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"Can you please turn your cameras on?"

Communication Apprehension and Teleconferencing

Emily James McIndoe

School of Communication

College of Liberal Arts, Rochester Institute of Technology

A Thesis presented

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The members of the Committee approve the thesis of

Emily McIndoe presented on December 1, 2022.

Dr. Kelly Martin, Advisor, PhD
Associate Professor and Dean of Students
College of Liberal Arts
School of Communication
Thesis Advisor

Dr. Jessica Lieberman, Advisor, PhD
Associate Professor
College of Liberal Arts
School of Performing Arts
Thesis Advisor

Eun Sook Kwon, PhD
Associate Professor and
Interim Director of Graduate Program
School of Communication

Tracy Worrell, PhD
Associate Professor and
Director
School of Communication

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Abstract

With the onset of the COVID-19 pandemic, a multitude of normalities in individuals' lives had to change to continue moving forward. The world began to embrace new technologies that allowed individuals to be connected while physically apart. One of the most embraced technologies was teleconferencing. Teleconferencing is not a new technology with the first primitive form being created in 1968, however, it was not until the world had to embrace teleconferencing during the COVID-19 pandemic did the technologies become a common part of everyday life. The term Zoom is now synonymous with video chatting and conferencing becoming a part of society's lexicon similar to the terms Xerox and Band-Aid. Zoom has begun to reshape how individuals communicate. Teleconferencing has created a new mode of communication to be explored adding to the extensive list of emerging technologies that have expanded virtual communication. With emerging technologies, it is critical to explore communication apprehension's effect in these new terrains. Communication apprehension (CA) is the extent to which individuals feel fear or anxiety while communicating or prior to communicating. Teleconferencing environments have changed the way individuals experience communication apprehension. This study seeks to explore the impact of teleconferencing technologies and how communication apprehension manifests itself in online scenarios. This study will use qualitative research methods since there has been little research on video conferencing and communication apprehension. By understanding how communication apprehension occurs in teleconferencing, society can better understand ways to reduce this apprehension and refine their communication skills.

Keywords: communication apprehension, qualitative research approach, teleconferencing, online communication

"Can you please turn your cameras on?"**Communication Apprehension and Teleconferencing**

Since the beginning of the COVID-19 pandemic in 2020, life drastically changed in many ways. One of the most profound areas of transformation has been how individuals interact with each other in social, business, and school settings. Technology has allowed these transformations to take place without cutting off communication with those who are not physically close as the pandemic has impacted individuals' ability to leave their homes and interact with each other (Sealy, 2021). The lack of physical distance has made individuals desire more connection and human communication which has been seen in teleconferencing. This desire for connection has resulted in a reshaping of communication as we have known it. The change from in-person communication to mainly digital communication has caused individuals to relearn how to communicate in these unprecedented times. While technology's ability to allow individuals to adapt to the changing landscape is an amazing advancement it has also caused unintentional consequences. These consequences arise in the form of mental health issues, limiting educational opportunities, and inhibiting communication overall (Burke, 2020). These unintended consequences may also include a shift in communication apprehension.

To understand the consequences and benefits of teleconferencing, this study will examine the known and new factors that may influence communication apprehension in teleconferencing settings. By understanding how communication has changed and what aspects of online communication in teleconferencing settings and factors of teleconferencing itself are contributing to communication apprehension, better tools can be created to minimize virtual communication apprehension virtually. Continued research can help create better methods for integrating individuals into new virtual environments where communication takes place.

The new digital age that individuals are being forced to experience can be causing a rise in communication apprehension and how it forms overall in these new settings. Understanding communication apprehension in a telecommunication setting can allow researchers to create more inclusive distance learning environments and help businesses have better communication as they continue their remote work. As the world continues to operate in a hybrid fashion of virtual and in-person settings, effective online communication is a vital skill that cannot be overlooked any further (Sanchez, 2021). With only twenty percent of meetings being expected to take place in person by the year 2024, teleconferencing must be critically examined to allow for better interpersonal and group communication (Lavelle, 2020). While teleconferencing continues to be a part of everyday life, it must be better understood to help create effective communication no matter what setting it is taking place in.

Literature Review

COVID-19 Pandemic and Teleconferencing

During the pandemic, individuals' usage levels of teleconferencing platforms such as Zoom, Google Meet, and Skype for their work drastically increased. Seventy-one percent of individuals in the United States at the height of the lockdown were working remotely and using various means of technology to upkeep their daily responsibilities and tasks (Parker, 2021). These individuals spanned a wide range of professions such as teachers, professors, engineers, and salespeople. Noting the importance of educators' movement to telework is critical when thinking about the number of individuals who began using Zoom. Ninety-three percent of school-aged children (K-12) participated in a form of distance learning (Bureau, U. S. C., 2020). Seventy-five percent undergraduate college students in the fall of 2020 participated in distance learning. Compared to the fall of 2019, this was a ninety-seven percent increase in enrollment of

distance learning classes (National Center for Education Statistics, 2022). These statistics only begin to reveal how widely teleconferencing has been used. These statistics do not include graduate students.

At the peak of the lockdown, the majority of the United States was using Zoom or other teleconferencing platforms as downloads consistently increased (Lieberman, M, 2020). Today, the usage of teleconferencing technologies is still quite prevalent although it has steadily decreased since July 2020, (Bureau, U. S. C., 2020). A large amount of teleconferencing usage in educational and work settings alongside the isolation of the pandemic has shown that it is possible that teleconferencing has impacted and changed communication apprehension as society has known it. Despite these notable changes and the growing amount of online usage, little research on how communication apprehension affects communication in teleconferencing settings has been completed (Ledford et al., 2022).

Communication Apprehension

When the World Health Organization declared COVID-19 a pandemic and put in place a large set of guidelines to be followed that limited physical interactions to decrease the chance of spreading COVID-19, many organizations and individuals became concerned about how communication would occur. Teleconferencing and technology were able to fill the worry about how communication would take place. However, communication and physical communication is important for individuals to partake in. Worries quickly surfaced as effective communication is necessary to form bonds and understand individuals. One main aspect that influences ineffective communication is communication apprehension.

Communication apprehension is a term and theoretical framework conceptualized by communication scholar James McCroskey. Communication apprehension is defined as "an

individual's level of fear or anxiety associated with real or anticipated communication with another person or persons" (p.78) that is specifically related to oral communication (McCroskey, 1978). People may experience communication apprehension in multiple settings where oral communication occurs such as group, public and interpersonal interactions (Bryne et., al 2012). Communication apprehension is then typically broken down into the category of communication apprehension and level. There are four main types of communication apprehension: generalized context, trait-like, situational, and person-group (McCroskey,1984).

Generalized-context communication apprehension is "a relatively enduring, personality-type orientation toward communication in a given type of context" (McCroskey, 1984). This explanation of communication apprehension showcases how individuals can experience high amounts of apprehension in one specific communication context and experience little to no apprehension in another. During the pandemic, a multitude of new ways to communicate has arisen. These new platforms can be seen as a new context of communication, one of the most prevalent being teleconferencing. Teleconferencing is a context that may impact how individuals experience communication apprehension. This research hopes to uncover whether teleconferencing is a new generalized context of communication apprehension and the implications of communicating virtually.

Trait-like communication apprehension is another form of communication apprehension where communication apprehension is not viewed as a true trait but rather as a personality type. A true trait refers to aspects of an individual that cannot be changed. A true trait can be characteristics such as height, eye color, face shape, etc. In this context, communication apprehension is not viewed as a true trait because it can be improved upon and changed. Rather trait-like communication apprehension is thought of as an aspect of an individual's personality

that can be improved upon although being highly resistant to change (McCroskey, 1984). Communication apprehension has been found to remain constant across each form of oral communication rather than varying based on the communication type for those who exhibit Trait-like CA. (McCroskey, 1977). Based on this piece of evidence, trait-like communication apprehension in digital communication would theoretically remain the same regardless of the type of communication occurring.

Situational communication apprehension is the third type of communication apprehension. This type of communication apprehension "represents the reactions of an individual or a group of individuals at a given time"(McCroskey, 1984). Situational communication apprehension may occur through teleconferencing platforms such as Zoom. Individuals may experience little to no communication apprehension on a call with friends or family. The same individuals who may experience little to no communication apprehension on a call with friends or family may experience high levels of communication apprehension in a teleconferencing business meeting or class. Various factors may contribute to the change in the levels of communication apprehension. With eighty-one percent of individuals who work using teleconferencing, this research hopes to gain insights into communication apprehension that occurs virtually to improve upon digital communication (Sanchez, 2021).

The fourth type of communication apprehension is person-group communication apprehension. Person-group communication apprehension views communication apprehension as a response that occurs when communicating with a specific person or group of people (McCroskey,1984). As this type of communication apprehension deals with interacting with specific individuals, person-group communication apprehension will not be heavily examined in this research. It may be assumed that person-group CA would remain the same on

teleconferencing platforms as no change in regards to subordinate status changes in this context. Further research may be done in examining how person-group communication apprehension occurs in teleconferencing breakout rooms and business meetings.

These four types of communication apprehension can then be broken down further by levels. The two levels of communication apprehension are high and low. High levels of communication apprehension means individuals experience high amounts of anxiety or fear in communication. Low levels of CA mean individuals experience low amounts of anxiety or fear in communication (McCroskey, 1984). Individuals with high amounts of communication apprehension are often more nervous to speak up in social settings and are hesitant to engage in group settings. Everyone experiences some degree of communication apprehension regardless of whether they are excellent communicators or not (McCroskey, 1984).

With the pandemic, how everyone communicates and interacts has been drastically changed. Technology has allowed communication to continue despite physical limitations, however communication apprehension has most likely been affected by this dramatic change. This study seeks to fill this gap of information on how communication apprehension has changed in the pandemic, especially in the online world of teleconferencing. Completing a qualitative study on communication apprehension will allow for in-depth explorations of personal experiences to arise for analysis (Byrne et al., 2012; Ledford et al., 2022).

Factors of Communication Apprehension

Communication Apprehension is unavoidable and affects everyone. In an attempt to figure out what factors influence and contribute to the formation of communication apprehension, there have been some elements outlined in the literature. Prior research suggests six elements can cause an increase in communication apprehension. These six factors are

novelty, formality, subordinate status, conspicuousness, unfamiliarity, dissimilarity, and degree of attention to others (Buss, 1980).

The factor of novelty refers to novel situations. Novel situations are unique situations that normally do not occur in an individual's regular day-to-day life. Some examples of novel situations are interviews. Teleconferencing for many people at the start of the COVID-19 pandemic was a novel situation and still may be for some. Novelty surrounding any novel situation decreases with the more an individual experiences the situation. In regard to public speaking, if an individual continuously practices speeches and presentations to an audience regularly, communication apprehension can decrease from the normalization of the situation.

The technical consulting firm, Gartner, projects that seventy-four percent of companies will allow remote work for their employees as time goes on (Sanchez, 2021). As remote work continues, teleconferencing becomes normalized. As this normalization begins communication apprehension levels may vary between the start of the pandemic and in the future. However, a novelty in the teleconferencing space may remain. Novelty in virtual presentations is being encouraged to combat distractions that occur with remote audiences (Sanchez, 2021).

Introducing novelty into virtual teleconferencing environments while it does gain the audience's attention and allows them to remain a captive audience, may allow for communication apprehension levels to remain high when it comes to teleconferencing in some respects. The main area that it may stay high is that individuals never get used to being an audience member on teleconferencing platforms or a presenter.

Another factor that increases communication apprehension is a formality. Formality refers to formal situations that are dictated by strict rules on appropriate behaviors that have little to no deviation from these rules (Buss, 1980). Specifically in American society, teleconferencing

formality for many events is relatively low. Formal situations with teleconferencing are far and few between. This may be because individuals are at home and typically do not have to dress up to be seen on these occasions. Behavior for what is accepted on teleconferencing platforms has not been widely accepted and greatly varies between calls. Teleconferencing behaviors vary by the purpose of the meeting, company or teacher expectations, and what the individual believes to be the standard for teleconferencing. Not knowing this formality is closely associated with the factor of unfamiliarity that most likely play a large role in the dynamics of communication apprehension in regard to teleconferencing.

Unfamiliarity can be seen in regard to who someone is communicating with and where they are communicating (McCroskey, 1980). Teleconferencing and the added layers between individuals have decreased people's connections with each other. Three out of five United States workers reported feeling lonely in 2019 before the pandemic. Feelings of isolation have reached an all-time high during this period (Sanchez, 2021). These added layers of connecting with unfamiliar individuals on an unfamiliar platform may increase levels of communication apprehension when communicating on teleconferencing platforms, making unfamiliarity an important factor in digital communication. With feelings of isolation and loneliness, the communication apprehension factor of dissimilarity may also apply in teleconferencing. Dissimilarity is the state of being different, in this case it applies to being different than one's peers (Buss, 1980). Dissimilarity can increase communication apprehension as in general most people find it is easier to communicate with those who are similar to them. However, this is not true in all cases and some individuals experience a heightened sense of communication apprehension when conversing with those most similar to them (McCroskey, 1980). Having greater barriers to getting to know and connect with peers may increase communication

apprehension by giving individuals the feeling that those they are speaking with are not similar to them. When feelings of dissimilarity are high, it results in higher levels of communication apprehension (Buss, 1980).

The next factor of communication apprehension is subordinate status which occurs when communicating with someone with a higher status. In situations where someone interacts with an individual in a higher position of power than themselves such as a boss, teacher, or CEO communication apprehension will increase. From the literature, subordinate status is the least likely to be affected by teleconferencing. Teleconferencing platforms do not add or take away from this factor's relevance to communication apprehension and may increase levels of communication apprehension as expected to communication occurring in person.

Conspicuousness is another factor that contributes to communication apprehension. Conspicuousness is when someone feels that they are standing out in their environment (Buss, 1980). Conspicuousness is very common in public speaking scenarios. This factor may contribute to communication apprehension in teleconferencing as at any given point in time someone could be looking at your video and you would not have any knowledge they are doing so. Conspicuousness might occur when someone feels that their zoom background is not sufficient for the call they are on, whether it is due to background information such as people entering or exiting the frame as well as where they are. A background that is not like everyone else's may alert people to focus on the individual and draw attention to them contributing to communication apprehension in the digital realm. Similar to conspicuousness, the degree of attention also affects communication apprehension (Buss, 1980). Being ignored or given too much attention in teleconferencing situations can also affect communication apprehension. Being

ignored in teleconferencing may appear with cameras being turned off or noticeably seeing individuals completing other tasks while an individual is speaking.

Some factors that may contribute to communication apprehension that are unique to teleconferencing may be isolation, cameras, location, and technology issues. According to *Presenting Virtually: Communicate and Connect with Online Audience*, a textbook on how to present more effectively in teleconferencing spaces all of these factors impact how people connect with presenters virtually (Sanchez, 2021). These factors coincide with some of the six factors mentioned above but may become separate factors through what is found in the study. Other factors not mentioned may appear in research as interviews take place leading to discoveries of communication apprehension in teleconferencing.

Teleconferencing, Communication, and Communication Apprehension

Teleconferencing or telephony according to the Webster dictionary is when individuals meet through virtual means where communication can still occur successfully. Teleconferencing can occur through three main types of telecommunications: desktop video conferencing, interactive video, and web conferencing (Al-Samarraie, 2019). Zoom is specifically a web conferencing platform that allows users to video call with anyone who has the meeting link. Individuals can buy a plan or use their free version which has a handful of restrictions. Zoom is just one option of teleconferencing platforms that have been heavily used in the past few years. The most likely version of communication apprehension that could be seen with Zoom is situational communication apprehension and generalized communication apprehension. Situational communication apprehension is "the unique combination of influences generated by audience, time and context" (McCroskey, 2001). Generalized communication apprehension is apprehension stemming from specific contexts of communication. If an individual experiences

high levels of communication apprehension when public speaking, it will most likely carry over in teleconferencing. The pandemic has most likely created a surge in high levels of communication apprehension due to the new way of communicating which is abnormal for many individuals who have never teleconferenced before and may build off pre-existing communication apprehension.

To fully understand and examine communication apprehension and zoom, this study used a qualitative approach to examine the following research questions: *(RQ 1A) Does communication apprehension occur in the Zoom environment? (RQ 1B) If research question 1A is true, what settings does communication apprehension appear in on Zoom?, (RQ 2) What factors are related to communication apprehension on Zoom? , and (RQ 3) Does Zoom communication apprehension affect individuals' levels of communication apprehension when in an in-person setting?* By better understanding how communication apprehension affects teleconferencing individuals will be able to create more effective learning environments for distance learning and remote work.

Methods

This project used naturalistic and thematic analysis to understand how communication apprehension appears in teleconferencing settings. Based on this study's overall goal, it was found appropriate to use qualitative research methods to gain understanding and valuable insights through rich data collection and because qualitative research methods allow the researcher to capture changing attitudes. Qualitative methods suit research when factors that are being researched are not quite clear. Qualitative methodology lends itself to discovering more than what was set out to and unearths a general understanding of events (Hammarberg, Kirkman,

& de Lacey, 2016). The project was given human subjects' approval and participants provided consent for their interviews to be used for research purposes.

Procedures

Interviews

Communication apprehension in online settings and in general has been thoroughly studied using quantitative methods. A qualitative approach lends itself to growing a needed body of work for learning more about individuals' perspectives (Byrne et al., 2012). For this study, a series of semi-structured interviews were conducted as it allows the participants to remain in control of the situation and accounts for the interviewee's comfortability by keeping a relaxed atmosphere throughout the interview.

The interviews were conducted on the teleconferencing platform, Zoom. This was done to allow for a wider range of participants, rather than drawing from those directly in the researcher's vicinity. As the interviews were conducted over Zoom, observations of the participants were able to take place and minimize recall bias. Recall bias was minimized as participants were able to examine and interact with a teleconferencing space directly.

To ensure the integrity of the interviews, all interviews were recorded and transcribed using the Zoom platform and later edited for accuracy. The interviews consisted of twenty-five questions, including those related to different participants' personal experiences followed by questions on communication settings in conferencing platforms. The questions included usage levels of teleconferencing to establish their credibility as high-level users and their own experiences with the platforms being studied, nervousness surrounding the platforms, comfortability levels, and specific technology features. A majority of these questions were adapted from the personal report of communication apprehension (PRCA-24) survey

(McCroskey, n.d.). This measure is the most widely used to measure apprehension in individuals overall and is preferred over previous versions of the measure such as PRCA (McCroskey, n.d.). Responses of the participants were also probed deeper into as the interviews were conducted in a semi-structured nature as previously mentioned.

From the analysis of the transcriptions, an inductive approach was used to code the interviews. An inductive approach was chosen due to the study's exploratory nature. This was done to avoid any inaccurate analysis of the data. By allowing themes, patterns, and ideas to emerge through the data by looking at the details first, misconceptions are limited, and ensure that the findings found are accurate and authentic (Miller, 2013).

Participants

Purposive and convenience sampling were used to recruit participants for this study. Participants were chosen based on their teleconferencing usage levels and focused on individuals who are heavy to medium users of teleconferencing. In total 12 participants were interviewed — 8 students (1 Ph.D., 3 Masters, and 4 Undergraduate) and 4 business professionals (a Designer, Nutritionist, Packaging Engineer, and Hotel Manager). 7 participants identified as women and 5 participants identified as male. Individuals who were interviewed were recent graduates and current college aged students. These individuals ranged in age and nationality. In total 3 individuals self-identified as Black, 1 individual identified as Bangladeshi, and 8 identified as White. The sample did not include those who were older in age as this sample was not as accessible to the researcher and were not as willing to be interviewed.

Table 1.1 Participant Demographics: Gender

	N	%
Male	5	41.7%
Female	7	58.3%

Table 2.1 Participant Demographics: Highest Degree Level Completed

	N	%
Some college, no degree	3	25.0%
Associates degree	1	8.3%
Bachelor's degree	5	41.6%
Master's degree	2	16.6%
Post Graduate degree	1	8.3%

Operational Definitions

For this study, the following operational definition was used to ensure participants' understanding. The term Zoom was defined as a lexicon term for teleconferencing. While Zoom is a specific platform that has been widely used during the pandemic, the meaning has also become synonymous with teleconferencing, and video calling such as FaceTime has become a standard term when video chatting.

Observation & Analysis

The recorded transcripts were analyzed using a thematic analysis framework to identify and interpret emerging themes within the data (Clarke & Braun, 2017). The first step in the analysis consisted of reviewing the data and coding the units of feedback for the research questions. A constant comparison technique was then employed to code the units into categories of factors related to communication apprehension and appearing themes (Glaser & Strauss, 1967). Lastly, names for each category were identified and operational definitions were created for each category. All efforts were taken to assure the data was analyzed and collected in a systematic way. The codes used inter-reader reliability and the reliability was found to be 0.93. The participants were observed in the interviews as they were conducted in the Zoom space. The observation allowed the researcher to take a naturalistic approach to see how the participants interacted in a teleconferencing space. The observations aided in the analysis of the interviews.

As this was a pilot analysis, I make no claims that the results of the research are fully representative of communication apprehension in teleconferencing settings. It is also important to note that the results are reflective of the context-specific data that was gathered with this particular group of participants. While their experiences could suggest similarities to the likeness of others, they should not be understood as generalizable across all contexts.

Results

Based on the analyzed transcripts from the participants and observations made during the interviews, it was revealed that communication apprehension is prevalent in teleconferencing environments. Communication apprehension appears in numerous ways in teleconferencing environments with the most notable themes being presentation, voyeurism, participants' level of association, hypermediacy and remediation. How the communication apprehension appears in

these environments is widely related to how one use's the platform itself and how the platform was created.

RQ 1A: Does communication apprehension occur in the Zoom environment?

When analyzing the data from the participants it was revealed that communication apprehension does exist in teleconferencing environments. Each participant indicated through their interview that they experienced communication apprehension to an extent, naturally some participants experienced communication apprehension to a higher degree than others. Some statements made participants showcased this, one statement in particular was,

"I definitely exhibit classic signs of anxiety when on video calls. One example is that I sweat so much more when I'm doing a video call, than in person. This is so weird because you're just sitting when you are on a video call, but as soon as I am off camera, I'm frantically waving my hands, loosening or waving my shirt. This is all because of how stressed out and nervous I am during teleconferencing. Thank God on Zoom it's not visible thankfully, because it's usually just like my lower body that's like freaking out but I don't experience this to the same degree in person at all."

As RQ1A was proven to be true, RQ1B was able to be explored and answered.

RQ 1B: If research question 1A is true, what settings does communication apprehension appear in on Zoom?

It was found that participants experienced communication apprehension in multiple settings including business, academic, interpersonal and interviews. The majority of participants specifically noted their apprehension around business settings in teleconferencing. Some factors that individuals mentioned in regard to this were the necessity of having in most instances their cameras on, rather than being able to blend into a teleconferencing environment they were forced

to be active participants. Professionalism and increased feelings of peer judgment were found to be associated at a higher rate in teleconferencing business settings. One participant stated the following,

"I feel the most apprehensive in business-based meetings on teleconferencing. Specifically, they make me the most self-conscious I suppose. When it comes to research meetings and my own profession it gets the most stressful compared to class or personal settings on teleconferencing."

In this case, it is easily illustrated that in business settings there is a higher level of associated risk or judgment affecting the prominence of communication apprehension in business settings. Other settings that had associated communication apprehension were breakout rooms.

Breakout rooms are a capability of teleconferencing platforms that allow for the host to split their audience into smaller sessions to allow for collaboration and discussion (*Managing Breakout Rooms*, n.d.). Participants indicated in their statements that they had heightened sense of communication apprehension in breakout rooms for both business and academic purposes. While the goal of the breakout rooms is to allow participants to collaborate and discuss in smaller groups rather than with all the other meeting participants, the statements revealed that this was found to be the opposite (*Participating in Breakout Rooms*, n.d.).

Many participants stated that they found breakout rooms to be counterproductive and did not foster collaboration. Rather the breakout room capability promoted silence and lack of communication in general. Some participants stated that the more cameras that were on in a meeting promoted better collaboration in breakout rooms as it felt more personal, and you could visibly see if the individual was present in the moment or even at their computer. The unknown

of whether or not the individual was paying attention was mentioned several times in regard to levels of communication apprehension. One person participant noted the stark difference between in-person small group breakouts and teleconferencing breakout rooms,

"It's a little bit discouraging when you should be working on something, or you should be talking about something and the other people in the breakout room just don't seem to care enough solely because it's on zoom, but you know that if it was in person, they would be raring to go and talking as much as they could."

The analysis revealed that the participants did not experience communication apprehension in settings where they were communicating with their friends. In these situations, they felt the most comfortable. Five participants also noted that they first experienced teleconferencing through interacting with their friends for online game play for games such as Dungeons and Dragons. Based on the findings it can be concluded that communication apprehension exists in the majority of settings that the platform is used for and is inherently experienced as a user experiences the platform itself.

RQ2: What factors are related to communication apprehension on Zoom?

The following section covers the six prevalent themes — presentation, voyeurism, security, participants' level of association, hypermediacy, and remediation — that emerged during data analysis using inductive coding related to factors involved in communication apprehension in teleconferencing environments.

Presentation. The theme of presentation relates to how someone is presenting themselves on the platform and deals with how the individuals felt they were representing themselves both physically and verbally. The theme of the presentation includes the ideas of appearance, control, novelty, and a level of self-consciousness. Some participants felt that they

needed to spend extra time preparing themselves to look physically presentable for their teleconferencing calls than they do in an in-person setting. One participant accounted for this desire being related to getting into the right mindset to be able to have the focus and concentration to remain present in the teleconferencing calls they were participating in. Without the extra preparation for their presentation of themselves and their space, they felt unprepared and more likely to feel self-conscious.

"Having a zoom call is like a mental tab in my brain. Knowing I have a call allows me to prepare more in advance to feel ready. This includes finding what I need - notes, books or even outfit, fixing my background, and cleaning. So, I have control over the setting I am in and feel better about the teleconferencing."

Another participant associated this change in level of preparation with having to constantly see themselves on the call. Unlike a normal in-person conversation one does not have to view themselves ever and are generally unaware of how they look to another person. In teleconferencing, individuals are forced to see themselves for the duration of the call, how they look, how they speak and scrutinize every aspect of themselves. One participant stated,

"It's a bit odd...knowing that I can see myself at all times. In a regular classroom setting, an in-person setting, you're not seeing yourself like there's not a mirror in front of you at all times as you're participating and existing. I think this ability is very intimidating. When a professor asks a question then you have to answer while you're looking at yourself and that makes it hard to participate because it's uncomfortable. For me it makes me nervous and definitely does have an impact"

This leads for many of the participants to have an increase in level of preparation into their presentation of themselves and physical space to combat the consciousness and hyper

awareness of themselves they feel. By spending more time and energy into their presentation, their communication apprehension is lowered and lessened. This is showcased by one participant in particular who stated in their interview,

"If I have an online meeting, I'll sit down like 10 minutes before and make sure everything's good and everything sounds good. I feel like I'm a singer sound checking for a concert and making sure myself and technology is working properly."

Voyeurism. The next prevalent theme that was found through the coding of the interviews was voyeurism. In this research, voyeurism is described as one's ability to be seen without knowing who is looking and vice versa as an individual being the voyeur looking into others' conversations, homes, and personal spaces through the utilization of cameras as part of the teleconferencing environment. Through the interviews, it was found through the technology of the teleconferencing platforms that many participants felt like they were both being the voyeur and the individual being looked upon. As the technology allows an individual if they wish to have their cameras on, it creates a feeling in the individuals that they are always being seen by not only themselves but their other participants in the meeting as well. Since participants of teleconferencing meetings have no control or ability to acknowledge who is viewing them, it causes an increased level of communication apprehension. Some participants stated that this increases their nerves while presenting due to the fact that they constantly view others in teleconferencing meetings and assume others do the same. Alongside individuals' ability to not use their cameras these feeling increases as more individuals turn their cameras off in meetings as the scope of who others can watch lessens.

"I feel like it's being singled out, not that I feel like anyone would be looking at me specifically but because my cameras are on and I'm one of the only ones with my camera on that

calls unnecessary attention to me and I'd rather not. The feeling of being watched is exacerbated in these situations, especially in breakout rooms."

Some participants' feeling of being watched is further exacerbated when recording is taking place in teleconferencing settings as they are unsure and unaware of who will be re-watching. For some this stemmed around fear that what they said and how they act may be scrutinized later by bosses and those above them. One participant spoke specifically about a workplace setting where this had happened on occasion to fellow employees,

"I think it's the laser focus and the sense that you're always being watched... and also the recording aspect. When you're recording, visually again, it almost feels like something or anything I do can come back to bite me no matter what. Even if I'm not doing anything bad or negative, there's still that fear. If someone just disagrees with what I'm saying or how I'm acting, then it can come back and really hurt you."

Cameras play a big role in the theme of voyeurism. In teleconferencing settings with the usage or lack thereof of cameras, allows individuals to feel simultaneously inconspicuous and conspicuous. When cameras are on participants feel as if they are being watched yet when their cameras are off, they often feel like they are being a voyeur, one doing the watching and intruding on a conversation that was not made for them as they do not have to be an active participant rather, just an on-looker. This was observed in each interview, with two participants best explaining the phenomenon they were experiencing,

"In Zoom meetings, especially larger meetings I feel that I'm seeing a conversation that I am not supposed to be watching. When my camera is off, I really feel like I'm intruding on something that is not meant for me and I'm just watching everything go down. Even though these

are scheduled meetings I have to go to, it still feels like I'm doing something wrong by being there just watching."

The second participant explained the phenomenon by stating,

"Those moments, you can just be like who's this random person sitting in this conversation, and it almost feels like you're observing a conversation. When you're in person, you don't do that normally. You don't just sit and watch people have conversations."

Security. The theme of security emerged in every interview that was completed. The theme of security came out often when discussing recordings, the idea of control, privacy, and camera usage. Security was the number one concern of many of the participants for multiple reasons. Many participants stated recordings as a whole made them very apprehensive specifically in work and school settings. This is because in work settings and school, these recordings are saved and uploaded to a cloud location that is accessible to all. When it is made public like this rather than have a comment that was made go by and get forgotten, there is now the opportunity for anyone to look back on what was said. From this punishment or even ridicule can take place over the person for a comment that they made. One participant, in particular, had seen a peer get punished in their workplace due to teleconferencing meeting recordings. Normally what was said would be forgotten however when upper management rewatched the meeting recording it was decided that what the participant did was not correct. Recordings change how the conversation dynamic plays out and adds an extra layer of anxiety.

Security is not just a concern of who can look back on the recordings but also how they are being saved on the teleconferencing platform itself. Every participant stated that they did not explicitly read the terms and conditions of the teleconferencing platforms they used. Some participants mentioned that they did not have a choice in whether or not they could opt out from

using the platform due to the COVID-19 pandemic. It was mandatory to use the platforms that they were given for teleconferencing for either work or school.

"If this is, you know a recording like is this recording me or like does that you know, like, even if it is for algorithms to make my life easier, how is that being processed, how is that data being stored and like, how is that you know. capitalizing basically or like using my own like personal relationships that I have with people and that I'm just trying to connect with people you know."

They have concerns about what information is being collected on them and how it is being stored. Especially from the COVID-19 pandemic the teleconferencing platforms have information about what they do for a living, what they do socially, who the individuals they interact with are, confidential personal information and in some cases confidential work information, and information about the spaces they are in through camera usage. While some teleconferencing platforms such as Zoom, state that they have no intent on ever selling the information that is being collected this could change at any time. As well, Zoom is storing and collecting every aspect of information that is being shared such as audio, polls, and collecting information through camera usage. The lack of clarity as well in the privacy statements of these teleconferencing platforms also aids in the apprehension as based upon the interpretation at any time the company could choose to sell their information to advertisers.

"I don't know if you know with Zoom's I haven't actually gone through zooms like full transparency policy but, like that's something that I always that's like always in the back of my head and always makes. me like a little bit nervous, you know where it's like How is this like observing how do I have privacy in this, you know"

The concern then becomes do you as an individual want a company to have such large amounts of data about yourself, what are the impacts that this could have on you if it was stolen or used unethically. Many participants stated that this is a concern they have and impacts their communication apprehension levels but choose to try to ignore these looming thoughts of security. Some participants stated that it is a moot point to an extent as so much information on a daily basis is collected each day. However, all participants stated that information being collected and used against them is the biggest reason they are skeptical over security and how it affects their levels of communication apprehension (*Privacy*, n.d.)

Another portion of the theme of security is control. Many participants spoke about how they felt they did not have a large amount of control of their environments and where their information is going.

" The Internet can be very much open source sometimes and you don't really know about your level of security. I mean our data is always being sold left and right. I don't know what is being saved from these platforms and that is a stressor. Not to mention how it's being used"

Participants' Level of Association. Familiarity plays an important role in a participant's level of communication apprehension in the teleconferencing space. Familiarity in the teleconferencing environment appears in multiple forms. Due to the various forms of familiarity, the theme that emerged in the coding was participants' level of association. The participants' level of association related to a participant's degree of familiarity with their fellow participants on a call, platform and the topic that is being discussed.

It was found that feelings of CA are increased on teleconferencing platforms when individuals are unfamiliar or feel unfamiliar with the individuals that they are meeting with.

"I think one on one settings are the best, I'd say the larger the group, the more uncomfortable I would be because it might be with people who you aren't familiar with talking to or It's kind of just like someone like you listening in on a conversation that you might rather be having with just like a few people."

Some participants noted that it is easiest to communicate with individuals on teleconferencing platforms that they already know through real world interaction away from the mediated online space.

"It's much easier to talk, personally for me, over the phone or video if I've met the person I am interacting with before in-person. For me, it just feels like an extension of the interaction and can be built upon"

Participants also noted that they felt it has been hard to build relationships on teleconferencing platforms with individuals they work with.

"It's hard to build relationships, especially a working business relationship with someone when you are only interacting with them in teleconferencing spaces. It's incredibly nerve wracking"

Some stated this due to how impersonal the space feels and that they are too aware of the hypermediacy to a degree that it makes the interaction almost feel fake.

"Not necessarily harder to communicate, just more nerve wracking because there's something about in person that's just more personal. I feel like on Zoom and teleconferencing platforms I could say anything, and it doesn't matter quite as much. It doesn't feel real"

Others stated that it is due to the fact it is rarely one on one settings and when it is one on one the meeting feels highly formal affecting the person's ability to build a relationship.

"...but it's harder to make jokes over a screen which helps build relationships. Small talk is also a little bit weird over a screen than it is in person unless you're comfortable with that individual. I think interacting face to face, it's easier to make a little comment about something you just experienced and bond over. But what are you really experiencing on Zoom? The only thing in common with someone is that you're sharing a screen with them and then maybe a poor Internet connection."

Creating and learning how to build better relationships online can help lower communication apprehension. This is incredibly important especially as we have seen a steady rise and continued practice of entirely remote organizations ever since the COVID-19 Pandemic. Individuals mentioned that while they feel building connections over Zoom is harder, it is not impossible with figuring out how to best use inquisitive questions and many touch points of the remote spaces they have access to, to build a strong and meaningful connection. These strong and meaningful connections lessen communication apprehension.

In addition to familiarity this theme relates to the degree of formality in a call and uncertainty as well. Through the interviews it was found that participants who were less familiar with specific teleconferencing platforms had increased amounts of CA. This increase in CA is due to the uncertainty surrounding what some settings do and the changes in the User Design of the Platform. Additional features of platforms or lack thereof that stray away from what the user is used to also changes the amount of CA an individual experiences. To create ways to lower CA, in school and workplace setting training relating directly to the most used platforms can decrease the individual's CA which in turn creates more effective communication. The more effective the communication is even in remote settings, the easier the individuals can function and carry out their necessary job functions. As platforms begin to draw on capabilities of other

platforms, the amount of CA individuals' experiences also is lowered as each platform begins looking the same to the other. With this it becomes less about what platform to choose and more about which one is the most accessible.

Hypermediacy. Hypermediacy is "the style of visual representation whose goal is to remind the viewer of the medium" (Bolter & Grusin, 1999). The platforms of teleconferencing did not seem to have the goal of hypermediacy in mind as the software was created. Rather they attempted an immediacy of an in-person conversation or business meeting, however due to the failure of immediacy, we are left with an unintentional hypermediacy of the platform. With the hypermediacy of the platform users have to acknowledge the fact that they are communicating with an individual through a screen and most notably the platform. Teleconferencing platforms such as FaceTime successfully achieve immediacy. Immediacy at its most basic definition is technology's ability to closely reflect the real world creating a sense of presence. Immediacy can be achieved when transparency is at the forefront of the technology's creation. When transparency is achieved it allows the users to ignore the platform interface and have "an immediate relationship to the content of the medium"(Bolter & Grusin, 1999).When examining the Facetime app, a user is able to have an immediate conversation with the content of the medium being the other individual and conversation actively going rather than having a relationship with the platform first and then the content. Achieving immediacy is difficult, having immediacy requires it being the goal when technology is being created. Immediacy is created by the programmer and the one's using the platform. FaceTime is able to have immediacy and excel at it, by erasing the phone and bringing the attention of the user to the conversation at hand, allowing the app to mimic in-person communication.

Platforms such as Zoom, and Google Meet are unable to achieve this due to the number of settings and features involved. It becomes apparent that there are multiple representations of the conversation occurring and brings the users attention to the platform. Rather than, attempting to erase the technology, it is brought to the forefront of the user, centering the communication to an extent around the technology itself. As the platforms fail at achieving immediacy and by default transparency, hypermediacy is created. The hypermediacy that is created by the technology of teleconferencing incites one's ability to gaze and the hyper-awareness of one's ability to see. The hypermediacy increases feelings of voyeurism that have been present in the findings.

The failed immediacy causes communication apprehension in teleconferencing settings due to the hyperawareness of the screen. Users of teleconferencing platforms begin to acknowledge the platform at a heightened extent more than the conversations taking place ultimately hurting the goal of the technology which is allowing users to connect. The technology causes individuals to be hyperaware of themselves and others influencing their communication process and in turn anticipated apprehension of communication.

Remediation. While communication apprehension is "the level of anxiety related to one's anticipated or actual communication", it is important to note the importance of technology in the process of communication. The addition of screens in the communication process drastically changes how conversations are conducted and occur. The teleconferencing environment is mediated through the platform capabilities and what aspects have been included by developers. The user-interface of the platform is now a limitation or aid in the communication process. Each platform has its own unique interface and capabilities to an extent, allowing anxieties to form to one's ability to communicate using these specific platforms.

Regardless of the specific platforms, each platform as mentioned before attempt to partake in remediation of each other. Currently each teleconferencing platform have a large degree of similar functionalities and capabilities. These platform capabilities include background blurring, screen sharing, remote access, virtual backgrounds, virtual makeup, reactions, mute, camera functions and more. Each platform tends to take on the trends of other platforms in attempt to be a hybrid platform most closely resembling a conversation. With the large amount of remediation taking place in teleconferencing platforms, it becomes clear that these platforms are failed attempts at creating a immediacy of an actual conversation. Almost all platforms attempt this and fail, one platform that is successful at creating a hypermediacy of a conversation is FaceTime. This may be attributed to the lack of controls that the app seems to have. Platform capabilities that extend beyond simple functions seem to create further barriers to communication by straying away from what feels like an actual conversation. The capabilities often make one hyperaware that they are in fact using a digital platform and are not interacting with an individual or individuals directly.

How the platform of Zoom is created and built, the platform attempts to remediate an in-person conversation but fails drastically due to this hyperawareness of the fact that they are using a digital platform.

RQ3: What types of communication apprehension are found on Zoom?

Through the interviews it was found that in teleconferencing environments all typical types of communication apprehension were found. Situational, Generalized, Trait like and Person Group CA were all found to be present upon analysis of the interviews. However, in addition, it was found that Technological CA also exists in the teleconferencing environments. Technological CA takes the idea of computer anxiety a step further. Computer anxiety is defined

as one's level of communication apprehension as relating to the usage of technology (Indiana University et al., 2004). Computer anxiety is commonly found and dealt with in surrounding being apprehensive about the skills used when using a technology. The technology CA found in this research is more strongly related to oral computer mediated communication processes and can be expanded further. The research led to the conclusion of technological CA being the anticipated level of communication apprehension as related to technology's ability to interfere with the process of communication. Technological CA can be ascribed to the platform itself in the process relating more to the typical computer anxiety and relating to anxiety outside of one's control interfering with the communication process.

Some examples of technological CA in relation to how teleconferencing platforms are built in features. In interviews many participants found that their apprehension was increased due to how the platform was built. All participants who identified as Black and Asian, mentioned that when using the platform, they experienced CA apprehension surrounding camera usage specifically. Black participants stated that the technology itself can be very discouraging due to how it is created very white centrically. Participants stated that when they chose to wear their natural hair, they were unable to use virtual backgrounds and utilize the blur background function as the platform did not acknowledge their natural hair and cut out that portion when using the features. From this they stated they were less likely to communicate and have their cameras on in many scenarios. Further research will also expand on these aspects despite not being relevant to this research the large amount of discussion around microaggressions on teleconferencing platforms is important to address.

Participants also stated that the technology caused them to feel like they had to be more prepared and feared Wi-Fi going out and mute issues. They felt this impacted their levels of

apprehension when communicating from having technology paranoia, constantly fearing they were on mute and were not being understood. The small screen size of participants played into this level of technology CA as the amount of non-verbal communication was minimized and could not be relied on.

On teleconferencing platforms, technology and CA as a whole is increased by the lack of non-verbal cues that can be seen. Non-verbal communication is critical to our understanding in communication and is a huge part of the communication process. In teleconferencing the reduction of the visual scale of individuals changes how we are understood and if the messages that are being received.

" Expression and sometimes that can be very like hard to distinguish I've had some people be like literally blank stares just like yes cool awesome and I'm like that's not going to help like if you need to be visually more appealing more in agreement nodding and just like oh my God I love this or yes, what are your feelings because it's hard to like extinguish that and, for me, I need to know that."

From this and the ability to turn ones' camera, the platform increases CA as a whole from how the platform is built to not be conducive to the communication process. Participants stated that they began finding other ways to make sure that they were being attentive audience members by experimenting with what types of non-verbal communication could aid in making the communication process easier. One participant stated that they found themselves heavily nodding while on Zoom calls as this is one non-verbal type of communication that can be easily seen. Another participant stated using the reactions when agreeing with the conversation that is a built-in function of the platform. The expansion of reactions in teleconferencing platforms shows

the awareness of the platform developers that communication relies heavily on non-verbal cues as well.

Participants also stated that they began using more verbal communication while in teleconferencing settings. However, this communication was not oral. The communication type was written messages through using the chat function on meetings. Participants used the chat function to send both messages to the whole meeting and participants individually to show their agreement in what was being said to lower their apprehension.

"Sometimes I'll have thoughts and in an organic conversation, you can like indicate that you want to say something to interrupt somebody. But you can't do that when someone time ago homeless locally to like I'll use the chat feature to be like Oh, I also felt this way about something and then like you can have side interactions like side conversations. There's no other way to do that in teleconferencing than the chat function"

This is one feature that is vastly different than in-person communication, as it gives the platforms the ability to have two conversations at once. Having this ability is a positive for many individuals however some find that this ability is distracting as the conversation can quickly turn away from the topic being discussed at hand, creating difficulties for individuals who are trying to remain present in the conversation occurring over video and the thoughts appearing in the chat.

One participant described the chat function as the in-person communication equivalent of passing notes. In in-person settings, passing notes for most cases is viewed as a negative action being heavily associated with distraction and disrespect. However, in teleconferencing situations, the chat function is not viewed in a negative connotation. Individuals' way uses the chat function to avoid experiencing communication apprehension while still sharing their ideas and

contributing to the conversation taking place. Participants stated that they felt less nervous to post in the chat than rather verbally stating a point or question as they felt it was less intrusive to what was currently happening.

"The chat function helps when you don't want to interrupt whoever that is talking. It's kind of like a way of interrupting that's not rude."

Many individuals found that responding to questions in teleconferencing platforms felt intrusive and disrupted the flow of conversation and would rather choose to not speak to avoid potential CA.

In addition to these themes presented above, the following factors of communication apprehension based on the theory of communication apprehension were found to exist in teleconferencing settings. The factors found were novelty, formality, and conspicuousness. Novelty in communication apprehension was found to be present at the beginning of the each of the participants teleconferencing journey. Each participant mentioned that at the beginning of the COVID-19 pandemic they experienced large amounts of nervousness centering around teleconferencing since they were not used to this mode of communication in everyday life. As time went on this apprehension dramatically reduced from being forced to use the platforms. Both participants specifically used the term "forced" when discussing teleconferencing platforms, showcasing that they both did not feel as if they had a choice in adapting to the platform. Participants noted that within the first few weeks they no longer felt apprehension over using the platform because they were familiar with it at this point. However, one participant mentioned that each time they used a new teleconference platform they felt large amounts of apprehension as they do not know how the platform works. The examples that were brought up concerning their comfortability were Zoom and the platforms that were brought up in which they

still experienced novelty communication apprehension were Google Meet, Webex, Cisco and BlueJeans. Comfortability does relate to usage rates and the features that are in the platforms. The more familiar individuals are with the settings they more comfortable they were in communicating. One participant in particular spoke about their nervousness to communicate because of unfamiliarity with settings,

"I use Zoom but not as much as during the height of COVID. I would say prefer to zoom the most because I am most familiar with it. I suppose though it's kind because there are not that many teleconferencing options. There probably are more now, but I know Zoom I know where the commands on Zoom are. I know how to use them, and I know how to use the platform in the app and browser, so I feel the most comfortable using the platforms. I don't like using other platforms because I don't know the commands, I don't know how to leave, how to unmute, and I don't know everything. I don't feel comfortable because I don't know the platform. I feel the most nervous on these platforms where I know nothing and have to use it."

This showcases that novelty occurs in relation with platform, in addition to overall comfortability communicating in teleconferencing settings. The next factor of communication apprehension that was found to be true in teleconferencing was formality. Formality communication apprehension remained the same for the participants as in in-person communication. No differences were found between the two situations, participants were just as nervous in most cases communicating with professors and superiors over teleconferencing platforms as they are in person settings. In some cases, participants were more nervous communicating with superiors due to not being able to read body language over the platforms suggesting technology may be a factor in communication apprehension in teleconferencing.

The final factor that was observed was conspicuousness in communication apprehension. All participants mentioned that they had a heightened sense of awareness on teleconferencing platforms and were overly paranoid of what people thought of them while communicating. The main reasons why participants felt this way was because, they could see themselves, backgrounds, and being able to be seen. Having the ability to see yourself resulted in a more critical evaluation of their appearance and brought up new insecurities about how one looks while talking or engaging in conversation. This heightened sense of awareness in communicating did not appear to carry-over to in-person communication. When in-person, they were not concerned about how they looked as they could not see themselves. Seeing themselves in the present of communicating is a trigger for consciousness in an online setting.

Both participants mentioned that they felt a stronger need to look physically ready for teleconferencing calls than they do in in-person communication settings. One participant accounted this for being physically present and in the right headspace to do work and one participant accounted this for having to see themselves on the call. These findings showcase the complexity of the teleconferencing environment and how the additional layer of technology increases the potential of communication apprehension.

RQ4: Does Zoom apprehension affect levels of communication apprehension when in-person settings?

After being forced to use teleconferencing platforms this became a question of how the technology affected if it all one's ability of in-person communication. Through the research that was conducted it was found that teleconferencing usage did affect levels of communication apprehension in in-person settings. Two main ways of the effect of teleconferencing on in-person communication was found. The first found was that the high usage of teleconferencing platforms

and forcing individuals to communicate in a new and unexpected way positively, affected one's level of communication apprehension in-person. One participant stated that they felt less scared to speak up in-person settings from their time in teleconferencing as it made the process of less intimidating. Their teleconferencing usage allowed them to grow their confidence on communication skills as a whole and was translated into in-person settings. Participants stated as well that overall, their teleconferencing usage made them less self-concerned and grew their confidence as a whole. This was due to realizing that everyone in the communication process is nervous and thinking about themselves a lot more than they are about the other person. This was realized through their hyperawareness of self in the teleconferencing setting.

One participant also stated that they felt their apprehension in-person settings lessened as they were more aware of non-verbal communication that could help them be better communicators as whole. They felt that the teleconferencing usage forced them to look introspectively about how they communicated and learn more about how to effectively communicate. Their skills grew through understanding when to speak, when to not, the importance of non-verbal communication, paralanguage, and the benefits of silence. They feel as if they have grown in leaps and bounds because of their usage of the teleconferencing platforms.

Some participants felt that their communication skills for in-person communication worsened and had higher levels of CA. Participants stated that they felt that they had to retrain themselves to communicate in in-person settings. Returning to in-person settings after having heavy usage of teleconferencing settings, they experienced what they felt to be an increase of CA. This increase in feelings of CA also came with the presence of physical symptoms of CA. The participants stated that they felt their overall confidence and ability to communicate after returning to in-person communication was stunted. They felt that they had to relearn how to

communicate during in-person and greatly invest time and effort to bring their skills back up to what it used to be prior to their heavy usage of teleconferencing platforms. One participant accounted this to having the ability to not be an active participant in teleconferencing settings. Rather than having to be involved in communication they simply could be observers while in-person communication being an observer is more difficult. In teleconferencing situations, this participant stated that they frequently chose to have their cameras off which they felt contributed to their lack of communication skills as they only had to be involved to the lowest extent with this capability.

While the interviews found that levels of CA in in-person communication greatly varied after using teleconferencing platforms, it is clear that teleconferencing has impacted individuals in person communication to an extent. This is important to note as the world shifts to hybrid modalities, by figuring out how to help users effectively communicate in both platforms, we can increase communication skills to adapt to advances in technology rather than being stagnant. By adapting to both scenarios, we are helping individuals be effective modern communicators no matter what situation they are presented with, which is vital in today's highly interconnected world. While we can adapt our practices, these findings are important as we can see that how people choose to interact with the platform changes their communication skills and apprehension.

Discussion

The goal of this study was to explore the emerging technology, teleconferencing, and how this greatly adapted modality of communication by society is changing how individuals communicate closely examining the communication process and focusing on how communication apprehension exists in this new terrain. This study sought to explore the impact

of teleconferencing technologies, specifically examining teleconferencing platforms and how communication apprehension manifests itself in online scenarios.

The results of the study found that communication apprehension does exist in teleconferencing settings. The study further examined what type of settings communication apprehension appeared in exploring business, academic and social settings. It was found that communication apprehension in teleconferencing appeared the most in business and academic settings. Participants of the study stated that they were less likely to or had no communication apprehension when using the technology for personal interactions. This may be accounted for due to the degree of familiarity they experienced with friends and families on this platform. This supported current research on oral communication apprehension in personal settings.

The study supported and built upon the following forms of communication apprehension outlined by McCroskey: Situational CA, Person-Group CA, Trait like CA, and Generalized Context CA, finding that these forms of CA are still applicable in the teleconferencing environment (McCroskey, 1984). The findings of the study did not showcase any individual experiencing the form of CA, known as pathological CA, which is why the results do not touch on this topic. Pathological CA is a form of communication apprehension in which individuals experience abnormal levels of CA (McCroskey, 1980). This abnormal level of CA, can be high when no fear or danger is present and no CA when fear or danger is present. In both cases, this is known as pathological CA and would require help from professionals to manage. Pathological CA is not a mere moment of abnormal responses in situations but a consistent pattern of these issues (McCroskey, 1984).

The findings of this study also expanded upon the current forms of communication apprehension discovering that there are more perspectives of communication apprehension that

appear when in the teleconferencing environment compared to in-person oral communication. The main finding is the existence of Technological communication apprehension. Technological CA is closely related to the concept of computer-mediated communication anxiety (CMC). CMC anxiety is “the tendency of individuals to be uneasy, apprehensive, or fearful about current or future use of computers” (Igbaria and Parasuraman, 1989, p. 375). The communication-based anxiety found in the study is more expansive than CMC anxiety and builds off this concept. Technological CA encapsulates CMC as the findings of the study did show that the lack of familiarity associated with various teleconferencing platforms did increase CA in these situations. However, the anxiety was centered around not knowing the technology and being fearful of the perception of others rather than a fear surrounding the usage of technology. Technological CA also includes anxiety related to the storage and security of the information being collected by teleconferencing companies which through the interviews showed that it was an area of concern for many individuals. These fears influenced individuals' comfortability using the platforms and what information they wished to share and the extent of it. Based on the findings of the study, Technological CA would be best described as anxiety surrounding communication with technology across time. This type of CA would change depending on a myriad of different factors including the type of platform being used, associated technology fears, and perceptions of individuals due to technology. This type of CA would include fears associated with microaggressions and representation, where differences are made noticeable and highlighted due to the manner in which the platform was created. The level of Technological CA an individual would experience would be heavily associated with the level of fear one faces with using technology as a whole. Factors such as age and technology knowledge may also play a role in their baseline fear of using CMC technology. Such information is needed to be taken into

account when determining an individual's level of CA, however, as the purpose of this study was exploratory in nature more research can be conducted to confirm and expand upon the findings of the existence of Technological CA.

The study also found the presence of new factors that have not been previously considered that influence levels of CA in teleconferencing settings. These new factors that were found were, inconspicuousness, privacy, hyperawareness, congruity, and control. More factors may exist that were not found in the results of this research. As the research was exploratory, the results are not generalizable to a larger population necessarily, the factors found in the research can open the door to more research being conducted in a quantitative matter. These factors are a jumping off point for more research. However, these findings are still relevant as it found aspects that may have never appeared if research was done only quantitatively. The findings of the study supported previous research of CA, by confirming the existence of known CA factors in teleconferencing environments. The known factors that were supported were novelty, conspicuousness, formality, familiarity, degree of attention from others and subordinate status. Other factors that influence CA may occur in the teleconferencing environment but were not found in this research. The known factors that supported previous research, can be seen in the PRCA-24 test. The PRCA-24 test is the most used scale for conducting research into oral communication apprehension. The scale is reliable and can be adapted for further research to empirically prove the existence of the new factors in the teleconferencing environments.

All factors found in the research led to the emergence of six prevalent themes. The six themes were voyeurism, presentation, security, participants level of association, hypermediacy and remediation. These themes make sense when we think of the technology as a platform affecting the communication process and the user's interaction with technology itself. Separating

the communication process from the technology of teleconferencing cannot be done and is critical to examine both dimensions of teleconferencing to holistically understand teleconferencing's impact on communication apprehension.

The roles screens play in culture and everyday lives is important to study and to better understand the impact they have on the world. To ignore teleconferencing technology as being part of screen culture would not give the full picture of the technologies impact. If we understand the screen culture of teleconferencing technologies, society can figure out how to best adopt standardized practices to best allow the flow of communication. By creating this, there would be a culture of teleconferencing. Individuals knowing the culture of teleconferencing may mitigate the apprehension felt while communicating on these platforms.

One aspect of the teleconferencing environment that is a part of the technologies culture is security. Security is an important theme that must be addressed when examining any type of internet-based technology and is crucial to our understanding of the apprehension surrounding teleconferencing platforms. Since the COVID-19 pandemic, teleconferencing platforms have been used personal, professional and academic settings. During the peak of COVID-19, more than of individuals in the United States were using these platforms to go about their daily activities. With these technologies being used for all aspects of life and the usage continuing for both professional and academic purposes, these platforms became highly intrusive in people's life. The intrusion came with the technologies being able to collect vast amounts of information on each user of the platform. While the data information statements from platforms like Zoom stating that they have no plans to share this information with third parties, the terminology used is fairly ambiguous (*Privacy*, n.d.). In the past, ambiguous privacy statements that have been made from other internet-based technologies such as Facebook have changed and impacted the

ability that is shared with third party companies (*Judge Approves \$650M Facebook Privacy Lawsuit Settlement*, 2021). The third-party companies often use the information to market and sell products to individuals.

The information used can make users life better obtaining advertisements that are suited to their interested and help marketers find their target audiences more easily, the data can also be used to an extent that makes individuals feel uncomfortable Target, the company, has been found to have advertised to users heavily with information about their users, that many felt it was invasive. The corporation advertised a woman coupon and baby-based mail adverts based upon her searches before she had announced to anyone, she was in fact pregnant. This level of surveillance while beneficial directly infringes on one's security and most importantly sense of security (*How Target Figured Out A Teen Girl Was Pregnant Before Her Father Did*, n.d.). Sense of security is an important aspect as the sense of security allows individual to continue to accept new technologies.

As the world is a data dependent time period with no hopes of slowing down, the sheer amount of information that is being collected on individuals is exponentially increasing as everyone's digital footprint grows. With how intrusive teleconferencing technologies are, having the ability to collect information on our lives from personal to professional aspects, it is important to users to have security, which has been found in the research. Through the research, it was found that apprehension in communication to an extent stems from their sense of security while using the platforms Teleconferencing platforms and the associated camera usage collect information about yourself and location visually while also collecting information about your IP and what is being discussed. Teleconferencing platforms intimately see all aspects of an individual's life and there is a great concern that this information may be used against the user.

The camera usage of teleconferencing platforms is another aspect that can be greatly seen in the next theme that was found, Voyeurism. The concept of voyeurism and the "gaze" can be heavily seen in the findings of the research. Voyeurism as previously mentioned is the act of watching. In teleconferencing settings users have the ability to watch or gaze which is amplified by the technology (Caines, 2021). The ability to gaze is amplified due to the technology increasing the amount of visibility. As visibility is increased, it shows and magnifies one's ability to view oneself.

The teleconferencing technology allows any user to view themselves consistently through their meetings. Users are able to examine themselves through a mirror essentially. The screen is now being used as a mirror. This is able to happen due to the failed immediacy of the platform. Rather than interacting directly with the individuals, the user must interact first with the screen. By interacting with the screen first and through the platforms ability to see oneself, it takes on the role of a mirror. When someone see's their own reflection they begin to be a voyeur to themselves, objectifying themselves. In a myth of Narcissus type way, users become hyperaware of their reflection and their representation of themselves in real-time. Users begin to question and fix their appearance as they notice "issues" in their representations of themselves. The hyper-awareness causes many persistent questions to occur in an individual's mind, *"Do I REALLY look like that when I talk?", "My hair is out of place... I must fix it", "Why do I seem like I'm not enjoying this, I better look happier."*

The gaze of oneself causes issues between their authentic self and represented self. An individual's authentic self is how they perceive themselves and represented self is how others perceive the individual. When interacting with teleconferencing platforms and individuals authentic and represented self-become blurred. Self-surveillance becomes the forefront of the

gaze attempting to merge the authentic and represented into one reflection. Self-gaze allows us to be a voyeur of ourselves and normalizes self-scrutiny to the highest extent (Sumner, 2022). The ability to self-survey and become hyper aware of oneself was revealed in the findings of the study to impact negatively individuals' level of communication apprehension. The findings of the study showed that the voyeurism that exists in teleconferencing platforms only begins with oneself.

The teleconferencing environment allows the users to not only be the observer but the observed as well, fluctuating between the two roles. The screen in teleconferencing allows participants in the meeting to gaze upon others, causing each participant to simultaneously be the observer and the observed. As stated previously, the ability to gaze is able to occur from the failed immediacy of the technology. Before interacting with others, you must first interact with the screen itself. By interacting with the screen first, you as the user acknowledge that you are indirectly interacting with the participants. The screen is now barrier to the communication process. Rather than interacting with the person as you would in a face-to-face conversation, you are gazing upon the individual. The participants are now all objectified and seen as an object from the gaze.

Each objectified individual is seen as one object with their background. The individual is seen as one with their background and anything shown in their frame. The frame includes any visual aspects that can carry meaning such as lighting, backgrounds, clothing and more. The individual begins to be viewed similarly to a photograph. Anything shown in frame is now viewed as a choice to feature it within the lens of the camera. The exclusion and inclusion of different element within the camera's view begins to a conversation with the observer, giving them insights into who that individual is and how they are being represented.

While the camera usage increases visibility in attempt for better online communication, the visibility allows for users to simultaneously be the observer and the observed. The increase in visibility is quite invasive leading to high amounts of surveillance occurring in teleconferencing environments (Nunes & Ozog, 2021). The surveillance that exists in teleconferencing is another form of gaze that is felt.

The gaze of surveillance surrounds positions of power. How the technology is created with the ability to gaze upon others and be seen allows a panopticon effect to take place. The panopticon metaphor by Foucault can be applied to better our understanding of the technology (Caines, 2021). The panopticon is a design for what some would consider to be the "perfect prison". The panopticon structure was proposed by Jeremy Bentham who was a structuralist and sociologist scholar. The idea was to build a prison structure that functioned as social control mechanism.

The structure itself was a circular building where the prisoners' cells would be arranged along the back wall. In the center of the structure would be the all-seeing guard tower that allowed guards to see any prison cell at any time. Due to the design of the prison, the cells could only see and interact with the guard tower. While the guards in the tower could always see the prisoners, the prisoners could not see whether or not there were guards in the tower. From the design, prisoners would not know whether or not they were actually being watched. However, the structure of the design allowed the fear of constantly being watched to be incited (UCL, 2018). The panopticon design would allow for the feeling of constant surveillance to be instilled in every prisoner.

Today the concept of the panopticon is a symbol for modern authority and discipline in the Westernized World. While many critics believe that the panopticon theory and Foucauldian

metaphor of the panopticon presented by Foucault cannot be applied to modern theory, there is a relevancy teleconferencing that connects to the findings in this research. With the introduction of the internet and surveillance on the internet in the post 9/11 world, the idea of the panopticon becomes more relevant than ever. With teleconferencing technologies being highly invasive surveillance can be felt when the platforms are being used. As teleconferencing is being used for personal, professional and academic settings, the panopticon power of the gaze is heavily felt (Nunes & Ozog, 2021).

The panopticon's gaze can exist from how the teleconferencing technology is created involving camera usage, forcing participants to always be seen and always watch without knowing who is watching. The Foucauldian metaphor of the panopticon which has been discouraged in the application of computer-mediated communication technology is supported when examining teleconferencing environments. In *Discipline and Punishment*, Foucault considered those observed through the Panopticon as objects to be observed, with no power to turn the gaze back toward. In teleconferencing environments, the invasive power of the observer exists infiltrating all aspects of an individual's life, especially during the COVID-19 pandemic (Nunes & Ozog, 2021). The power of the panopticon does exist within the role of the users, yet this is not the only feature where this power can be seen.

The findings of this study also showcased the panopticon power that these platforms themselves hold - collecting data, extracting crucial information about its participants and exchanging it. The society that the world exists within is heavily interconnected and dependent on the internet. With generations of the world being chronically online, the world has been changed to a data driven and dependent world. The constant online monitoring and ability of teleconferencing to collect obscene amounts of data on each individual user needs to be heavily

examined as communication technologies progress. The importance within this exists to allow for lessened amounts of communication apprehension in individual while using these settings. If individuals feel the panopticon power to a highly elevated extent the benefit of the platform is taken away. If a user does not feel the ability to communicate freely and without heavy supervision or scrutiny, we cannot expect effective communication to occur.

This results in individuals attempting to take back their power by turning off the camera to not be seen. The lack of camera usage then creates a vicious cycle where the black screens rather than mitigates the feelings of the panopticon, increases it for those who wish to have their cameras on (Nunes & Ozog, 2021). Regardless of the camera usage, the panopticon effect remains.

Limitations

The main limitation of the study is that because it is exploratory in nature, as with all qualitative research, this study is not generalizable to a larger population. However, as noted earlier, qualitative research produces rich data that is detailed with descriptions of participants' feelings, opinions, and experiences which was the goal of the study (Denzin, 1989). The research does open up the door for quantitative research to be conducted and generalized to a larger population. Another limitation is that the majority of the sample were college aged students and recent graduates.

Another limitation of the study was that it was in fact conducted over Zoom, a teleconferencing platform, this may have affected the respondents' answers. Completing the interviews over Zoom did allow for access to a larger population rather than drawing on people in direct vicinity. The platform also allowed for a reduction in recency bias as they were directly

interacting with the platform as they were speaking. More limitations may exist in the study that have not been discussed.

Further Research

The findings of this study hold implications for future research and other applications. A new theory could be developed based on the communication apprehension theory as there are notable differences for communication apprehension in an online setting. By specifically creating a teleconferencing-based communication apprehension theory, more research can be done to figure out further how it appears and ways to mitigate the apprehension. Through mitigation of communication apprehension on these platforms' trainings could be conducted to help people increase their teleconferencing communication skills to be more effective communicators in these situations. Having better communication skills in teleconferencing is quite important as remote working remains at an all-time high and online learning continues to remain prevalent.

As showcased in the discussion, this research has uncovered many different facets of teleconferencing that affect communication as a whole and communication apprehension. Future studies may want to explore factors such as security and data collection. Understanding and exploring if the collection of data on teleconferencing platform is worth the possible compromise of privacy and confidentiality should be explored. Examining if the communication process is impacted by the collection of data when dealing in virtual communication modalities, especially when thinking about the role of the camera as an intrusive tool. Understanding if there is a benefit to the communication process or a benefit to the individual should be examined as we continue to advance technology. In a data driven world, the vast amount of data being collected everyday may never be used. Some studies may focus on privacy, security, and surveillance.

Differences between individuals are amplified in teleconferencing settings and should be further explored in research. The term difference is almost synonymous with the concept of otherness. At its most basic definition, otherness is the quality or fact of being different (Oxford Dictionary, n.d.). Despite this rudimentary definition that sums up the underlying definition of the concept and its relation to difference, despite this being at the core, we know that otherness and the concept of the other are far more complex than difference alone.

Otherness is a multidimensional concept that encapsulates noticeable differences in race, ethnicity, gender, sexuality, class, and disability. Otherness is directly linked to identity, belonging, and community. However, "Otherness" does not seek to uplift individuals based on their differences and celebrate them, instead the concept of otherness and the act of othering seeks to devalue individuals and groups of people based on them signify fundamental differences.

As teleconferencing is a visually salient technology, the concepts of othering can be applied to teleconferencing and examined through the creation of the platform. When a piece of visual communication is examined, there is the discourse of the image and the text surrounding the image. When viewing a visually salient piece of technology such as teleconferencing, the multiple discourses that exist are the discourse of each individual and what they are showing, this can be viewed as the image and the discourse of the platform itself. The discourse of "othering" that can occur in teleconferencing platforms, to an extent is built into the software.

In the interviews, multiple participants noted their experiences dealing with microaggressions on teleconferencing platforms. Some of the microaggressions noted were dealing with light, camera usage and settings that were created without minorities in mind. It is clear that the platforms may not have been created with a diverse set of employees, as many of

them are white centric. Not all platforms recognize natural hair when applying blurred and virtual backgrounds. It has been heavily noted that platforms such as Zoom did not recognize black skin when using virtual backgrounds (Colin Madland [@colinmadland], 2020). This experience of the platforms does not recognize key elements of an individual's identity, appearance and how they represent themselves is critical to complete further research into from the development side of these platforms and the effect that this has on different communities.

Meaning is derived from visual aspects and noticeable difference according to Hall. Hall states that these differences signify and speak for those being represented, amplifying the meaning that has been created. When technology has been created without broadly examining the various communities who may use the platforms and how different settings may affect individuals' experiences, those differences are made more visible by the platform. The extended amount of visibility that exists to the users of themselves and fellow participants, may allow for othering to occur by the "in-group" and the individual.

To create othering and difference, a viewer is needed to engage in a dialogue with the image. The meaning of the difference is then created based on this interaction (Bakhtin pg. 225). Without the viewer when discussing a visual image, the individual cannot be "othered". As teleconferencing technologies allow for oneself to be a viewer, the othering can occur from within taking note of the differences that are being enhanced by the platform. Further research needs to be done on othering and how the technology is created may invoke microaggressions.

Visually salient technology such as teleconferencing is critical to be further examined because of the power these platforms hold, due to the representation of oneself and others. Images are always connected to power, creating discourse. The discourse can occur surrounding power dynamics involved in the representation of stereotyping, othering, semiotics, and the

creation of the technology itself. This is relevant to research as shown by discussions that occurred during the interviews, where individuals noted their experiences of othering in teleconferencing environments.

As this research was exploratory in nature future studies should be conducted in both a quantitative manner and qualitative manner. A quantitative study can build and further explore the findings presented in this study. This could be explored in multiple formats; one way would be by adapting the PRCA-24 scale that was developed by McCroskey. Questions could be added for technological CA to advance and further prove the existence of this new perspective to the theory. As the PRCA-24 is an established scale, adapting it specifically for teleconferencing would be beneficial to expanding society's knowledge of communication apprehension in virtual modalities. This is increasingly important as the world begins to continue hybrid modalities after the COVID-19 pandemic.

Conclusion

Communication apprehension plays a considerable role in teleconferencing settings affecting how people communicate and interact while on these platforms and in virtual environments. Moving forward it is critical to acknowledge and deepen societies knowledge on this area, as teleconferencing is a new form of communicating that will not be disappearing from the world. Increasing the world's understanding of communication apprehension in teleconferencing settings will allow individuals to become effective communicators no matter what the format that their conversations are taking place in.

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Appendix

Appendix A: Interview Questions and Protocol

Introductory Protocol

To help us in our notetaking, we would like to record our conversation. The recording will help with the accuracy and accurate account of our conversations. Please sign the release form if you are comfortable being audio-recorded. Only researchers on this project will have access to the recordings, these recordings will eventually be destroyed after transcription takes place. These recordings will be saved in the Zoom cloud. In addition to signing the form to be recorded, you must also sign a form to meet our human subject requirements. In short, the document states that: (1) all information will be held confidential, (2) your participation is voluntary, and you may stop at any time if you feel uncomfortable, and (3) we do not intend to inflict any harm. Thank you for agreeing to participate in the study.

The interview will last no longer than an hour. During the interview, we have multiple questions that we would like to cover and address in-depth. Due to our time constraints, if time begins to run short, it may be necessary to interrupt you to finish and complete all the questions in the interview.

Introduction

You have been selected to be interviewed today as you have been identified by yourself or by someone else, as someone who is a user of teleconferencing platforms such as Zoom, Google Meet, Microsoft Teams, etc. The research project we are conducting explores communication apprehension and how it takes place on these platforms. The study aims to gather

your expertise and insights through your experiences. Through this study, we are trying to learn more to help communication over digital conferencing platforms become more effective.

Questions

1. Interviewee Background

1. When did you first find out about teleconferencing platforms?
2. Was this the same time you started using teleconferencing platforms?
3. How long have you been using teleconferencing platforms?

2. Interesting Background information on the interviewee:

1. What is your degree level?
2. What is your field of study?
3. What is your profession?
4. What teleconferencing platforms do you use?
 1. Which do you prefer the most?
3. Can you recollect a time while teleconferencing when you felt nervous, uncomfortable, or self-conscious?
4. What factors do you think contributed to these feelings?
 1. Probes:
 1. Shifting Screen Size? Chat Functions? Hyper-awareness of yourself?
Background?
 2. Are there any other notable teleconferencing moments that you would like to share?

5. What factors are the most important to make you feel comfortable and at ease in teleconferencing?
6. What factors of the telecommunication environment bring you stress or put you at ease while communicating?
 1. Probes:
 1. Why does this factor bring you stress/ease?
7. How does having your camera on during a teleconferencing meeting affect your comfort level in communicating?
 1. Probes:
 1. Tell me about how having your camera on during a teleconferencing meeting makes you nervous...
8. What is your comfort level when other people have their cameras on in a meeting?
 1. Probes:
 1. Do you feel more or less nervous when other people have their cameras on in a meeting?
 2. How do you feel when you are the only one with a camera on in a meeting compared to when all participants have their camera on?
9. How does your own real-life space affect your comfortability in communicating in a teleconferencing setting, if at all?
 1. Probes:
 1. Does your real-life space affect your nerves when communicating in conferencing settings?

10. How does your own perception of yourself in conferencing settings make you nervous and affect your comfortability in communication?

1. Probes:

1. Do you use settings that allow you to see yourself?

11. While teleconferencing, in what environment do you feel uncomfortable speaking with others, in small groups, larger groups, or one on one settings?

1. Probes:

1. Why do you feel most uncomfortable in this setting?

2. What factors do you think contribute to these feelings?

3. What environment do you feel most comfortable communicating in?

12. What environment do you feel most comfortable communicating in, in an in-person setting?

1. Probes:

1. What factors do you think contribute to these differences in comfortability?

13. Are there any specific aspects of teleconferencing that made you uneasy with communicating?

1. Probes:

1. Some examples are having your camera on, not knowing who is going to speak next or even being paranoid about your background. These are only a few of the many factors that exist, do any stick out as a cause of concern in your experience?

14. Do you use the chat function in meetings?

1. Probes:

1. How do you use this function?
2. Does the chat function affect your comfortability communicating and how?

15. What are some factors in a teleconferencing meeting that increase your comfort in communication?

1. Probes:

1. What do you prefer a host do in a meeting?
2. Do you prefer having your camera on?
3. Do you prefer others to have their camera on?
4. Do you think these factors impact communication?

16. What is comfort in communication when you have to participate in a teleconferencing meeting?

1. Probes:

1. Does this change when you are more familiar with the people you are meeting with?
2. Does this change depending on the familiarity of the platform you are using?
3. Does this change depending on the amount of people you are speaking to?

17. How do you feel about teleconferencing communication compared to in-person communication?

1. Probes:

1. Do you feel more nervous in one situation than in the other?

2. Do you feel more confident in one situation than the other? Why?

18. What fears do you have, if any, while communicating on teleconferencing platforms?

1. Probes:

1. If you have fears, what are some of these fears?

2. Are these related to different aspects of the platform?

3. Are these fears you have already when communicating?

19. Have there been any communication challenges that you have faced with teleconferencing?

1. Probes:

1. What are some of these challenges that you have faced?

2. Did you overcome these challenges?

3. Are these ongoing challenges?

20. What are the different teleconferencing situations that you feel most comfortable in?

1. Probes:

1. Do you feel the different situations affect how confident/comfortable you feel?

21. When communicating in small breakout rooms, how do you feel in these settings?

1. Probes:

1. Do you fear speaking up in these situations?

2. Do you feel tense?

3. between the two settings?

22. What was your familiarity with teleconferencing and teleconferencing platforms before the COVID-19 pandemic?

1. Probes:

1. How did you learn about teleconferencing?

23. How would you describe your teleconferencing usage during the pandemic?

1. Probes:

1. What would you consider your usage level?

2. What did you use teleconferencing platforms for?

3. How did you feel about becoming familiar with a new way of communicating?

24. How do you feel your communication has changed using teleconferencing platforms?

1. Probes:

1. Did you feel more comfortable on the platform?

2. Do you think your level of communication changed on the platform?

25. How would you describe your teleconferencing usage now as we move back into a "new normal"?

1. Probes:

1. Compared to during the pandemic, how has your usage level changed?

2. What are you using teleconferencing platforms for?

Post-Interview Comments/Observations: