministic factor that brings numerous benefits. This study rejects this view of the world. Digitalization not only changes communication in an organization but also presents completely new challenges. Even though digitalization reduces temporal and spatial barriers to communication, and opens new communication channels, it at the same time also produces new sources of organizational noise due to the complexity of digital technologies and media, as well as the fragmented nature of communication and the heavy dependence on technology. The findings therefore support the critical views on digitalization, which perceive it as a system change, which is why it is necessary to harmonize technological, organizational, and human elements (García-Peñalvo, 2021).

The fact that communication inequities continue to exist in the Information Age at a time when the evolution of technology is unfolding at an incredible pace testifies to the importance of institutional consistency and capacity-building in communication, and highlights the limitations of focusing exclusively on technological advancements and the risk of the technologies being used as part of the source of communication inequities.

Toward a Holistic Understanding of Communication in ODL Systems

The study aimed to fill the gap in communication in Open and Distance Learning (ODL) literature by proposing a holistic communication framework based on the construct of organizational noise. This study formed part of a broader investigation into communication barriers experienced by distance learners within the ODL program of the University of South Asia. The findings of the study indicated that the communication

barriers experienced by distance learners were not isolated incidents but rather an ongoing phenomenon resulting from a dynamic relationship between environmental, technological, cultural, and language factors.

The purpose of this study was to investigate the role of organizational noise as a system-level mediator of communication effectiveness in Distance Education, and to shed light on the factors that can explain communication failure in digital learning environments. The findings of this study confirm the presence of organizational noise in the Distance Education context and contribute to the theory of organizational noise. In addition, the results highlight the need for a collaborative effort from students, policymakers, and practitioners to develop targeted interventions that account for the complex multi-level and multi-faceted nature of Open and Distance Learning (ODL) environments, comprising structural, technological, cultural, and communicative aspects.

Conclusion

According to empirical findings of this research, communication problems that occur in ODL systems are not isolated incidents, but rather structural phenomena that occur at the level of the institution, technology, learners', and teachers' learning and teaching practices. The ODL system using technology has opened a world of opportunities for learning from a distance. However, at the same time, it has also introduced new types of complexities that influence stability, accessibility, and clarity of communication. One of the main contributions of this study is the identification and distinction made between the availability and effectiveness of communication means. The findings of this study revealed that the availability of communication means is not directly equivalent to their effectiveness. In other words, having communication means available is not in itself an indicator that the communication means can be used effectively.

The inclusion of students in the research further confirms students' voices in relation to organizational noise, arguing that poor communication in online learning environments creates oppressive noise that negatively impacts students' engagement, learning, and participation in learning activities. The results show that communication deficits lead to learner excess activity (as learners need to work harder to understand and adapt to what is happening in the online environment, thereby increasing the transactional distance between the learner and the learning environment). Furthermore, the research shows that allowing organizational noise to exist in online learning environments can undermine attempts to address other issues that arise in these spaces. Overall, this research contributes to a holistic understanding of organizational noise as a relational and dynamic phenomenon that requires an integrated response in online learning environments. The study also highlights the need for further research as well as for education policy to develop communication resilience in digital learning environments by re-conceptualizing organizational noise.

Implications

The study offers a critical understanding of factors influencing learner engagement and success in ODL, and has implications for theory, policy, and practice in Open and Distance Learning (ODL) contexts.

This study theoretically expands the conditions under which communication occurs in distance education by treating organizational noise as a system variable rather than an environmental constraint on distance communication. It contributes to the refinement of communication and transactional distance frameworks by revealing that the communication process is a dynamic and non-simplistic phenomenon, where variables interact with each other and technology access is not a determining condition.

The study recommends a shift from the current technology-driven communication design to a more holistic systems approach at the institutional and policy levels. The emphasis should be on ensuring that the communication systems and technology are reliable, stable, and that people, processes, and technology are aligned to achieve inclusive learning. Among other things, this can be achieved by reducing platform fragmentation and streamlining communication channels to ensure that communication is consistent across

platforms. The study also recommends that policies address issues of infrastructure inequality as well as the digital exclusion of learners.

Based on the pedagogical and practical considerations outlined in the research, it is concluded that learning communications should be user-centered, which implies that institutional communications should be designed to be unambiguous, clear, and as accessible as possible for all, using a direct language approach and multimodal communication. It is also necessary to train academic and administrative staff in order to ensure their digital competence and engagement with students. Digital literacy is a shared responsibility that cannot be left to the individual learner. It is not acceptable that learners must search for ways of accessing learning materials, and it is necessary to provide adequate scaffolding within the institution to assist learners in acquiring the necessary skills to learn effectively in a digital environment.

This study strongly recommends that Open and Distance Learning (ODL) institutions should carry out an ongoing assessment and audit of communication in their systems. Hence, it is beneficial for ODL institutions to assess their systems for the degree of effectiveness of communication from the stakeholders' perspective and use the information to enhance communication in their institutions from time to time. Addressing organizational noise through system-wide interventions in ODL institutions will result in communication effectiveness, communication equity, trust, and better learning quality.

Limitations

This paper presents qualitative findings. It does not give information about the prevalence of organizational noise in the institution. The data used in this study is derived from interviews with students, leaving out the focus group discussions with them. Therefore, it leaves out the social dimension of students' interaction. The study is based on a single case of an Open and Distance Learning (ODL) institution, which also restricts the generalizability of the findings. Finally, the data is based on self-report and thus subject to participant biases and limitations, and is a product of a particular time and place in history, given the dynamic nature of technology.

Future Studies

All future research studies on organizational noise may employ mixed methods research design to determine the extent and impact of organizational noise on Open and Distance Learning (ODL) institutions. Collective student views on organizational noise must be elicited through participatory research approaches. Furthermore, comparative studies must be undertaken that investigate the various institutions and contexts. It is also recommended that studies be undertaken to find out the impact of learning intervention activities that are aimed at promoting effective communication amongst learners and staff in ODL institutions.

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