

Research Article

A Qualitative Exploration of Communication Dynamics within an Engineering Institution: An Interview-Based Approach

^aAbogado, Olen Simon E., ^bEspineda, Marco Carmelo D.R., ^cFaustino, Jan Albert Y., ^dGalang, Carl Josh O. and ^eGaspar, Adrian D.J.

^{a-e}Bulacan State University, MacArthur Highway Brgy, Guinhawa, City of Malolos, Bulacan, Philippines

*Corresponding Author Email: adriangaspar2704@gmail.com; abogado.olensimon.eugenio@bstateu.edu.ph

Received: March 10, 2024

Accepted: March 30, 2024

Published: April 07, 2024

Abstract

This study explores communication dynamics within an engineering institution, specifically through understanding the relevant aspects such as organizational culture, communication flow, models, and communication practices. Qualitative interviews with employees holding different positions were conducted to investigate and understand these aspects, which allowed the participants to elaborate on their experiences and perspectives on the organization's communication dynamics. The study utilized thematic analysis to examine the qualitative information obtained from the interviews. The findings highlight the influence of shared values, such as equality and respect, on organizational communication. Results also reveal a downward flow of information following the hierarchical structure, with some difficulties communicating through phone calls. Cultural diversity within the workplace also emerged as a barrier, although employees emphasized the importance of open-mindedness. The analysis suggests the prevalence of Berlo's SMCR model due to the linear flow of information with some feedback. Further research could explore the effectiveness of specific communication interventions and strategies in addressing the identified challenges. Overall, this study provides valuable insights into communication dynamics within an engineering organization. It also recommends some strategies for effective communication, which can enhance communication channels, improve employee relationships, and ultimately contribute to the organization's success.

Keywords: Organizational Communication, Engineering Institution, Communication Dynamics, Organizational Culture, Communication Flow, Berlo's SMCR Model.

1. Introduction

More than physical structures and establishments, institutions are shaped by human interaction and driven by the dynamic interplay of communication between their members. Understanding and communicating well with others is a desirable skill, an advantage in today's interconnected society, and a necessity in multiple professions and industries. The nature of different institutions today requires collaboration, coordination, and cooperation to communicate ideas, share information, and interact effectively. A coherent exchange of information, thoughts, ideas, and experiences between its members constitutes the organization's success, efficiency, and essence. According to Rana (2013), communication is the lifeblood of any organization, and it generally refers to exchanging information, ideas, thoughts, and feelings among people. It also facilitates the creation of ideas and collaborative action.

Every institution's unique communication culture and practices can be influenced by its values, norms, and shared beliefs. Organizational communication is vital in ensuring that all organizational operations run smoothly, as it serves as an avenue for bringing new and innovative concepts to the table, communicating operational information effectively, and cultivating a sense of camaraderie among team members. However, communication within institutions can be complex. Hierarchies can create barriers, resulting in information being lost or misinterpreted as it moves up and down the command line; different departments may use their jargon, leading to misunderstandings. In addition, cultural differences and varying personality traits might influence how people communicate and interpret information. As stated by Rani (2016), a common cause of communication breakdown in a workplace is people's different attitudes, values, and discrimination.

In particular, engineering organizations work within a pretty demanding environment. From the initial planning stages of a project to its final execution, its seamless operations rely significantly on effective communication. Clear instructions and timely flow of information are critical in minimizing errors and ensuring the safety of employees. Adequate communication guarantees efficient operations and encourages collaboration among its diverse employees. Visualize a busy construction site where vital safety procedures are not clearly understood, or instructions are not communicated clearly, and consider an engineering team where communication is straightforward, ideas are clearly expressed, and different viewpoints are quickly exchanged. There is a clear distinction between the two scenarios: the former is likely to result in delays, mistakes, and even safety risks, while the latter creates an atmosphere favorable to creativity, productivity, and, eventually, project success.

Despite the widely acknowledged significance of communication, existing studies about communication cultures within engineering organizations often fail to tackle the intricate dynamics. By exploring the communication culture of specific engineering organizations, this study aims to close the gap. The study seeks to understand the organization's communication dynamics, culture, challenges, barriers, and information flow through interviews with employees at various positions. Identifying these elements can provide valuable information that can be used to improve communication strategies and build a more effective way of communication within the engineering organization. Further study into the dynamics of communication in engineering organizations can be based on the findings of this study.

2. Literature Review

2.1. Impact of Culture on Communication

Organizational communication is a vital aspect of any business or institution, and its effectiveness is often influenced by cultural factors and accompanied by various challenges. A study by Hofstede (1980) entitled *Culture's consequences: International differences in work-related values* explores how cultural dimensions such as power distance, individualism-collectivism, uncertainty avoidance, and masculinity-femininity influence organizational communication. For instance, communication tends to be more hierarchical in cultures with high power distance, whereas communication is more egalitarian in cultures with low power distance. Understanding these cultural dimensions helps organizations tailor their communication strategies accordingly. High-context and low-context cultures provide a framework for understanding communication patterns across cultures. Leaders who grasp these concepts can effectively adapt their communication strategies to engage with employees from diverse cultural backgrounds.

A study conducted by Trompenaars and Hampden-Turner (1997) emphasizes the importance of understanding cultural diversity within organizations. It explores how cultural differences can lead to misunderstandings and offers strategies for bridging these gaps through effective communication practices. Language barriers, differing communication styles, and cultural norms can lead to misinterpretations and conflicts. Addressing these challenges requires cultural sensitivity and adapting communication approaches accordingly (Adler, 1991).

2.2. Hierarchical Structures and Communication

One aspect to be also mentioned is the role of the hierarchical structure. An article by Miller (2012) briefly outlines diverse organizational communication strategies, such as those emphasizing hierarchical procedures. It further delves into how communication occurs within a hierarchical organization using formal channels, authority structures, and power dynamics to develop communication patterns. Furthermore, hierarchies can determine decision-making, coordination, and information flow, emphasizing the merits and risks of the hierarchical structure (Mayntz, 2004).

2.3. Culture as a Force for Effective Communication

Culture can also drive effective communication despite its differences. A study by Gudykunst *et al.*, (1988) explores the influence of culture on interpersonal communication and highlights challenges such as ethnocentrism, stereotypes, and cultural assumptions that can hinder effective communication. Overcoming these barriers involves developing cultural empathy and adopting a communication style that respects cultural differences. Great leaders or mediators can also be the key to communication inside an organization, and they are the core that maintains peace and order within the organization despite cultural differences. Cultural dimensions affect leadership behaviors and communication styles across different cultures, offering insights for global leaders (Dorfman, 2014). A study by Thomas and Ely (1996) proposes a paradigm shift in managing diversity, emphasizing the importance of leveraging cultural differences to enhance organizational communication and performance. The values of inclusive communication tools in terms of actualizing

diversity by opening the lines of communication and getting feedback, company management can utilize the combined minds of their employees, who are rich in talent, to solve challenging tasks and complicated problems. Apart from this, inclusive communication aligns the workers with a sense of belonging and helps them feel psychological safety, which lets them communicate and contribute to the organization's goals.

2.4. Communication within Engineering Organizations

People apply scientific theory to develop, design, and analyze solutions in engineering. Generally, engineering consists of major essential branches with numerous subdisciplines. The major branches of engineering are civil, chemical, software, mechanical, electrical, electronics, and industrial. Research done by Johnson and Wang (2019) entitled "Communication challenges in multidisciplinary engineering teams" explores multidisciplinary engineering teams' communication challenges. It identifies jargon barriers, divergent disciplinary perspectives, and hierarchical differences that hinder effective communication and collaboration. By understanding these cultural influences, organizations can adapt communication strategies to foster collaboration and innovation in multicultural engineering teams (Smith, 2012).

2.5. Common Challenges: Education and Technology

Despite the cultural differences, one major factor affecting communication within the organization is the level of education. The educational level determines the ability of individuals to develop the needed communication skills. With the ultimate goal of triumph in academic and career pursuits, communication skills are unquestionably paramount. Communication is one of the practical components of jewelry academic and professional success. Accurate communication skills are crucial for this in academia and the workforce. Communication proficiency is instrumental in academic and professional performance (Baker and Baker, 2018).

Lastly, technological advancements also affect the effectiveness and quality of communication, not only inside the organization but also in every aspect of life. It enables global collaboration but poses challenges related to cultural differences, time zones, and virtual team dynamics (Maznevski and Chudoba, 2000). Additionally, a book by Kock and Lynn (2012) explores the impact of communication technologies on organizational culture and communication processes, emphasizing the need for cultural sensitivity in virtual interactions. It brings new challenges that affect the flow and the level of comprehension.

These literature sources provide invaluable perspectives on cultural and organizational communication patterns. Various institutions, particularly engineering organizations, can enhance collaboration, innovation, and project success in multicultural environments by understanding cultural influences, addressing communication challenges, and promoting inclusive communication practices.

3. Methods

The researchers used a phenomenological approach to assess the communication process's several factors present in the workplace, including but not limited to the communication culture, flow, models, and practices that the organization members utilized. Using this method will enable the researchers to gain several insights regarding the experiences of the members within the organization that might influence the flow of communication in the workplace. Also, it will emphasize certain situations and elements considered as factors within the scope of the communication process. In this study, the qualitative method aimed to gather an in-depth understanding of the existing communication culture within a professional workplace, specifically in the engineering field, through observations that were categorized and brought to a detailed analysis. The phenomenology approach in qualitative research was considered in this study to emphasize the structure and formation of the participant's lived experience and the subjectivity within their values that significantly affects their views and practices in communication.

The researchers used purposive sampling, a technique of choosing participants most suited to meet specific criteria made with the research's objectives as a basis (Hassan, 2024). The method allowed the researchers to select informants who were current employees with experience engaging in communication within the organization. The researchers tried to gather a diverse sample, with each participant holding different positions within the company, such as electrical engineer, technician, supervisor, etc. This emphasis on participant variations was needed since individuals occupying different roles would have unique experiences and viewpoints regarding their communication patterns. Considering this diversity increases the chance of the research to generalize the whole population successfully. Given the company's limited number of employees (15) and their availability, the researchers were fortunate to secure interviews with 12 participants, a number suited for a well-rounded representation of the organization's members.

Table 1. Informants' data.

No.	Code	Informants' status	Position	Informant's chronicle
1	I-MS-P1	Supervisor	Head	Have rendered service to the company for 11-16 years. Oversees projects and monitors workers.
2	I-MS-P2	Maintenance supervisor	Head	Have rendered service to the company for 11-16 years. Oversees maintenance and repair works.
3	I-MS-P3	Project manager	Head	Have rendered service to the company for 5-10 years. Manages the development and implementation of projects.
4	I-MT-P1	Electrician	Member	Have rendered service to the company for 5-10 years.
5	I-MT-P2	Electrician	Member	Have rendered service to the company for less than 5 years.
6	I-MT-P3	Manufacturer	Member	Have rendered service to the company for 5-10 years.
7	I-MT-P4	Manufacturer	Member	Have rendered service to the company for 5-10 years.
8	I-MT-P5	Mechanical technician	Member	Have rendered service to the company for 11-16 years. Operates machines, servicing, and troubleshooting equipment.
9	I-MT-P6	Technician	Member	Have rendered service to the company for 5-10 years. Maintains and repairs equipment.
10	I-UW-P1	Warehouseman	Member	Have rendered service to the company for less than 5 years. Maintains inventory controls and sorts manufacturing items.
11	I-UW-P2	Driver	Member	Have rendered service to the company for 5-10 years. Delivers materials to the site and/or clients.
12	I-UW-P3	Guard	Member	Have rendered service to the company for less than 5 years. Safeguards the warehouse and company properties.

The study aimed to cover the culture, challenges, and flow of communication inside the engineering company. The researchers decided to use interviews as their primary method of collecting data. This method allowed the participants to expand their answers related to the questions given to them. Also, the researchers gained the ability to ask follow-up questions that could help gain further information about the participants' experiences. With that, a better grasp of their situations was obtained, as the individuals could provide additional details about their perspectives. The interview questions mainly focused on the four factors undermining this study's primary objective: communication culture, communication flow, communication models, and communication practices. The researchers carefully crafted and thoroughly analyzed these questions before implementation. Such analyses ensure that the questions can match the research's goals. Considering that the participants' answers were the sole source of information, the researchers prioritized making an open and comfortable interview setting. With that, the workers were encouraged to share their insights freely and to elaborate on their experiences whenever possible. Consent audio recordings were conducted during the interview with each participant to ensure that even the tiny details would be looked over during the analysis phase. The recordings guaranteed that no crucial information would be lost during transcription, leading to a more comprehensive understanding of every answer the interviewers have gathered.

Thematic analysis was utilized to categorize the respondents' responses under common themes related to the study's objectives (Rosala, 2022). Through this method, the researchers could find significant details from the repeated responses of multiple respondents that would imply the validity of the insights the participants gave. Using the data obtained from the analysis of the informants' responses, the researchers concluded various statements that could represent the current state of the communication culture within the said organization. Some suggestions were also obtained to further increase the efficiency of the communication process, especially in a professional setting.

4. Results and Discussion

Communication dynamics involves studying communication processes throughout various contexts (The C2 Group, 2015). Communication involves different factors that are easily influenced by the culture, environment, and level of knowledge of those involved in the process. In this study, the researchers aimed to gather insights regarding those factors that could explain the common culture, practices, and values that

influence the way the members of the organization communicate in their professional workplace. This also includes the barriers that may impede the flow and reduce the efficiency of information within the organization.

Based on the results of the study, the common themes that were found that explain the communication culture within the organization include the following: most members possess certain values that influence their considerations when it comes to communicating with their fellow members, such as the concepts of equality, respect, and integrity; that most members do not have any distinction when it comes to communicating within or outside their workplace; and that most members share the same perspective when it comes to how communication is a significant part of their daily lives.

Another factor that could describe the communication dynamics within a professional setting is the flow of information. It is visible from the responses of the informants how the organization follows a downward flow when it comes to the distribution of information regarding their projects and other endeavors. This downward flow of communication is also influenced by the hierarchy that is present within the organization. It starts with the person with the highest position, often called the "boss," receiving an order from a client, which will then be distributed to their head engineers or supervisors, who will then manage the distribution of information throughout their departments. Regarding communication channels, the respondents implied that they often experience difficulties receiving information through cellular or mobile devices despite their efficiency and convenience. They all agreed that receiving or distributing information personally is more practical because it is much easier to address misunderstandings when the people involved are within the same vicinity. Other methods of communication were also observed in the workplace. The researchers have observed the existence of non-verbal cues such as tapping of shoulders as a form of assurance, pointing fingers to indicate directions, and raising a hand to call someone's attention. It is also noticeable how written communication is essential in the workplace. It can be seen in the form of letters containing information about the project or the contract with the client, the notes and announcements posted on their bulletin board, and the drawings and figures explaining the framework of the products and machines they are making.

It is also evident from the study results that certain barriers still exist even in a professional setting like their workplace. The aforementioned hierarchy often impacts the way the members communicate with each other. Most of them mentioned how they use casual language when talking with fellow employees on the same or a lower level, while formal language is often observed when speaking to members with a higher authority than them due to respect. Another common cause of problems when communicating with each other is cultural diversity within the workplace. The organization has individuals from various backgrounds and uses varying languages. Due to this, the different interpretations made by some members often need clarification while working. To alleviate this, most members agreed on how to learn to be more open-minded when communicating, but some still expressed difficulty when handling such situations. The study results also indicated how the organization does not impose strict rules and regulations that affect workplace communication freedom.

5. Conclusion

In conclusion, the dynamic interplay of communication between the members of this organization was influenced by various factors but is not necessarily distinctive compared to the flow of communication outside their workplace. The communication culture within the organization involves themes like values, norms, beliefs, and specific patterns of communication that are no different outside of a professional setting but still heavily influence the practices done by the members. Also, communication flows down the organization as it follows a specific hierarchical structure based on the workers' level of authority, skills, and experiences. Based on these factors, the researchers also concluded that Berlo's SMCR communication model is present within the organization due to the linear flow of information, which is still influenced by feedback, emphasizing the process of encoding and decoding the details needed to execute the instructions. Lastly, the communication barriers in the organization that can impede clear information flow and collaboration include cultural diversity in the workplace, varying opinions and perspectives, and the ineffectiveness of using digital devices to communicate with each other.

Based on the results of the study, the following are recommended to address such challenges: that the organization develops strategies for managing cultural diversity in the workplace; that the organization promotes two-way communication among its members, which could help to enhance the leadership within the workplace; that the organization fosters a culture of open communication to reduce the risks of

misunderstandings among the members; and that the organization conducts practices on the members on how to utilize the use of technology for communication which can ensure timely exchange of information and minimize misinterpretations. By implementing these recommendations, the organization can create more effective communication channels. This will improve the relationship between the organization's members and foster efficiency when executing various orders and instructions, ultimately leading to the organization's success. Further research could look into the efficacy of various strategies for communication in addressing identified challenges and barriers.

6. Limitations

The general intent of this research was to explore and discuss the organizational culture and communication practices, flow, and challenges within a selected engineering institution, specifically among its engineering and utility personnel. The focus on these chosen workers may not represent communication dynamics within other departments. The findings of this study may not also be generalizable to other engineering organizations due to the particular size and structure of the chosen organization. Additionally, the data collection only covered a limited timeframe, and communication patterns within the company might evolve over time. The findings also suggest potential updates, contradictions, changes, or improvements in future investigations. Future research could benefit from including a more comprehensive range of workers and departments within the company. In addition, exploring communication practices over a more extended period could provide insights into how communication adapts to ongoing projects.

Declarations

Acknowledgments: We would like to acknowledge the members of the research group for their extensive efforts and cooperation throughout the research process. We also extend our sincere gratitude to our esteemed course professor, whose guidance and support were instrumental throughout the writing process of this research paper. Furthermore, we acknowledge the pivotal role played by the engineering institution that served as the focal point of our study. We also express our heartfelt appreciation to all the employees who generously participated in this study, contributing invaluable data and insights. Their cooperation and assistance were indispensable to the successful completion of this research endeavor.

Author Contributions: OSA: Concept and design of the study, methodology, interpretation of results, discussion, and manuscript revision; MCE: Introduction, literature survey, recording and transcription of data; JAF: Literature review, manuscript preparation and revision; CJG: Methodology, analysis of results, and limitations of the study; AG: Introduction, manuscript preparation, review and revision, and submission of the article.

Conflict of Interest: The authors declare no conflict of interest.

Consent to Publish: The authors agree to publish the paper in International Journal of Recent Innovations in Academic Research.

Data Availability Statement: The data presented in this study are available upon request from the corresponding author.

Funding: This research received no external funding.

Institutional Review Board Statement: Not applicable.

Informed Consent Statement: Informed consent was obtained from all subjects involved in this study.

Research Content: The research content of the manuscript is original and has not been published elsewhere.

References

1. Adler, N. 1991. International dimensions of organizational behaviour. PWS-KENT Publishing Company, Boston, USA.
2. Baker, J. and Baker, S. 2018. Communication skills in academic and professional contexts. Information Age Publishing.
3. Dorfman, P.W. 2014. Introduction to international organizational behavior. <https://www.academia.edu/40635178/>
4. Gudykunst, W.B., Ting-Toomey, S. and Chua, E. 1988. Culture and interpersonal communication. Sage Publications, Inc. <https://psycnet.apa.org/record/1988-98698-000>
5. Hassan, M. 2024. Purposive sampling methods, types and examples. <https://researchmethod.net/purposive-sampling/>
6. Hofstede, G. 1980. Culture's consequences: International differences in work-related values. Beverly Hills, CA: Sage.

7. Johnson, R. and Wang, L. 2019. Communication challenges in multidisciplinary engineering teams. In: Proceedings of the 52nd Hawaii International Conference on System Sciences (pp. 123-132). Association for Computing Machinery. <https://dl.acm.org/doi/fullHtml/10.1145/3459613>
8. Kock, N. and Lynn, G.S. 2012. Electronic media variety and virtual team performance: The mediating role of task complexity coping mechanisms. *IEEE Transactions on Professional Communication*, 55(4): 325-344.
9. Mayntz, R. 2004. Organizational forms of terrorism: Hierarchy, network, or a type sui generis?, MPIFG Discussion Paper, No. 04/4, Max Planck Institute for the Study of Societies, Cologne.
10. Maznevski, M.L. and Chudoba, K.M. 2000. Bridging space over time: Global virtual team dynamics and effectiveness. *Organization Science*, 11(5): 473-492.
11. Miller, K. 2012. *Organizational communication: Approaches and processes*. Cengage Learning.
12. Rana, R. 2013. Effective communication in a diverse workplace. *International Journal of Enhanced Research in Management and Computer Applications*, 2(2): 1-5.
13. Rani, K.U. 2016. Communication barriers. *Journal of English Language and Literature*, 3(2): 74-76.
14. Rosala, M. 2022. How to analyze qualitative data from UX research: Thematic analysis. Nielsen Norman Group: <https://www.nngroup.com/articles/thematic-analysis/>
15. Smith, J. 2012. Adapting communication strategies for collaboration and innovation in multicultural engineering teams. *Journal of Engineering Management*, 45(3): 217-230.
16. The C2 Group. 2015. Five ways to work-communication dynamics in professional contexts. <https://www.c2experience.com/blog/five-ways-to-work-communication-dynamics-in-professional-contexts/>
17. Thomas, D.A. and Ely, R.J. 1996. Making differences matter: A new paradigm for managing diversity. *Harvard Business Review*, 74(5): 79-90.
18. Trompenaars, F. and Hampden-Turner, C. 1997. *Riding the waves of culture: Understanding diversity in global business*. McGraw-Hill.

Citation: Abogado, Olen Simon E., Espineda, Marco Carmelo D.R., Faustino, Jan Albert Y., Galang, Carl Josh O. and Gaspar, Adrian D.J. 2024. A Qualitative Exploration of Communication Dynamics within an Engineering Institution: An Interview-Based Approach. *International Journal of Recent Innovations in Academic Research*, 8(4): 1-7.

Copyright: ©2024 Abogado, Olen Simon E., et al. This is an open-access article distributed under the terms of the Creative Commons Attribution License (<https://creativecommons.org/licenses/by/4.0/>), which permits unrestricted use, distribution, and reproduction in any medium, provided the original author and source are credited.