

Emergency Remote Teaching During COVID-19 in Italian Higher Education

Pedagogical, Technological, and Interactional Perspectives
from the University of Catania

Debapriyo Nag
Management College of Southern Africa
Durban
South Africa

dev.nag@mancosa.co.za

Received: October 7, 2025/Approved: March 15, 2026

DOI:[10.5281/zenodo.21606420](https://doi.org/10.5281/zenodo.21606420)

Senior Lecturer (Business), Management College of Southern Africa.
Post Doctoral Fellow European Scientific Institute (ESI), and Academic Program Leader,
Master of Commerce School of Business Excellence.
Orcid: <https://orcid.org/0000-0001-5027-2010>



Emergency Remote Teaching During COVID-19 in Italian Higher Education

Pedagogical, Technological, and Interactional Perspectives from the University of Catania

Abstract

The COVID-19 pandemic forced universities worldwide to transition to Emergency Remote Teaching (ERT), a temporary instructional shift implemented during crisis conditions. As opposed to planned online learning environments, ERT was characterized by limited preparation time and substantial pedagogical adaptation. The present study examines faculty and student perceptions of ERT at the University of Catania in Italy, focusing on the quality of interaction, communication tools, and collaboration between students and instructors. In accordance with a pragmatist research philosophy, the study used a mixed-methods exploratory design including a student survey ($n = 19$) and a faculty focus group ($n = 15$). Quantitative data was analyzed using exploratory inferential statistics and effect size measures, while qualitative data was analysed using thematic analysis. The qualitative findings highlight significant pedagogical and technological challenges, including increased faculty workloads, changed interaction dynamics, and a need for rapid instructional adaptations. The quantitative results indicate that instructor feedback ($d = 0.81$) and collaborative skills ($d = 0.61$) have a positive impact on students' learning experiences during ERT. Delayed peer responses had a moderately negative effect on engagement ($d \approx -0.61$). This study contributes to the growing literature distinguishing emergency remote teaching from structured online learning. It also emphasizes the central role of pedagogical design and communication practices in digital learning environments. The findings have practical implications for faculty development as well as for the design of resilient hybrid learning models in post-pandemic higher education.

Keywords: emergency remote teaching, higher education, digital pedagogy, COVID-19, interaction, feedback.

Enseñanza a distancia de emergencia durante la pandemia de COVID-19 en la educación superior italiana

perspectivas pedagógicas, tecnológicas e interactivas en la Universidad de Catania

Resumen

La pandemia de COVID-19 obligó a las universidades de todo el mundo a pasar a la enseñanza a distancia de emergencia (ERT), un cambio temporal en la modalidad docente aplicado en situaciones de crisis. A diferencia de los entornos de aprendizaje en línea planificados, la enseñanza a distancia de emergencia (ERT) se caracterizó por un tiempo de preparación limitado y una adaptación pedagógica considerable. El presente estudio analiza las percepciones del profesorado y del alumnado sobre la ERT en la Universidad de Catania (Italia), centrándose en la calidad de la interacción, las herramientas de comunicación y la colaboración entre alumnos y docentes. De acuerdo con una filosofía de investigación pragmática, el estudio utilizó un diseño exploratorio de métodos mixtos que incluía una encuesta a los estudiantes ($n = 19$) y un grupo de discusión con el profesorado ($n = 15$). Los datos cuantitativos se analizaron mediante estadísticas inferenciales exploratorias y medidas del tamaño del efecto, mientras que los datos cualitativos se analizaron mediante un análisis temático. Los resultados cualitativos ponen de relieve importantes retos pedagógicos y tecnológicos, entre los que se incluyen el aumento de la carga de trabajo del profesorado, los cambios en las dinámicas de interacción y la necesidad de realizar rápidas adaptaciones en la enseñanza. Los resultados cuantitativos indican que la retroalimentación del profesor ($d = 0,81$) y las habilidades de colaboración ($d = 0,61$) tienen un impacto positivo en las experiencias de aprendizaje de los alumnos durante la enseñanza a distancia de emergencia. Las respuestas tardías de los compañeros tuvieron un efecto moderadamente negativo en la participación ($d \approx -0,61$). Este estudio contribuye a la creciente bibliografía que distingue la enseñanza a distancia de emergencia del aprendizaje en línea estructurado. Asimismo, destaca el papel fundamental del diseño pedagógico y las prácticas de comunicación en los entornos de aprendizaje digitales. Los resultados tienen implicaciones prácticas para el desarrollo del profesorado, así como para el diseño de modelos de aprendizaje híbridos resilientes en la educación superior pospandémica.

Palabras clave: enseñanza a distancia de emergencia, educación superior, pedagogía digital, COVID-19, interacción, retroalimentación.

1.0 Introduction

The rapid spread of COVID-19 in early 2020 precipitated one of the most significant disruptions in the history of higher education. Universities across the globe were compelled to suspend face-to-face instruction and transition abruptly to Emergency Remote Teaching (ERT). Unlike intentionally designed online or blended learning environments, ERT is characterized by its temporary nature, limited preparation time, and implementation under crisis conditions (Ferri et al., 2020). This distinction is critical, as early evaluations of pandemic-era teaching often conflated ERT with established online education models, leading to conceptual and empirical ambiguities.

In the European and Italian contexts, universities faced substantial challenges related to infrastructure readiness, pedagogical adaptation, and digital competence among both faculty and students (Casacchia et al., 2021; Tamborra, 2021). While ERT enabled institutional continuity, concerns emerged regarding interaction quality, assessment integrity, student engagement, and faculty workload. Understanding these dimensions is essential not only for retrospective evaluation but also for informing institutional resilience and preparedness for future disruptions.

This study examines ERT at the University of Catania, Italy, drawing on both student and faculty perspectives. By adopting a mixed-methods approach, the study aims to capture both experiential depth and exploratory quantitative patterns related to interaction, feedback, and communication practices during ERT. Finally, this study examines the specific challenges and successes of ERT at the University of Catania in Sicily and aligns these findings with a theoretical framework to suggest more sustainable pedagogical models.

2.0. Overview of Literature

Emergency Remote Teaching and Higher Education

Emergency Remote Teaching refers to the temporary shift of instructional delivery to an alternate mode due to crisis circumstances (Bozkurt et al., 2020). Unlike online learning, which is systematically designed and supported, ERT prioritizes continuity over optimization. Studies consistently emphasize that evaluating ERT using traditional online learning benchmarks may produce misleading conclusions (Ferri et al., 2020; Shim & Lee, 2020).

Interaction, Feedback, and Student Engagement

Interaction is widely recognized as a core determinant of learning quality in digital environments (Anderson, 2011). During ERT, reduced immediacy, limited visual cues, and technological constraints often undermined interaction quality (Oliveira et al., 2021). Timely instructor feedback has been shown to mitigate disengagement and enhance learning satisfaction, particularly in crisis-induced remote contexts (De Paola et al., 2022).

Blended, Hybrid, and Post-Pandemic Learning

Recent literature suggests that post-pandemic higher education is increasingly gravitating toward hybrid and blended models that integrate the flexibility of online learning with the social affordances of face-to-face instruction (Mehta et al., 2024; Yu et al., 2023). Insights from ERT experiences provide valuable guidance for designing resilient and inclusive learning ecosystems.

2.1.Theoretical and Empirical Context: Emergency Remote Teaching(ERT) The Conceptual Boundaries of ERT

In order to differentiate between planned online education and emergency remote teaching, it is necessary to look at the "Design-Reality Gap." While established online learning models are built upon robust instructional design frameworks, such as Communities of Inquiry (CoI) or ADDIE, ERT is a reactive adaptation. In their article, Bozkurt et al. (2020) argue that ERT should be considered from the perspective of crisis management rather than educational innovation. It was particularly evident in the Italian context, where institutions had varying degrees of "digital readiness," requiring a focus on instructional continuity rather than perfection in pedagogy.

Interaction and the "Transactional Distance"

An important challenge identified in ERT is the increase in "transactional distance" - the cognitive and emotional gap between teachers and learners. It has been suggested by Anderson (2011) that high-quality learning requires three modes of interaction: student-content, student-student, and student-teacher. Faculty found it difficult to gauge engagement during the pandemic due to the abrupt loss of physical cues, such as students keeping their cameras off. This supports the qualitative findings which indicate that online exchanges were often shorter and less spontaneous than face-to-face exchanges.

The Criticality of Feedback and Response Latency

Social presence is primarily maintained via feedback in a remote setting. Student procrastination and feelings of isolation are reduced by timely instructor feedback. According to empirical evidence, delayed feedback reduces student satisfaction significantly, which is echoed in the quantitative analysis presented in the ensuing sections of quantitative analysis where "Peer Reply Latency" had a moderate negative effect on learning ($d = -0.61$). It illustrates that in ERT, speed of communication is often as important as content.

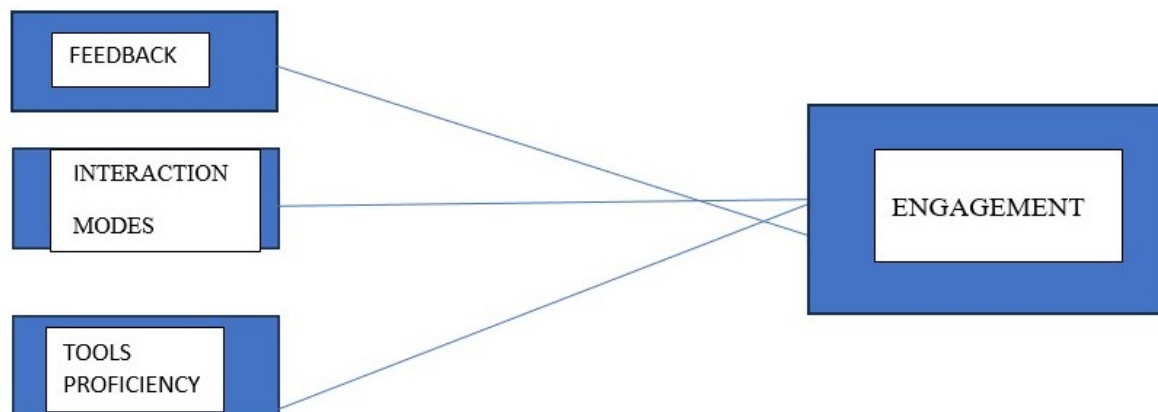
Pedagogical Adaptation and Faculty Workload

The transition to ERT imposed a significant "pedagogical tax" on faculty members. Changing from teacher-centred to student-centred digital models requires considerable preparation time, which many faculty members described as their primary challenge. According to Casacchia et al. (2021), faculty who were already proficient in digital technologies transitioned more smoothly, while others experienced steep learning curves that negatively impacted their ability to provide individualized support. Considering the significant time demands associated with creating asynchronous content, this is consistent with the themes that emerged from the focus group study mentioned in the paper.

Communication Affordances and Tool Proficiency

In the selection of communication tools, it is important to keep in mind that different platforms offer varying degrees of "advantages" for learning. While synchronous tools like video conferencing attempt to replicate the classroom experience, asynchronous tools like forums and email give students the opportunity to reflect. A contribution to this discourse is made by this study, which highlights the link between tool effectiveness and user proficiency. For example, the large effect size for email usage among proficient users ($d > 1.4$) may indicate that advanced learners utilize direct, asynchronous channels for complex academic tasks, while intermediate users rely more on structured forums for support.

Figure 1



Source: (Author's Perception)

The framework proposes that interaction modes, communication tools, and instructor feedback collectively influence student engagement during Emergency Remote Teaching.

3.0. Research Objectives:

- To explore faculty perceptions of pedagogical and interactional challenges associated with ERT.
- To examine students' experiences of interaction, feedback, collaboration, and communication tools during ERT.
- To report practical implications for improving crisis-responsive teaching and recommend solutions based on the themes generated from data analysis.

4.0 Research Methodology

Research Philosophy and Design

This study adopts an pragmatist research philosophy, which supports qualitative methods to address complex educational phenomena situated in real world contexts. Accordingly, a mixed methods research design was employed, combining a quantitative cross sectional survey with a qualitative focus group discussion. The mixed methods approach enabled methodological triangulation, enhancing the robustness and depth of the findings.

4.1. Research Context and Participants

The study was conducted at the University of Catania, Sicily, Italy within the faculties of Educational Sciences, Psychology, Pedagogy, and Sociology.

Quantitative Phase (Students)

A total of forty-six (46) undergraduate and postgraduate students were invited to participate in an online survey administered via Google Forms. Of these, twenty-three (23) students responded, and nineteen (19) complete questionnaires were retained for analysis after excluding incomplete responses. Given the modest sample size, the quantitative component is positioned as exploratory, with findings interpreted primarily through effect sizes rather than statistical significance alone. The student cohort comprised of Undergraduate, Postgraduate and Doctoral candidates who contributed to this study. Due to the small sample size, statistical results should be interpreted cautiously, with effect sizes serving as the primary indicators of practical significance.

Qualitative Phase (Faculty)

The qualitative component consisted of a focus group interview with 15 faculty members, including Associate Professors and Professors from the same disciplinary areas. This sample size aligns with qualitative research guidelines suggesting that thematic saturation typically occurs between 9 and 17 participants (Henink & Kaiser, 2022). The researcher used a purposive sampling technique to choose academic staff (Professors and Associate Professors in consultation with his supervisor who was an Associate Professor to obtain rich and meaningful description of the issue studied in this context.

4.2. Data Collection Instruments and Procedures

In the data collection process forty-six (46) students were invited to participate. Twenty-three (23) responses were received, of which nineteen (19) complete responses were retained for analysis.

Student Survey

The student questionnaire captured perceptions of:

- Learning mode preferences (ERT, online, hybrid, blended).
- Communication tool usage (e.g., email, forums, social media, videoconferencing).

- Interaction quality, collaboration, feedback, and response time

Quantitative data were analyzed using IBM SPSS Statistics (Version 29). Given the exploratory nature of the study and the small sample size ($n = 19$), multiple analytical approaches were used cautiously:

- Independent samples t tests (with Welch's correction where appropriate).
- Non parametric Mann-Whitney U tests as robustness checks.
- Effect sizes (Cohen's d and rank biserial correlations) as the primary indicators of practical significance.

Assumptions of homogeneity of variance were assessed using Levene's test. Variables violating assumptions were interpreted conservatively. The instrument was reviewed by a panel of five subject matter experts, including a specialist in educational research methodology, to establish content validity. Due to the limited sample size, internal consistency reliability statistics were not calculated..

Qualitative Analysis

Qualitative data were analyzed using thematic analysis following the six phase framework of Braun and Clarke (2022): familiarization, initial coding, theme development, review, definition, and reporting. Two researchers independently coded the transcripts manually and reconciled discrepancies through discussion, enhancing analytical rigor and credibility.

Focus Group Interview

A semi structured focus group protocol guided the faculty discussion, focusing on:

- Time demands in ERT
- Student–teacher interaction
- Pedagogical and technological challenges
- Student learning and engagement

The session lasted approximately 90 minutes and was moderated by an Associate Professor. With participants' informed consent, the discussion was audio recorded and transcribed verbatim.

Table 1
Summary of Methodological Approach

Criterion	Description
1.Research Philosophy	Pragmatism
2. Research Design	Mixed-Methods (Exploratory)
3.Research Strategy	Survey (students) and Focus groups (faculty)
5.Time Horizon	Cross sectional
6.Analysis Techniques /Procedures	Inferential statistics (exploratory), effect sizes, thematic analysis

Source: Autor perception.

This methodological framework provides a balanced and context sensitive examination of Emergency Remote Teaching at the University of Catania, allowing both statistical trends and experiential insights to inform conclusions and recommendations.

4.3. Integration Logic

•**Qualitative Branch (Faculty):** The human dimension reveals that pedagogical adaptation and time constraints are the main obstacles.

•**Quantitative Branch (Students):** It provides objective metrics with regard to how specific factors—such as feedback and the choice of learning tools—have an impact on learning.

•**Synthesis:** The final conclusion shows that faculty struggle with time, but students' engagement is directly influenced by faculty's speed and quality of feedback.

4.4. Ethical Considerations and Data Control

Ethical approval was obtained at the departmental level. All participants provided informed consent prior to participation. Confidentiality and anonymity were assured, and all audio recordings and transcripts were stored securely. Only aggregated results are reported, ensuring that individual participants cannot be identified.

5.0. Results and Discussion

This section presents the findings of the study in two parts. First, the qualitative results derived from the faculty focus group are reported thematically. Second, the quantitative findings from the student survey are presented. In line with the exploratory nature of the study and the small sample size, quantitative results are interpreted primarily through effect sizes rather than statistical significance alone. These findings reinforce interaction-focused online learning frameworks such as those proposed by Anderson (2011) and Picciano (2017).

Qualitative Findings: Faculty Perspectives on Emergency Remote Teaching

The qualitative findings provide contextual insights that help interpret the exploratory quantitative results presented below. The thematic analysis of the focus group discussion with 15 faculty members (Associate Professors and Professors) revealed four dominant themes related to Emergency Remote Teaching (ERT): time demands, interaction, pedagogical and technological challenges, and student learning.

Theme 1: Time Demands in ERT

Faculty members consistently emphasized that the time required to design and deliver online or distance education courses differs substantially from traditional face-to-face teaching. Several participants noted that asynchronous teaching, in particular, required extensive preparation and ongoing engagement beyond scheduled class hours. One participant observed:

"The time commitment for developing a distance or online course is not the same as for face-to-face classes; teachers must anticipate content clarity and student disengagement risks".

Others argued that ERT necessitated experimentation with new instructional strategies and continuous adaptation to evolving technologies, reinforcing time as a critical constraint in emergency contexts.

Theme 2: Interaction and Communication

Interaction was identified as a central concern in ERT. Faculty members reported that online interactions were often shorter and less spontaneous than face-to-face exchanges. Several participants emphasized that the quality of interaction depended heavily on the facilitator's pedagogical approach and technological competence. As one faculty member stated:

"Interaction depends on the teacher. During COVID, I maintained strong interaction with my students through deliberate engagement strategies".

Training in the effective use of digital platforms was viewed as essential for sustaining meaningful student-teacher communication.

Theme 3: Pedagogical and Technological Challenges

Participants highlighted difficulties in building relationships with students in the absence of physical presence. Challenges included explaining mistakes, providing individualized feedback, and ensuring student comprehension. Ideal class sizes and structured orientation for instructors were proposed as mitigating strategies. One participant noted:

"With written presentations, feedback takes longer and is often less effective. Learning from mistakes becomes more difficult".

Faculty members also reported that educators accustomed to teacher-centered approaches faced greater challenges during the abrupt transition to ERT.

Theme 4: Student Learning and Engagement

While some faculty perceived reduced engagement in online environments, most participants agreed that learning outcomes were strongly influenced by instructional design rather than delivery mode. Faculty noted that students' readiness and preparation for online learning significantly shaped engagement levels. A participant commented:

"The real issue is not technology, but the didactic approach required, which is very different from face-to-face teaching".

The lack of visual cues, such as students keeping cameras off, further hindered instructors' ability to assess understanding and engagement during ERT sessions.

Quantitative Findings: Student Survey Results

Quantitative data were collected from 19 students and analyzed using IBM SPSS Statistics (Version 29). Given the limited sample size, results are presented as exploratory, with emphasis on practical significance through effect size measures.

Learning Interaction and Feedback Variables

Independent samples analyses indicated that several variables demonstrated meaningful effect sizes despite not reaching conventional levels of statistical significance:

- **Instructor feedback** showed a large positive effect (Cohen's $d \approx 0.81$), indicating that timely and effective feedback substantially enhanced students' learning experiences.

- **Collaborative competencies** demonstrated a moderate-to-large effect ($d \approx 0.61$), suggesting that collaboration played an important role in student engagement during ERT.

- **Delayed peer responses** exhibited a moderate negative effect ($d \approx -0.61$), implying that slow interaction among peers may reduce motivation and satisfaction. Variables such as group discussion quality, peer satisfaction, and overall online interaction satisfaction displayed small effect sizes, indicating limited practical differences between comparison groups.

Communication Tool Usage by Proficiency Level

Exploratory comparisons between intermediate and proficient users revealed distinct usage patterns across communication tools:

- **Email usage** differed substantially between groups, with proficient users reporting higher usage (large effect size, $d > 1.4$), highlighting email as a key communication channel for advanced users.

- **Forums** were used more frequently by intermediate users, with a large effect size indicating their importance as support and help-seeking platforms.

- **Social media tools** showed a large practical effect favoring proficient users, suggesting increased reliance on informal digital communication channels among more experienced users.

Other tools, including wikis, workshops, video conferencing, podcasts, chat, Google Docs, and telephone communication, demonstrated small to moderate effect sizes, indicating broadly similar usage patterns across proficiency levels. Overall, the qualitative findings underscore the centrality of pedagogical adaptation, instructor engagement, and feedback quality in emergency remote teaching. The quantitative findings complement these insights by demonstrating that, even in small samples,

instructor feedback, collaboration, and communication tool selection exert meaningful practical influence on students' learning experiences. These results provide an integrated empirical foundation for the discussion and recommendations that follow. Data was analyzed using inferential statistics and the results are as follows:

Table 2
Learning Interaction and Feedback (Student Surveys)

Item	Statistic	df	p	Mean Diff.	Effect Size (Cohen's d)
Instructor Feedback	Student's t	17	0.096	0.5	0.809 (Large)
Collaborative Competencies	Student's t	17	0.2	0.367	0.612 (Moderate)
Peer Reply Latency	Student's t	17	0.204	-0.556	-0.607 (Moderate)
Online Interaction Satisfaction	Student's t	17	0.45	0.3	0.356 (Small)
Group Leader Performance	Student's t	17	0.457	0.322	0.349 (Small)
Active Leadership	Student's t	17	0.61	0.244	0.239 (Small)
Peer Satisfaction	Student's t	17	0.616	0.211	0.234 (Small)
Group Discussion Quality	Student's t	17	0.699	0.167	0.180 (Small)

Source: Autor perception.

Table 3
Communication Tool Usage by Proficiency (Student Survey)

Communication Tool	Statistic	df	p	Mean Difference	Effect Size (Cohen's d)
Emails	Student's t	17	0.036*	1.083	1.436 (Large)
Forums	Student's t	17	0.067	-1.208	1.230 (Large)
Social media	Student's t	17	0.106	0.979	1.075 (Large)
Wiki	Student's t	17	0.246	0.833	0.756 (Moderate)
Skype	Student's t	17	0.268	0.708	0.721 (Moderate)
Chat	Student's t	17	0.418	0.438	0.522 (Moderate)
Workshops	Student's t	17	0.525	0.417	0.409 (Small)
Google Docs	Student's t	17	0.628	0.25	0.311 (Small)
Podcasts	Student's t	17	0.856	-0.125	0.116 (Small)
Telephone	Student's t	17	0.955	0.042	0.036 (Small)
Video Conferencing	Student's t	17	1	0	0.000 (None)
Significant at p <.05					

Source: Autor perception.

The findings of this study reinforce the conceptual distinction between Emergency Remote Teaching and planned online education. Faculty accounts underscore that pedagogical adaptation, rather than technology alone, represents the primary challenge in crisis-driven teaching contexts. Increased time demands and the need for continuous experimentation echo findings from prior European studies (Casacchia et al., 2021; Zagkos et al., 2022). The quantitative results complement these insights by demonstrating that instructor feedback and collaborative engagement exert substantial practical influence on students' learning experiences, even within constrained and temporary teaching arrangements. These findings align with established interaction-focused learning theories (Anderson, 2011; Picciano, 2017) and recent empirical work highlighting feedback as a critical success factor in remote education (De Paola et al., 2022). Importantly, the study suggests that negative perceptions of ERT should not be interpreted as evidence against digital learning per se, but rather as reflections of emergency conditions, limited preparation, and uneven digital readiness. The study contributes to the ERT literature by empirically reinforcing the distinction between emergency-driven and designed digital learning. It supports

calls for context-sensitive evaluation frameworks that account for crisis conditions.

5.1. Practical Implications

The findings reinforce the distinction between ERT and planned online education. While technology is the medium, pedagogical adaptation is the primary challenge. Universities should invest in:

- Faculty development focused on online pedagogy rather than tools alone.
- Clear institutional guidelines for crisis-responsive teaching.
- Feedback-oriented instructional design.
- Flexible communication strategies tailored to student proficiency levels.

5.2. Policy Implications

At a policy level, the findings underscore the importance of embedding digital preparedness and pedagogical resilience into institutional quality assurance frameworks.

6.0 Limitations and Future Research

The study's exploratory nature and small sample size limit generalizability. Future research should employ larger, multi-institutional samples and longitudinal designs to examine the long-term pedagogical impact of ERT and its integration into post-pandemic hybrid models.

7.0. Conclusion and Final Recommendations

The study concludes that the transition to Emergency Remote Teaching at the University of Catania was more than a technological shift; it was a pedagogical crisis. While the Null Hypothesis (H_0) is rejected due to significant differences in communication tool usage the most critical finding lies in the large effect size of instructor feedback ($d = 0.809$).

Institutional Action Items:

• **Standardized Feedback Protocols:** Given the moderate negative impact of delayed responses ($d = -0.607$), departments should establish expected response windows.

• **Proficiency-Based Tool Selection:** Support should be tiered, as proficient users rely on emails and social media, while intermediate users require the structured support of forums.

• **Pedagogical vs. Technological Training:** Faculty development should shift focus from "how to use a tool" to "how to design interaction" in digital spaces.

Emergency Remote Teaching enabled institutional continuity during an unprecedented global crisis but simultaneously exposed structural and pedagogical vulnerabilities in higher education. This study demonstrates that interaction quality, instructor feedback, and pedagogical design play decisive roles in shaping ERT experiences. Lessons learned from ERT should inform the development of resilient, inclusive, and pedagogically sound learning environments capable of responding effectively to future disruptions.

Acknowledgements: The author gratefully acknowledges the supervision of Dr. Paola Clara Leotta at the University of Catania. IBM SPSS Statistics (Version 29) was used for data analysis.

Conflict of Interest: The author declares no conflict of interest whatsoever for this article.

Ethical Norms: Ethical approval was obtained from the relevant departmental

authority at the University of Catania. All participants provided informed consent prior to participation.

REFERENCES

- Anderson, T. (2011). *The theory and practice of online learning*. (2nd ed.). AU Press. <https://doi.org/10.15215/aupress/9781897425084.01>
- Bozkurt, A., Jung, I., Xiao, J., Vladimirschi, V., Schuer, R., Egorov, G., & Paskevicius, M. (2020). A global outlook to the interruption of education due to COVID-19 pandemic: Navigating in a time of uncertainty and crisis. *Asian Journal of Distance Education*, 15(1), 1–126. <https://doi.org/10.5281/zenodo.3878572>
- Braun, V., & Clarke, V. (2022). Conceptual and design thinking for thematic analysis. *Qualitative Psychology*, 9(1), 3–26.
- Casacchia, M., Cifone, M. G., Giusti, L., Fabiani, L., Gatto, R., Lancia, L.,...& Roncone, R. (2021). Distance education during COVID-19: An Italian survey on the university.
- De Paola, M., Gioia, F., & Scoppa, V. (2022). Online teaching, procrastination and students' achievement: Evidence from COVID-19 induced remote learning. *Journal of Economic Behavior & Organization*, 198, 339–354. <https://docs.iza.org/dp15031.pdf>
- Ferri, F., Grifoni, P., & Guzzo, T. (2020). Online learning and emergency remote teaching: Opportunities and challenges in emergency situations. *Societies*, 10(4), Article 86. <https://doi.org/10.3390/soc10040086>
- Foster, C. (2024). Methodological pragmatism in educational research: From qualitative-quantitative to exploratory-confirmatory distinctions. *International Journal of Research & Method in Education*, 47(1), 4–19. <https://doi.org/10.1080/1743727X.2023.2210063>
- Hennink, M., & Kaiser, B. N. (2022). Sample sizes for saturation in qualitative research: A systematic review of empirical tests. *Social Science & Medicine*, 292, 114523
- Mehta, K. J., Aula-Blasco, J., & Mantaj, J. (2024). University students' preferences for learning modes after COVID-19 lockdowns. *PLoS ONE*, 19(7), e0296670.
- Oliveira, G., Grenha Teixeira, J., Torres, A., & Morais, C. (2021). An exploratory study on emergency remote education during COVID-19. *British Journal of Educational Technology*, 52(4), 1357–1376. <https://doi.org/10.1111/bjet.13112>
- Picciano, A. G. (2009). Blending with purpose: The multimodal model. *Journal of Asynchronous Learning Networks*, Volume 13: Issue 1. <https://files.eric.ed.gov/fulltext/EJ837540.pdf>

Picciano, A. G. (2017). Theories and frameworks for online education: Seeking an integrated model. *Online Learning*, 21(3), 166–190. <https://eric.ed.gov/?id=EJ1154117>

Shim, T. E., & Lee, S. Y. (2020). College students' experience of emergency remote teaching due to COVID-19. *Children and Youth Services Review*, 119, Article 105578. <https://doi.org/10.1016/j.childyouth.2020.105578>

Tamborra, V. (2021). Emergency distance learning in the Italian university. *Research on Education and Media*, 13(1), 37–44. <https://doi.org/10.2478/rem-2021-0009>

Yu, Q., Yu, K., Li, B., & Wang, Q. (2023). Effectiveness of blended learning on students' learning performance: A meta-analysis. *Journal of Research on Technology in Education*, 1–22. <https://doi.org/10.1080/15391523.2023.2264984>

Zagkos, C., Kyridis, A., Kamarianos, I., Dragouni, K. E., Katsanou, A., Kouroumichaki, E., ... & Stergianopoulos, E. (2022). Emergency remote teaching and learning in Greek universities during the COVID-19 pandemic: The attitudes of university students. *European Journal of Interactive Multimedia and Education*, 3(1), Article e02207. <https://doi.org/10.30935/ejimed/11494>