

***Enhancing Online Education:
A Practical Approach to Empower Educator in Email Communication***

Ziwei Wang, Whitecliffe College, New Zealand

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Abstract

The global shift towards online education, precipitated by the Covid-19 pandemic, has revealed critical challenges stemming from a lack of preparedness. As we approach a post-pandemic era, it is imperative to reimagine education within the digital realm to fortify our educational systems against future uncertainties. A particular concern is student engagement and interaction, requiring educators to devise innovative strategies for active participation. This research serves as a foundational exploration of online education, with a specific emphasis on empowering educators with practical tools to navigate this evolving landscape. By providing a structured and interactive training system, along with an email communication guide for teachers in the online learning environment as a work product, through a comprehensive literature review, this research contributes to the enhancement of the online learning experience for both educators and students. The platform aims to foster effective communication skills among educators, ultimately creating a more engaging learning environment.

Keywords: Online Education, Student Engagement, Educator Empowerment, Educational Technology Innovation, Remote Learning Challenges

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Introduction

The global shift to online education, triggered by the Covid-19 pandemic, exposed substantial challenges due to unpreparedness (Abushammala et al., 2021; UNESCO, 2020). As we approach a post-pandemic era, there's a critical need to rethink education digitally, ensuring resilience to future uncertainties. Instructors must creatively engage students, making this research a foundational exploration of online education, specifically focusing on empowering educators with tools for navigating this evolving landscape.

Problem Statement: Pre-pandemic education relied on face-to-face interactions, immediate feedback, and nuanced in-person communication. The shift to online platforms necessitates a paradigm shift, with a key concern being communication, especially through emails. Online communication, often asynchronous, lacks the immediacy of face-to-face interactions, emphasizing the significance of effective email communication.

Email Communication: Emails are pivotal in online education, serving as a primary channel for information dissemination, feedback, and discussions. This research focuses on email communication due to its pervasive role and challenges. The asynchronous nature demands nuanced skills from educators, considering potential misinterpretations and delays.

Research Question: How can educators acquire essential skills for seamless online instruction, particularly in email communication?

Objective: This research aims to address challenges in online communication, emphasizing emails, by developing a structured training system. The goal is to empower instructors for effective communication with online learners.

Review of Literature

The global shift to remote learning due to the COVID-19 pandemic has disrupted educational institutions, posing challenges for students and educators worldwide (Abushammala et al., 2021; Khalil et al., 2021; Nassr et al., 2020; Thapaliya, 2023). Amidst these challenges, an opportunity has emerged to reshape education through innovative practices that can positively impact the system (Rapanta, 2021). This literature review aims to identify effective online education practices, including building community, supporting well-being, personalized feedback, meeting diverse learner needs, refining digital platforms, and adding curriculum flexibility (Dabbagh & Kitsantas, 2012; Liu et al., 2020; Zhu et al., 2020; Tang, 2022; Thabrew et al., 2023). Implementing these strategies has the potential to enhance student engagement, motivation, and learning outcomes in the online environment.

The COVID-19 pandemic significantly disrupted global education, leading to widespread closures and challenges (Abushammala et al., 2021; Khalil et al., 2021; Nassr et al., 2020; Thapaliya, 2023). A study by Khalil, Humayun, and Jhanjhi (2021) provides an overview of the pandemic's impact on the educational system, offering insights into challenges faced and recommendations for policymakers. The abrupt transition to remote learning affected 1.6 billion learners in over 190 countries, with financial viability becoming a concern for private institutions. Thapaliya's study (2023) focuses on New Zealand, exploring lecturers' experiences during emergency remote teaching and highlighting the need for crisis management plans (Thapaliya, 2023).

In Australia and New Zealand, Pather et al. (2020) investigated the challenges faced by anatomy education during the pandemic, emphasizing the need for community care, effective communication, and flexibility in managing the transition. Abushammala and Manchiryal's study (2021) in Oman surveyed students from post-secondary private institutions, revealing discontent with online education arrangements and financial challenges. Malaysian universities also faced challenges due to students' lack of readiness for online learning (Nassr et al., 2020).

Grewenig et al. (2020) highlighted the impact of teacher support on low-achieving students, revealing a significant reduction in daily learning time. Tang's examination (2022) emphasized the unequal impact of the pandemic on diverse backgrounds and proposed strategies for flexible curricula and enhanced support.

Rapanta et al.'s article (2021) addressed post-pandemic challenges in higher education, suggesting a shift towards innovative teaching and learning approaches. Effective practices identified include creating a sense of community, providing personalized support, and considering diverse learner needs.

In-depth studies by Rovai (2002), Shea et al. (2006), Thabrew et al. (2023), Dabbagh and Kitsantas (2012), Zhu et al. (2022), and Liu et al. (2016) delve into specific practices. These include fostering a sense of community, instructor and peer interactions, personalized support, and addressing diverse learner needs. Blended learning, feedback, and formative assessment are also identified as effective approaches (Rovai, 2002; Shea et al., 2006; Dabbagh & Kitsantas, 2012; Zhu et al., 2022; Liu et al., 2016; Hattie & Timperley, 2007; Nicol & Macfarlane-Dick, 2007).

In conclusion, the literature review supports the adoption of effective practices in online education to overcome the challenges posed by the COVID-19 pandemic. These practices include building a sense of community, providing personalized support, addressing diverse learner needs, and ensuring timely and effective responses. By incorporating these strategies, educators can enhance the quality of online education and improve student satisfaction in the post-pandemic era.

Rationale

The literature review highlights the transformative impact of COVID-19 on education, emphasizing the shift to online learning (Abushammala et al., 2021; Khalil et al., 2021; Nassr et al., 2020; Rapanta, 2021; Thapaliya, 2023). Effective online education requires a nuanced approach, with communication playing a crucial role (Dabbagh & Kitsantas, 2012; Liu et al., 2020; Zhu et al., 2022).

Recognizing the importance of timely and effective email communication in online education, our research focuses on a systematic training system tailored to email interactions. This system includes simulated scenarios and sample emails as references, aligning with best practices (Thapaliya, 2023; Dabbagh & Kitsantas, 2012).

The literature also emphasizes the need for increased investment in online education resources, particularly in instructor training. Our research aims to address this gap by providing instructors with skills and confidence through a structured training system centered

on email communication, aiming to enhance student engagement, and learning outcomes (Rovai, 2002; Shea, Li, & Pickett, 2006).

The research presents a prototype email training program, serving as an initial iteration for educators. While not intended for full-scale deployment, this prototype allows testing and evaluation of key features, with subsequent phases focusing on refinement, additional features, and rigorous testing for real-world effectiveness and usability in educational settings. Ultimately, the study contributes to enhancing the online learning experience for both educators and students, emphasizing the critical importance of investing in instructor training in the context of online education.

Method

Scenarios

The following 12 scenarios presented in the email communication training system as shown in Table 1 are thoughtfully designed to address a wide range of challenges identified in the literature. By providing instructors with the tools and strategies to navigate these scenarios, the training system equips them to effectively communicate and support students in the evolving landscape of online education.

These scenarios align closely with the findings of various studies, reflecting the multifaceted nature of the issues faced during the COVID-19 pandemic. For instance, the scenario involving unequal access to education mirrors the real-world experiences of students like Isabella, Alex, and Jamal, who face disparities in access to technology and internet connectivity (Abushammala et al., 2021; Khalil et al., 2021; Nassr et al., 2020; Thapaliya, 2023). By guiding instructors in providing tailored support and alternative solutions, the training system empowers them to address the specific needs of students with limited resources, ultimately fostering inclusivity and equal opportunities for learning.

Similarly, scenarios centered around low-achieving students' struggles resonate with the findings of Grewenig et al. (2020) and emphasize the importance of targeted support for students facing academic challenges. Through these scenarios, the training system equips instructors with effective strategies to motivate and guide struggling students towards improved performance, aligning with the literature's call for personalized support (Grewenig et al., 2020).

Furthermore, scenarios addressing physical and psychological readiness align with studies by Thabrew et al. (2023) and Tang (2022), highlighting the significant impact of mental well-being and preparedness on students' learning experiences. The training system prepares instructors to provide valuable resources and guidance to students like Sophia, Alex, and Emily, thereby promoting a supportive and nurturing online learning environment (Thabrew et al., 2023; Tang, 2022).

Lastly, the scenarios related to the loss of hands-on experiences echo the sentiments of students like Ethan, Jay, and Amy, who grapple with the challenges of transitioning to virtual lab environments (Pather et al., 2020). By introducing instructors to innovative solutions and resources, the training system empowers them to facilitate meaningful and engaging learning experiences, even in virtual settings, aligning with the literature's emphasis on refining digital platform structures and resources (Liu et al., 2016).

The tips provided for addressing the loss of hands-on experiences for students, including Ethan, Jay, and Amy, align with the literature's recognition of the challenges posed by the shift to online learning, particularly in fields requiring practical application (Pather et al., 2020). Acknowledging the students' frustration and disappointment reflects the literature's emphasis on understanding and empathizing with the unique challenges students face in virtual learning environments (Rapanta et al., 2021). The suggestions to supplement virtual lab experiences with resources such as interactive simulations and virtual platforms resonate with the literature's call for innovative approaches to replicate hands-on experiences in online settings (Liu et al., 2016). Encouraging students to seek out virtual communities or forums reflects the literature's recommendation for creating a sense of community and providing avenues for peer collaboration and support (Rovai, 2002; Dabbagh & Kitsantas, 2012). Overall, the tips aim to address the specific challenges of students in disciplines heavily reliant on hands-on experiences by offering alternative solutions and fostering a supportive online learning environment.

In conclusion, the scenarios within the email communication training system are meticulously designed to reflect the complex realities of online education. They draw on the insights gleaned from the literature review, providing instructors with practical tools to address a wide array of challenges. By immersing instructors in these scenarios, the training system equips them with the skills and confidence necessary to communicate effectively and support students in the dynamic landscape of online education. This approach not only enhances the online learning experience but also contributes to the broader goal of creating an inclusive and engaging educational environment.

Scenario	Student Profile	Challenges	Tips for Instructors	Literature Emphasis
Unequal Access to Education	20-year-old Isabella from a rural area	Limited access to high-speed internet and technology	- Acknowledge Isabella's situation - Offer alternative solutions for accessing course materials - Suggest local or community resources - Consider alternative assignments	Addressing unequal access to education during the COVID-19 pandemic (Rapanta et al., 2021; Thapaliya, 2023)
Unequal Access to Education	Dedicated Alex with a slower laptop	Challenges in completing assignments due to slow laptop	- Advise closing unnecessary applications - Recommend upgrading memory or storage - Suggest utilizing offline resources or local libraries	Innovative approaches and community support in overcoming access challenges (Rapanta, 2021; Thabrew et al., 2023)
Unequal Access to Education	Motivated Jamal with limited access to technology	No personal computer or reliable internet connection	- Acknowledge Jamal's situation - Offer alternative solutions for completing assignments - Provide guidance on optimizing learning with available resources - Recommend offline tools and inquire about institutional technological resources	Flexibility and accommodation of diverse learning styles (Rovai, 2002; Liu et al., 2020)
Low-Achieving Students' Struggles	25-year-old Amy, a female student	Meeting passing grade but quiet with overdue assignments	- Express understanding and concern - Inform about late submission policy - Offer support and encourage communication	Personalized support and addressing individual challenges in online education (Thapaliya, 2023; Grewenig et al., 2020)

Low-Achieving Students' Struggles	18-year-old Sam, a non-binary student	Missed deadline and incomplete submission	- Address situation with empathy and encouragement - Communicate issues with the submission - Offer specific suggestions for improvement - Provide resources or support options	Creating a supportive and empathetic learning environment (Rapanta et al., 2021; Dabbagh & Kitsantas, 2012)
Low-Achieving Students' Struggles	20-year-old Alex, a male student	Consistently submitting below-average assignments	- Express concern about performance - Encourage seeking help and additional resources - Provide specific suggestions for improvement	Proactive strategies to address challenges faced by low-achieving students (Grewenig et al., 2020; Zhu et al., 2022)
Physical and Psychological Readiness	Sophia, 32-year-old student with anxiety	Struggling with online learning isolation	- Provide mental health resources - Encourage routine with self-care practices and social connections	Recognizing and supporting diverse well-being needs of learners (Rapanta et al., 2021; Thabrew et al., 2023)
Physical and Psychological Readiness	Alex, 23-year-old non-binary fitness instructor	Difficulty adjusting to sedentary online learning	- Offer tailored advice on effective workouts - Provide tips on maintaining healthy posture	Recognizing the impact of online learning on physical health (Rapanta et al., 2021)
Physical and Psychological Readiness	Emily, 28-year-old single parent	Overwhelmed by parenting responsibilities	- Acknowledge unique situation - Provide practical tips on time management and self-care	Addressing challenges faced by students with diverse responsibilities (Rapanta et al., 2021; Dabbagh & Kitsantas, 2012)
Loss of Hands-on Experiences	Ethan, 24-year-old chemistry major	Difficulty grasping concepts without hands-on experience	- Acknowledge frustration - Provide resources for virtual labs and simulations - Encourage connecting with peers facing similar challenges	Recognizing the importance of practical experiences in learning (Rapanta et al., 2021)
Loss of Hands-on Experiences	Jay, 22-year-old engineering student	Struggling to translate theory into practice	- Express understanding - Suggest virtual engineering platforms - Encourage participation in virtual communities	Emphasizing the importance of practical application in engineering (Rapanta et al., 2021)
Loss of Hands-on Experiences	Amy, 25-year-old biology major	Struggling to replicate hands-on experiences online	- Empathize with disappointment - Recommend virtual lab platforms - Encourage engagement in online biology communities	Acknowledging the value of hands-on experiences in specific fields (Rapanta et al., 2021)
Physical and Psychological Readiness	Sophia, 32-year-old student with anxiety	Struggling with online learning isolation	- Provide mental health resources - Encourage routine with self-care practices and social connections	Recognizing and supporting diverse well-being needs of learners (Rapanta et al., 2021; Thabrew et al., 2023)
Physical and Psychological Readiness	Alex, 23-year-old non-binary fitness instructor	Difficulty adjusting to sedentary online learning	- Offer tailored advice on effective workouts - Provide tips on maintaining healthy posture	Recognizing the impact of online learning on physical health (Rapanta et al., 2021)

Physical and Psychological Readiness	Emily, 28-year-old single parent	Overwhelmed by parenting responsibilities	- Acknowledge unique situation - Provide practical tips on time management and self-care	Addressing challenges faced by students with diverse responsibilities (Rapanta et al., 2021; Dabbagh & Kitsantas, 2012)
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Table 1: Scenarios and Tips for Addressing Key Challenges in Online Education

Sample Emails and Justification

1. Unequal Access to Education

Unequal access to technology and high-speed internet is a prevalent issue, particularly in rural areas. This is consistent with findings from the literature review which highlight the challenges faced by students in remote or underserved areas (Abushammala et al., 2021; Khalil et al., 2021; Nassr et al., 2020). Providing guidance on how to overcome these challenges is crucial in ensuring equitable educational opportunities. Additionally, suggesting alternative assignments or assessments is in line with recommendations from previous studies that emphasize the need for flexibility in accommodating diverse learning environments (Dabbagh & Kitsantas, 2012; Liu et al., 2020; Zhu et al., 2022).

Student	Subject	Email Content
Isabella	Addressing Access Challenges for Effective Learning	<p>Hi Isabella,</p> <p>I hope this message finds you well. I understand that you're facing challenges with limited access to high-speed internet and technology in your area, which is impacting your ability to fully participate in our online course.</p> <p>To help you overcome these access challenges, here are some suggestions:</p> <p>Offline Materials: I recommend downloading course materials during periods of higher connectivity. This way, you can access them offline when needed.</p> <p>Local Resources: Explore if there are any local resources or community centers that provide access to computers and high-speed internet. Some libraries also offer free usage of laptops and the internet.</p> <p>Optimize Learning: Prioritize assignments and activities that don't heavily rely on online resources. You can focus on readings, written assignments, and projects that can be completed with minimal internet usage.</p> <p>If you have any specific concerns about course activities, please let me know, and we can explore alternative options. Remember, your dedication to learning is commendable, and I'm here to support you in any way I can.</p> <p>Best regards, XXX</p>
Alex	Optimizing Your Laptop for Smooth Online Learning	<p>Hi Alex,</p> <p>I hope you're doing well. I understand that you've been experiencing challenges with your laptop's performance, which is affecting your online learning experience. Here are some tips to help optimize your laptop for smoother online learning:</p> <p>Close Unnecessary Applications: Make sure to close any unnecessary applications and browser tabs while working on course materials. This can help improve your laptop's performance.</p> <p>Clear Browser Cache: Regularly clearing your browser's cache can help prevent slowdowns when accessing online resources.</p> <p>Consider Upgrades: If possible, consider upgrading your laptop's memory or storage. This can significantly enhance its performance.</p> <p>Additionally, local libraries often provide free usage of laptops and internet, which can be a helpful alternative. If you have any further questions or need additional support, please don't hesitate to reach out. Your dedication to your studies is commendable, and I'm here to assist you in any way I can. Best regards, XXX</p>

Jamal	Overcoming Technological Challenges for Successful Learning	<p>Hi Jamal,</p> <p>I hope this message finds you in good health. I understand that you're facing challenges due to limited access to technology, which is impacting your ability to complete assignments and participate in online activities. Here are some strategies to help you overcome these obstacles:</p> <p>Priority Tasks: Prioritize assignments and activities that can be completed without the need for a personal computer or stable internet connection.</p> <p>Offline Tools: Utilize offline tools for studying, such as textbooks, printed materials, or handwritten notes.</p> <p>Borrowing Resources: Inquire if there are any technological resources available through the institution, such as loaner laptops or tablets, that you can borrow.</p> <p>I want to assure you that your determination to succeed is admirable, and I'm committed to working together to find solutions that support your learning journey. If you have any specific concerns or need further guidance, please feel free to let me know.</p> <p>Best regards, XXX</p>
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Table 2: Sample Emails for Scenarios of Unequal Access to Education

2. Low-Achieving Students' Struggles

Recognizing and addressing the struggles of low-achieving students is vital for their academic progress. This aligns with research indicating that providing targeted support and feedback can significantly impact student performance (Hattie & Timperley, 2007; Nicol & Macfarlane-Dick, 2007). Encouraging resubmission of assignments and providing specific suggestions for improvement is consistent with studies emphasizing the importance of formative assessment and self-regulated learning (Nicol & Macfarlane-Dick, 2007).

Student	Email Subject	Email Body
Amy	Supporting Your Progress in the Course	<p>Hi Amy,</p> <p>I hope this message finds you well.</p> <p>I noticed that you've recently faced some challenges with the course assignments. It's completely normal to encounter difficulties, and I'm here to support you.</p> <p>If you're experiencing specific issues or have questions about the material, please don't hesitate to reach out. Additionally, remember that there are resources available, such as virtual office hours and study groups, to provide extra assistance.</p> <p>Keep up the good work, and let's work together to ensure your success in the course.</p> <p>Best regards, XXX</p>
Sam	Feedback on Your Recent Assignment	<p>Hi Sam,</p> <p>I hope you're doing well. I wanted to discuss the recent assignment you submitted. While the first half of the assignment was well-done, I noticed that the second half was missing. It's crucial to submit complete assignments to demonstrate your understanding of the material.</p> <p>I encourage you to review the assignment guidelines and ensure all components are addressed.</p> <p>If you have any questions or need further clarification, please feel free to reach out. I'm here to help you succeed in the course.</p> <p>Best regards, XXX</p>

Alex	Supporting Your Academic Progress	<p>Hi Alex, I hope this message finds you well. I wanted to discuss your recent quiz results, which indicate a struggle with understanding the material. It's important to address any challenges you're facing early on. I encourage you to attend virtual office hours or utilize additional resources available to you. Regular engagement with the course material can greatly enhance your understanding. If there are specific topics you find difficult, please let me know. I'm here to assist you in any way I can. Best regards, XXX</p>
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Table 3: Sample Emails for Scenarios of Low-Achieving Students' Struggles

3. Physical and Psychological Readiness

Online learning can present unique challenges, especially for students dealing with mental health concerns, physical health issues, or other personal circumstances. This is supported by research indicating that the shift to online learning can impact students' mental well-being (Thabrew et al., 2023; Rapanta et al., 2021). Providing resources and support for mental and physical well-being acknowledges the holistic nature of student success. Tailoring advice to address specific situations, such as anxiety or the need for physical activity, demonstrates a proactive approach to supporting students' overall readiness for online learning.

Student	Email Subject	Email Body
Sophia	Supporting Your Well-Being in Online Learning	<p>Hi Sophia, I hope this message finds you in good spirits. I wanted to address the concerns you've shared about feeling isolated and anxious during our online course. Your well-being is a top priority, and I'm here to support you. I recommend establishing a routine that includes self-care practices, regular breaks, and opportunities for social connection, even in a digital environment. Additionally, please remember that there are mental health resources available both within our institution and externally. If you ever need someone to talk to or additional resources, please don't hesitate to reach out. Your success and well-being are important to us. Take care, XXX</p>
Alex	Balancing Fitness and Studies in Online Learning	<p>Hi Alex, I hope this message finds you well. It's completely normal to find it challenging to adjust to a more sedentary lifestyle while engaging in online learning. To maintain your physical health, I recommend incorporating short, effective workouts into your routine. Even a brief daily walk or simple stretches can make a significant difference. Additionally, paying attention to your posture during extended study sessions can help alleviate discomfort. Remember, your well-being is important. Finding a balance between fitness and studies will contribute to your overall success. Best regards, XXX</p>

Emily	Creating a Balanced Routine for Success	Hi Emily, I hope this message finds you managing your responsibilities with grace. Balancing parenting and studies is undoubtedly a challenge, but it's also a tremendous achievement. To help you navigate this, I recommend establishing a structured routine that prioritizes essential tasks. Setting aside specific study times and moments for self-care is crucial. Additionally, don't hesitate to seek support from friends, family, or community resources. Your determination is admirable, and I'm here to support you every step of the way. Warm regards, XXX
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Table 4: Sample Emails for Scenarios of Physical and Psychological Readiness

4. Loss of Hands-On Experiences

For students in fields requiring hands-on experience, the shift to online learning can be particularly challenging. This aligns with findings from the literature review that highlight the impact of the pandemic on practical learning experiences (Pather et al., 2020; Grewenig et al., 2020). Acknowledging the importance of practical application and providing alternative resources, such as virtual labs or simulations, shows an understanding of the unique needs of these students. Offering recommendations for virtual platforms and communities also encourages active engagement and collaborative learning experiences.

Student	Email Subject	Email Body
Ethan	Enhancing Your Virtual Lab Experience	Hi Ethan, I hope this message finds you well. I understand that you were looking forward to conducting experiments in our university's well-equipped chemistry laboratory. While online learning has shifted the way we approach experiments, there are still valuable resources available. I recommend exploring interactive simulations and virtual lab platforms that closely mimic real experiments. These platforms can provide a hands-on experience even in a digital environment. Additionally, connecting with other students facing similar challenges through online chemistry communities or forums can be a great way to share experiences and knowledge. If you have any specific questions or need guidance on virtual labs, please don't hesitate to reach out. I'm here to help you succeed. Best regards, XXX
Jay	Bridging Theory and Practice in Engineering	Hi Jay, I hope you're doing well. It's completely understandable that you're grappling with translating theoretical concepts into practice, especially with our labs moving online. To help bridge this gap, I recommend exploring virtual engineering platforms and simulations that offer hands-on experimentation and problem-solving experiences. These platforms can provide valuable practical exposure even in a digital format. Additionally, I encourage you to join virtual engineering communities or forums where you can collaborate with peers on projects and assignments. Sharing experiences and knowledge with others can be extremely beneficial. If you have specific questions or need guidance on virtual engineering tools, please reach out. I'm here to assist you in any way I can. Best regards, XXX

Amy	Maximizing Your Online Biology Experience	<p>Hi Amy, I hope this message finds you eager to explore the world of biology. I understand that you were anticipating hands-on experiments in our advanced biology course, and the shift to online labs has been a challenge. To enhance your understanding, I recommend exploring virtual lab platforms offering interactive simulations and experiments that closely resemble real-world scenarios. Engaging with online biology communities or forums can also provide opportunities to discuss concepts and experiments with fellow students. If you have any specific questions or need guidance on virtual biology labs, please feel free to reach out. I'm here to help you succeed in your studies.</p> <p>Best regards, XXX</p>
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Table 5: Sample Emails for Scenarios of Loss of Hands-on Experiences

Technological Framework

The development of the email simulator strictly adhered to a minimalist technological framework, utilizing only JavaScript (JS), Cascading Style Sheets (CSS), the Bootstrap framework and Hyper Text Markup Language (HTML). This selection was based on its simplicity, accessibility, and broad compatibility, ensuring the widest possible user base.

User Interface Design

The user interface (UI) was designed with a focus on simplicity and intuitiveness. Clear navigation, easily distinguishable elements, and concise instructions were prioritized to create an accessible learning environment for instructors.

To augment the training experience, the email simulator incorporates a Random Scenario Generator feature. This functionality allows users to emulate the unpredictability of real-world scenarios. By clicking the "Generate Random Scenario" button, instructors can practice their communication and problem-solving skills in response to a wide array of challenges that they may encounter while interacting with students online. This feature is designed to provide a dynamic learning experience and ensure that educators are well-prepared for any situation they may face in the online educational landscape.

In addition, a sample email that closely aligns with the principles outlined in the literature review will be displayed after users craft their own email responses. This serves as an invaluable guide, offering instructors a concrete example of effective communication based on established best practices and research-backed strategies.

Hosting and Deployment

To maintain a cost-effective approach and ensure accessibility to a global audience, the email simulator was hosted on the GitHub platform (Wang, 2023). This decision was founded on GitHub's robust hosting capabilities, version control features, and widespread adoption in the developer community. Additionally, the public repository fostered collaborative development and provided transparency in the project's evolution. This choice aligns with modern development practices, enabling Continuous Integration (CI) and Continuous Deployment (CD) pipelines through GitHub Actions. This integration streamlines the process of testing and deploying new updates, ensuring a seamless user experience and facilitating rapid iteration in response to user feedback. By leveraging GitHub for both hosting and CI/CD, the email simulator benefits from a well-established platform that supports efficient development

workflows and global accessibility. This approach further underscores the commitment to providing a high-quality, accessible tool for educators navigating online education's evolving landscape.

Result

The development of the interactive email trainer prototype has culminated in a valuable resource for educators seeking to enhance their online communication skills.

These resources offer educators an opportunity to engage with the simulator and explore the various scenarios designed to address common challenges in online educational communication. Through this initiative, the aim is to equip instructors with the necessary tools to navigate the evolving landscape of online education effectively.

The Email Simulator interface is intuitively structured to facilitate a seamless user experience. Upon launching the simulator, users are greeted with a clear and concise layout: Banner: As shown in Figure 1, at the top of the interface, a prominent banner introduces the purpose of the simulator, emphasizing the enhancement of online teaching skills through effective communication in digital learning environments.

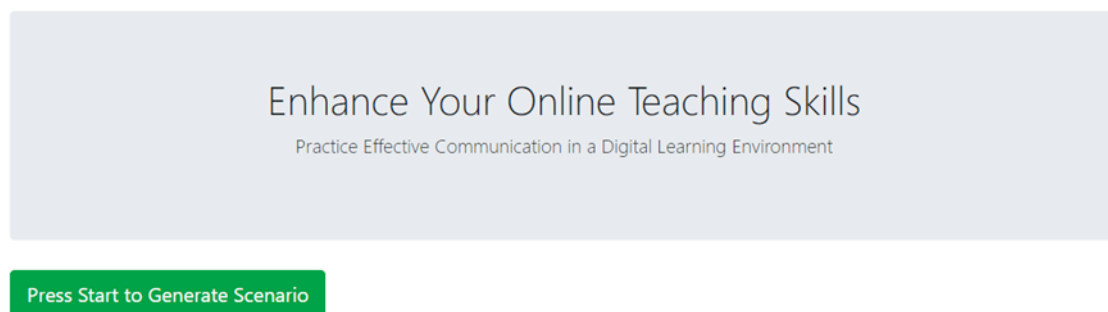


Figure 1: Initial Page Elements in Web Page Simulator

A conspicuous "Press Start to Generate Scenario" button initiates the simulation. This button triggers the generation of a scenario for the user to respond to.

Once the simulation is initiated, the scenario section is revealed. This section prompts the user to draft a response email based on the presented scenario. It includes the following elements (Figure 2):

Scenario Description: A clear heading contextualizes the scenario. It provides a brief overview of the situation that the user is expected to address in their response.

Enhance Your Online Teaching Skills

Practice Effective Communication in a Digital Learning Environment

Press Start to Generate Scenario

Draft a response email with the given scenario

Unequal Access to Education

Details:

Alex, a dedicated student with a slower laptop, recently encountered challenges while attempting to complete a written assignment. They describe experiencing delays and difficulties in accessing online resources. Alex is looking for strategies to optimize their laptop's performance for smoother online learning.

Tips: Advise Alex to close unnecessary applications, clear browser cache, and consider upgrading memory or storage if possible. Additionally, recommend utilizing offline resources or downloading essential course materials in advance. Also, advise that local libraries provide free usage of

Subject:

Write your response here

Submit

Figure 2: Scenario Generated in Web Page Simulator

Beneath the scenario description, a text area displays the details of the generated scenario. This text serves as the basis for the user's response.

User Response Input: A designated input field allows the user to specify the subject of their email. A text area is also provided for the user to compose their response. This is where educators can craft their email addressing the scenario.

Submit Button: The "Submit" button triggers the evaluation of the user's response.

Feedback Section: Initially hidden, this section is revealed upon submission of the user's response. It provides valuable feedback and guidance to the user. The section includes a text area where the feedback is displayed (Figure 3).

Subject:

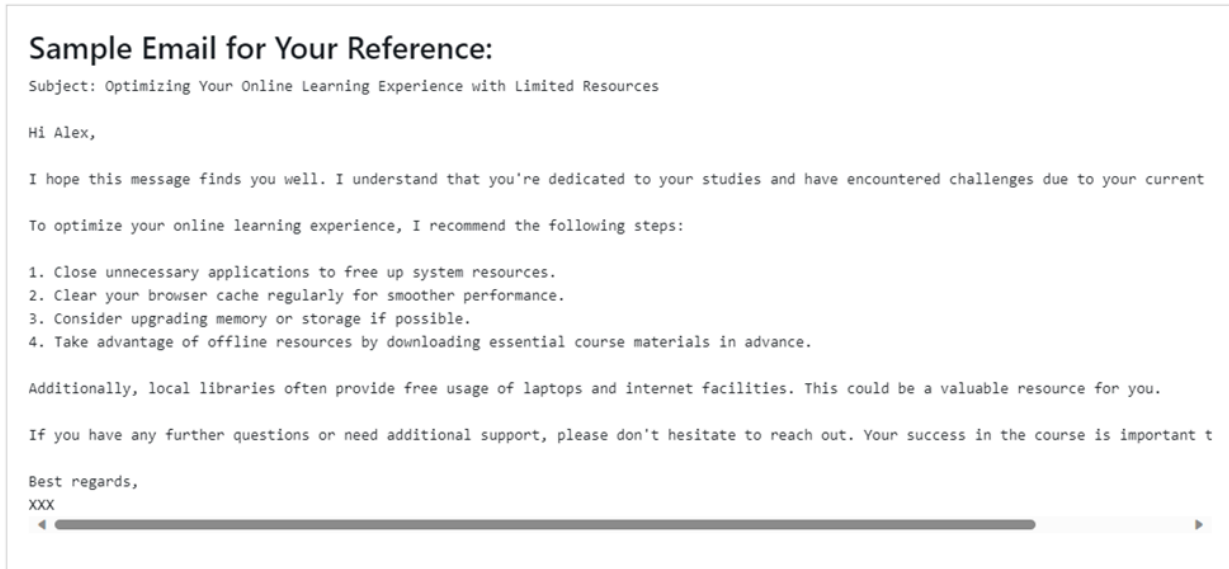


Figure 3: Sample Email Display in Web Page Simulator

The simulator employs a sophisticated scenario generation function that operates behind the scenes. This function selects scenarios from a set of 12 diverse scenarios, spread across 4 distinct categories as outlined in the methodology section. This approach ensures that users encounter a wide range of situations, guaranteeing both diversity and unpredictability in the scenarios presented. This level of detail not only enriches the user experience but also contributes to a more comprehensive training environment for educators.

In addition to scenario generation, the simulator provides an intuitive input interface that mimics the process of composing an email. This interface allows users to input both the subject and content of their response. This hands-on experience closely resembles the real-world task of email communication in an educational context. By incorporating this feature, the simulator aims to offer a holistic training environment that not only exposes educators to various scenarios but also allows them to practice the practical aspect of composing effective emails.

Following the review of the scenario and the generated email, users are prompted to compose their personalized response. Once submitted, the simulator then displays a pre-written email that is relevant to the specific scenario, as outlined in the methodology section. This selected sample email serves as a valuable reference, providing concrete examples of effective communication strategies tailored to the given scenario. This straightforward evaluation process ensures users receive comprehensive guidance for enhancing their online communication skills. It promotes a deeper understanding and application of effective communication strategies in various contexts. From here, users have the option to iterate the

process by pressing the "Press Start to Generate Scenario" button for new scenarios, allowing for more practice and exposure to diverse communication challenges (Wang, 2023).

Conclusion

In summary, this dissertation underscores the urgent need for structured training in online communication, particularly within the realm of email interactions, for instructors. This research proposes a practical approach to enhance the online learning experience, with a specific focus on effective email communication.

The development of the initial prototype of the interactive Email Simulator provides a valuable resource for educators seeking to enhance their online communication skills. There is a critical need not only to equip instructors with the necessary skills but also to provide them with guidance in crafting meaningful feedback. Future enhancements and expansions of the simulator's capabilities should prioritize supporting instructors in delivering effective feedback. By remaining committed to innovation and user-centric design, the aim is to continually improve the simulator's effectiveness and impact in the field of digital education.

As we look ahead, a compelling opportunity emerges for collaborative efforts between researchers and developers to create a user-friendly website. This platform is envisioned to serve as more than just a repository of effective online education practices; it aims to translate valuable insights into actionable guidance for educators. The comprehensive training provided on this platform would cover essential skills, including proficiency in navigating Learning Management Systems (LMS).

The focal point of this initiative is to empower educators, from seasoned professionals to aspiring teachers, by offering accessible resources and tools. It anticipates addressing the evolving landscape of online education comprehensively. One of the key initiatives on the horizon includes the identification of additional scenarios and the development of a full version of the Email Simulator. Moreover, emphasis will be placed on providing useful feedback to instructors based on their responses, ensuring a nuanced and constructive learning experience.

Through this collective endeavor, the goal is to ensure that educators are not just equipped but well-prepared for the future of education, fostering a community of practitioners who can navigate the challenges and opportunities presented by digital learning environments.

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