

## **Keep Talking and Nobody Explodes: The Effect of Nonverbal Cues on Collaboration**

By: Zakaria Wilson

### **Abstract**

“Welcome to the dangerous and challenging world of bomb defusing. . .” (Keep Talking and Nobody Explodes: Bomb Defusal Manual, 2015). This is the introduction to the manual for the video game Keep Talking and Nobody Explodes, a game focused on effective communication between players to successfully defuse virtual bombs before time runs out. The research question of the current study is to discover if presence-based, nonverbal cues (such as facial expressions and body language) are important to complete collaborative tasks (defusing a bomb) effectively. Previous research suggests a split, with some studies supporting the importance of body language, and others suggesting that it provides no significant advantage whatsoever. Sixteen undergraduate students were recruited for the purpose of the current study. They were asked to complete a survey establishing their familiarity with the task and their demographic information before beginning the bomb defusal game. Eight teams of participants were formed; four teams defused the bomb using remote communication (over the phone), while the other four sat across from each other. After defusing the bomb, participants’ time remaining, in seconds, and number of mistakes made while defusing were recorded, as well as the number of additional attempts necessary to achieve defusal. The hypothesis was that remote teams would perform worse on all measures, yet the results show no significant differences between the conditions for all variables. This result suggests that non-verbal communication cues are not important enough to negatively impact collaborative work.

*Keywords:* Body Language, Facial Expressions, Collaboration, Communication

### **Keep Talking and Nobody Explodes: The Effect of Nonverbal Cues on Collaboration**

“Welcome to the dangerous and challenging world of bomb defusing. Study this manual carefully; you are the expert. In these pages you will find everything you need to know to defuse even the most insidious of bombs. And remember – One small mistake and it could all be over!” (Keep Talking and Nobody Explodes: Bomb Defusal Manual, 2015). This is the introduction to the manual for the video game Keep Talking and Nobody Explodes, developed by Steel Crate Games. It is a game focused on effective communication between players to successfully defuse semi-randomized, virtual bombs before time runs out and without making too many mistakes. There are two roles: bomb defuser and manual expert. Each has information the other needs to know in order to solve the many different miniature puzzles (known as “modules”) present on each bomb, and yet the rules state they are not allowed to directly view each other’s information but only communicate it to each other. This format also allows for remote play, where the players do not have to be in the same room since they do not have to see each other, only talk to each other through something like a phone. But this begs the question, is there a disadvantage to this style of play?

After the COVID-19 pandemic, many work and school environments were forced to adopt a remote style, and even today, remnants of that remote style still exist. One contested issue (especially with students) was that of using cameras for virtual meetings. While many felt it was uncomfortable and unnecessary, perhaps the extra nonverbal cues that it could provide were beneficial to the environment, especially when having to work collaboratively with others. The main focus here is information gathered based on facial expressions and body language, as those are often subtle yet essential to effective interactions. In the case of a forced task where communication and teamwork are vital (such as defusing a bomb), it would be important to

know if talking over the phone results in poorer performance compared to face-to-face discussion. So, are presence-based, nonverbal cues (such as facial expressions and body language) important to completing collaborative tasks effectively?

### **Literature Review**

#### *Face-to-Face Advantage*

One study that supports the importance of body language comes from Jabber and Mahmood (2020) where they documented their own experiences of living in China and attempting to communicate with the locals despite them being Iraqi and not knowing the language. Essentially, they focused on the universality of communication, as they not only crossed language barriers, but cultural ones too. Their methods simply listed detailed examples of the many situations they found themselves in, demonstrating what the issue was, how the people involved reacted, and what ultimately contributed to reaching a common understanding. Their results showed that despite the differences in culture and language, they were still able to communicate effectively enough to complete some fairly complex tasks. These tasks included directing a taxi driver with hand signals, asking for a lighter by miming the act of lighting a fire, pointing at a printer and paper to get extra copies, and so on. What this implies is that body language is a vital tool for communication, and, in my research, it may suggest that those working together face-to-face may have an advantage when it comes to performing their task.

Support for a possible advantage of face-to-face communication does not end there, as Bavelas, Coates, & Johnson (2000) investigated how listeners to stories actually impact the way the story is told by how their reactions influence the storyteller. They predicted that distracting the listener during the story would result in less specific responses to the story, which, in turn, would lead to the storyteller to put less effort into the story they are telling. In their experiment, they gathered 68 psychology students to form 34 pairs that were randomly assigned to two groups: listeners whose job was to best summarize the stories they had heard, and listeners whose job it was to accurately count how many words started with the letter “t” during the story. In other words, the independent variable was the absence or presence of distraction for the listener, and the dependent variable included categorizing the types of responses the listener gave and the quality of the story told. Specific responses including things such as looks of shock or gasps during dramatic moments of the story, while generic responses were head nods or simple “mhm” type responses. Then, based on the frequency of specific responses, storytelling quality was measured by looking for new emerging patterns such as stuttering or dragging on with pointless repetition. The results supported the hypothesis, as distracted listeners produced fewer specific responses and narrators with distracted listeners fumbled their dramatic endings. What is especially important to the current study is how many of the measured responses were nonverbal and could not be clearly communicated through a phone, suggesting that when a listener cannot demonstrate attentiveness through actions in critical moments, the emphasis from the communicator is lost.

Mooney et al. (2023) provided even further support for face-to-face when they conducted a study on how individuals with Primary Progressive Aphasia (PPA), a neurological disease that negatively impacts speech production, prefer to compensate for their lack of speech, which was often with nonverbal cues. To be more exact, they wanted to categorize specific forms of alternative communication and document how frequently they were used and how effective the PPA individuals felt they were. To obtain data for the study, the researchers recruited 41 individuals with PPA and interviewed them with three questions assessing whether they used a type of communication, how frequently they used it if they did, and how effective they thought it

was (the last two being measured on a 4-point scale). This was done for a total of 12 different methods of communication, which were grouped into three main categories: no-tech, low-tech, and high-tech. This study found that no-tech modes of communication were most frequently used, with low-tech being used least frequently, and high effectiveness ratings regardless of type. This is particularly of interest because no-tech included facial expressions and speech, while high-tech included texting and phone calls, which suggests that people may prefer communicating face-to-face, and that facial expressions lost through phone calls are particularly important to communication.

Perhaps the strongest evidence that face-to-face partners will defuse bombs better is from a group of researchers who recently investigated how different types of social interaction affect individuals' well-being (Kroencke, Harari, Back, & Wagner, 2023). Specifically, they investigated the importance of not only how the social interaction occurred (in-person, online, both, or none), but also the importance of the pre-established relationship of the two people interacting (peers, family, acquaintances, no relationship). The hypotheses were that in-person interaction would produce a greater sense of well-being than mixed interaction, online interaction would produce a greater sense of well-being over no interaction at all, and that the order of significance of the relationships would be peers, family, acquaintances, and none from greatest to least importance. To collect data, the researchers recruited a total of 3,174 introductory psychology students to answer Qualtrics surveys that measured all their variables of interest. Well-being was put on a 4-point scale covering three different emotions (content, stressed, and lonely). Interacting relationship was determined by a question where participants checked all conditions that applied and provided seven different relationships that were then categorized into the four groups of relationship type. Method of communication was measured by providing another checklist of 11 items that were then condensed into the four groups. The most important results of the study showed that in-person and mixed interactions were the groups associated with the highest levels of well-being (though the two groups themselves did not differ), and that peers produced the greatest benefits to well-being. This is relevant to the current research because it highlights the importance of establishing the relationship of partners before performing their collaborative tasks and making sure to account for it. Additionally, it supports the theory that face-to-face interactions are more impactful than over the phone communication.

*Evidence Against Face-to-Face Advantage*

However, in complete contrast, Lawson and Mayer (2022) performed research investigating the importance of tone-of-voice and how recognizable it is even without accompanying visuals. They hypothesized that voice alone may be enough for individuals to correctly identify emotional tone accurately without needing an on-screen agent. In order to test this, they designed a study with 100 participants watching 16 different video clips of a professor teaching, eight for one lesson and eight for another. For each lesson, half of the videos had an avatar present, and half had only a voice. For both voice and bodies, there were four different emotions the instructor attempted to convey (happy, content, frustrated, and bored). After watching the clips, participants used a scale of 1 to 5 to rate all four possible emotions for a given clip. Thus, the variables were the manipulated digital presence or absence of a body representation and measured emotional accuracy. The results favored the hypothesis as all emotions (except for frustration) were correctly identified without the need for body language. Since tone and emotion are essential components of communication, this research suggests that perhaps partners defusing bombs remotely over the phone will not actually be at a significant disadvantage.

The power of voice alone is demonstrated again in recent research about how phone calls to isolated hospital patients may have helped decrease their feelings of social isolation during the COVID-19 pandemic (Normandin et al., 2022). The purpose of the study was to not only measure the impact of the call system implemented, but to also ultimately decide if it is worth continuing. This process involved having both patients and the volunteer calling staff at the hospital fill out questionnaires that used 5-point Likert scales to assess different components of the calls to determine overall effectiveness. A lot of benefits to the calls were discovered, such as patients feeling less isolated in having brief conversations, staff feeling more productive in helping patients, and patients would more honestly express their emotions through the phone. However, the big drawback of the nature of the random calls from volunteers was that patients wanted their callers to become dedicated relationships, and callers felt guilty when they could not dedicate time to all their patients who felt attached. In conclusion, the calls were effective enough to stay, and it shows that a lack of body language does not get in the way of meaningful communication.

Even more important is the notion that nonverbal cues are not limited to face-to-face interaction, as Al Tawil (2019) performed research that defined specific electronic nonverbal cues and explored their potential impact on students' engagement in an online classroom. Due to the lack of research in the field, the goal was to perform basic research without a particular idea of what would be found. To do this, Al Tawil first sampled three teachers and five students to answer some open-ended questions about communication in an online classroom. From those responses, they were able to discover four categories of electronic nonverbal communication, including time between responses, complete lack of responses, the style and tone of responses, and the use of 2D visuals like pictures or emojis. After identifying the categories, a new survey was sent to a much larger group to get responses on how influential each of these were to engagement. The results then not only identified types of electronic nonverbal communication but found that both timing and lack of responses were impactful on classroom engagement, more so than 2D visuals, and style was not significant at all. What this means is the emphasis on specifically presence-based nonverbal cues may not be a fair way to examine the full potential of communication, and those who communicate over the phone still have more than spoken word to express meaning.

And while a previous head-to-head study of remote and in-person communication may have favored in-person in terms of impact on well-being, a recent study investigated how facial expressions between people synchronize and become more expressive when they cannot communicate through spoken language, and found no significant performance difference with regular vocal communication (Zhao, Wood, Mutlu, & Niedenthal, 2023). The researchers hypothesized that subject pairs who were not allowed to speak would synch their facial expressions more (and become more expressive) than those that were allowed to speak during cooperative tasks, and that on the final task when both groups were allowed to speak, the gained synchrony of the no language group would enhance performance compared to those who were always speaking. To obtain the data for the study, the researchers recruited 57 pairs of female participants from the University's psychology department and gave them a total of four collaborative tasks to complete. The individuals were randomly assigned as pairs, and the pairs were randomly assigned to either the regular communication group or the no speaking group. Before each task, everyone was given a short instructional video on how to complete the task, and during each task cameras observed the facial expressions of the participants. The fourth and final task allowed communication for both groups, and effectiveness of completing tasks was

based on the specific task requirements; facial synchrony was measured through facial recognition software, analyzing the recorded footage frame-by-frame.

The results of the study showed that when language was removed, people became more expressive, and they synched their facial expressions more with their partner (Zhao, Wood, Mutlu, & Niedenthal, 2023). However, the fourth task's performance was not significantly greater for those who had achieved this facial synchrony than those who were always speaking. The outcome of this study implies that whenever language cannot be used, facial expressions compensate to achieve mutual understanding and communication. Results of the fourth task are also significant in demonstrating that while facial expressions are an important tool for communication (especially to make up for lack of language), they may not actually enhance regular performance on tasks when communication is allowed. For my research, this is important because it supports the idea that over the phone communication will perform just as well as face-to-face communication, since the importance of facial expressions was lost when spoken language was reintroduced.

#### *Supporting Method and Theory*

After analyzing past research and the chosen tasks used for facilitating collaboration, it is important to consider the current study's chosen collaborative task and how it is relevant to measuring the significance of body language. A study by Santhanam (2023) supports the use of video games to assist with breaking down harmful stereotypes of autism by allowing autistic and non-autistic individuals to talk and bond over fun tasks together. The goal of the research was to demonstrate how video games work as a strong foundation for bridging the gap between the two groups by allowing for more focused conversations that do not relate to the status of the individuals. The study itself is the detailed process of Santhanam introducing video gaming to their college campus by gathering games both autistic and non-autistic individuals who were interested in playing with others, and hosting events to gather them to play while observing their behavior. With this tutorial approach, the author gives clear instructions on effective environments that help achieve the goals of getting both autistic and non-autistic individuals to bond in a cooperative manner while still valuing the autistic individuals' preferences and feedback without trying to force some form of normative adaptations on the autistic individuals. In short, the *Keep Talking and Nobody Explodes* game is an acceptable way to facilitate collaboration between peers, and it is a suitable task for measuring communication.

The model study of the current research is one on the differences between a cell phone conversation and one had in person, by Drews, Pasupathi, and Strayer (2008). They specifically focused on the task of driving and wanted to investigate if more mistakes were made when talking over the phone compared to talking to a passenger. The main theory used as a foundation is one of inattention blindness, suggesting that phone conversations may result in more errors because the person on the phone is unaware of the obstacles on the road and cannot adapt the flow of conversation accordingly so that the driver may focus more when complex tasks arise (Britt, 2017). In order to put the theory to practice, they recruited 96 adults (forming 48 pairs) and had them perform a complex simulated driving experience. Half had their paired person sitting with them and watching them perform the simulation while talking, while the other half were isolated and talked through the phone. They then measured driving performance based on factors such as staying in the middle of the lane, driving at the correct speed, and taking the proper exit to get off the highway. The results were fairly unfavorable for phone conversations, tending to perform worse in staying centered and following direction, but actually performing about the same in terms of speed. What this implies is that the methods used for communication

can have surprising impacts on performance and should be carefully considered. Adapting this research, I plan to investigate if this effect is still present on a task that puts a high cognitive load on both participants and requires both to work together to complete it, as compared to only having one person doing the work while the other serves as a distraction. I also plan to focus more on how presence can use body language to communicate effectively, since the inattentional blindness theory is not as relevant when both subjects have to be keenly aware of each other's situations in order to succeed.

### *The Current Study*

The goal of this study is to measure the impact of body language and other non-verbal cues on collaboration. This is important to research because of the new remote environments being used by schools and jobs ever since the pandemic and how they might be less productive than being in-person. The results are important for those who frequently work with others on complex tasks and are expected to excel on those tasks. The hypothesis for this research is that teams communicating over the phone will have less time remaining, make more errors, and require more attempts when defusing their bomb compared to those who communicate face-to-face. In other words, body language will have a significant impact on collaboration.

## **Method**

### *Participants*

Sixteen Thiel College students were recruited for the purpose of this study. This made 8 teams of two students for bomb defusal, and half of these teams (4) communicated over the phone while the other half (4) sat across from each other. They were gathered through convenience sampling, both by providing experiment time during class as well as distributing a sign-up email across campus.

### *Materials*

The materials necessary for research were the *Keep Talking and Nobody Explodes* game and manual, a questionnaire establishing demographics and any potential past experience with the game, a phone used for communication for the remote group, and two rooms free of distractions for the duration of bomb defusal. The game itself already measured the variables of time remaining in seconds as well as the number of errors made.

### *Research Design*

A posttest-only control group design was used for the purpose of this study. Participants were randomly assigned to groups (face-to-face or phone) based on the time slots they signed up for, as unknown to them the teams were put in alternating conditions, starting with face-to-face for the first team. Then they were randomly assigned roles (bomb defuser or manual expert) based on when they signed up for the time slot, as the first student for each slot was on the bomb and the second was on the manual, again unknown to them. Thus, partners were assigned by time slot as well, potentially less random if two friends decided to sign up together for the same time. The independent variable that was manipulated was the method of communication, defined as either talking face-to-face or over the phone. The dependent variable measured was time remaining (defined in seconds), the number of errors made while completing the task (the game calls them "strikes"), and the number of extra attempts necessary to successfully complete the task (with a score of 0 corresponding to a successful first try).

### *Procedure*

First, the participants met during the time they signed up for at the dedicated testing area on campus that they were notified of in advance of the meeting. On location there were two computers, one for playing the game, and the other for reading the manual. For the face-to-face

group, these computers were across from each other so the team could not view each other's screens but could clearly see each other's faces. For the over the phone group, the computers were in separate rooms, and a phone was prepared in advance (set to "do not disturb" to remove distraction) to call the computer to communicate with each other. When the participants arrived, they signed for informed consent before anything else began. Then, after they were given the opportunity to ask questions and they gave consent, they filled out the questionnaire. After this, the subject on the bomb completed the tutorial provided by the game to allow them to become familiar with the controls and the overall expectations of their task. Simultaneously, the subject on the manual reviewed the manual and familiarized themselves with its layout and their role in the task. When both participants completed their respective training, they started "the first bomb" in the game. If the task failed, the bomb was reattempted, since it was still semi-randomized, and the team could not rely on the exact same answers they discovered from their previous attempts. After they finished, their results were recorded as measured by the game. They were then given the debriefing form and asked to review it. After responding to any additional questions from the participants, the experiment was finished, and participants left.

### **Results**

Before testing the study hypothesis, the data was analyzed using descriptive statistics. The main study variables included a method of communication and performance on collaborative task. The method of communication was operationalized as being assigned to either complete the task while sitting across from each other for face-to-face communication or complete the task while in separate rooms and using a voice call for over the phone communication. Collaborative performance was operationalized as the time remaining on the bomb when it was defused, the number of errors made (strikes) while defusing the bomb, and the number of additional attempts necessary to successfully defuse the bomb. For the method of communication variable, I calculated the counts and percentages for each group. For the collaborative performance variable, I calculated the means, standard deviations, and ranges. The main study hypothesis was tested using inferential statistics. I hypothesized that teams who communicated over the phone would significantly decrease in their seconds of time remaining and significantly increase in number of errors made and attempts necessary. The inferential analysis I performed was an independent sample t-test. In the analysis, method of communication was the independent variable with participants randomly assigned to two conditions. The conditions were face-to-face communication (control group) or over the phone communication (experimental group). The dependent variable was collaborative task performance.

#### *Descriptive Statistics*

For the method of communication variable, there were eight participants in the experimental group and eight participants in the control group. For the collaborative performance variable, the mean time remaining was 72 seconds with a standard deviation of 37 seconds and a range of 12 to 120 seconds. The mean number of strikes was .25 with a standard deviation of .45 strikes and a range of 0 to 1 strike. Finally, the mean number of additional attempts necessary was .75 with a standard deviation of .68 extra attempts and a range of 0 to 2 extra attempts.

#### *Inferential Statistics*

An independent sample t-test was computed to assess the effect of method of communication on collaborative task performance, specifically time remaining on the bomb in seconds. There was not a significant effect of communication method on time remaining,  $t(14) = -.289, p = .777$ , with the face-to-face condition and the over the phone condition not having significantly different mean values. The mean of time remaining for the face-to-face condition

was 69 ( $SD = 41$ ), while the mean of time remaining for the over the phone condition was 74 ( $SD = 35$ ) as shown on Figure 1.

Another independent sample t-test was computed to assess the effect of method of communication on collaborative task performance, focusing on number of strikes. There was not a significant effect of communication method on strikes,  $t(14) = 0, p = 1$ , with the face-to-face condition and the over the phone condition not having significantly different mean values. The mean of strikes for both conditions was 0.25 ( $SD = 0.46$ ).

One final independent samples t-test was computed to assess the effect of method of communication on collaborative task performance, with an emphasis on number of additional attempts needed to successfully defuse the bomb. There was not a significant effect of communication method on extra attempts,  $t(14) = 0, p = 1$ , with the face-to-face condition and the over the phone condition not having significantly different mean values. The mean of extra attempts for the face-to-face condition was .75 ( $SD = .89$ ), while the mean of extra attempts for the over the phone condition was .75 ( $SD = .46$ ).

### Discussion

Overall, there was no significant performance difference by any measure between the face-to-face teams and the over the phone teams. Strikes made and number of extra attempts were practically identical, and the phone condition actually performed slightly better on the time remaining, which does not support my original hypothesis. My hypothesis was formed on the idea that with such a complex task, being able to visually see your partner confused, focused, or desperate would significantly alter the flow of information to better accommodate the situation. After all, if a teammate is sitting in stunned silence from being overwhelmed with information, a present partner could see this and repeat themselves slowly, while a phone partner simply sits in silence and wonders what is going on. Additionally, I figured that the face-to-face teams could even use gestures as part of their communication to try to offer further explanation for complex descriptions. What I might have failed to account for, however, is that merely pausing on its own, as well as the tone of voice when talking over the phone, was already enough to convey the important emotions that altered the flow of information. Either that, or participants who sat across from each other were too focused on the task to even notice each other's body language, further supported by a casual observation of a lack of gestures while playing. Regardless of reason, the evidence suggests that not only is body language not as important as anticipated for effective teamwork, but there might be some other unknown variable that provides a slight advantage for remote collaboration. In practical terms, so long as teams can still communicate verbally, meeting in person or turning on webcams does not necessarily make the work any better. This is similar to Zhao's (2023) findings, as those who had to rely on nonverbal cues for several tasks did not perform better when allowed to speak on the final task compared to those who could speak for all tasks. It seems verbal communication is far more important than nonverbal cues, so much so that it even overrides them. When examining the evidence for a face-to-face advantage, a pattern of replacing verbal communication emerges. Thus, nonverbal cues only provide significant benefit when verbal communication is absent or distorted.

Some limitations occurred during the procedure of the study. One such limitation was the method of communication for the over the phone condition not being entirely reliable. Sometimes participants would talk too quietly for the phone to hear, or the connection would be interrupted for a brief moment, censoring vital information. Without this limitation, the phone condition may have performed even greater than the face-to-face condition, perhaps even leading to a significant difference. Additionally, despite the given tutorials, many participants still found



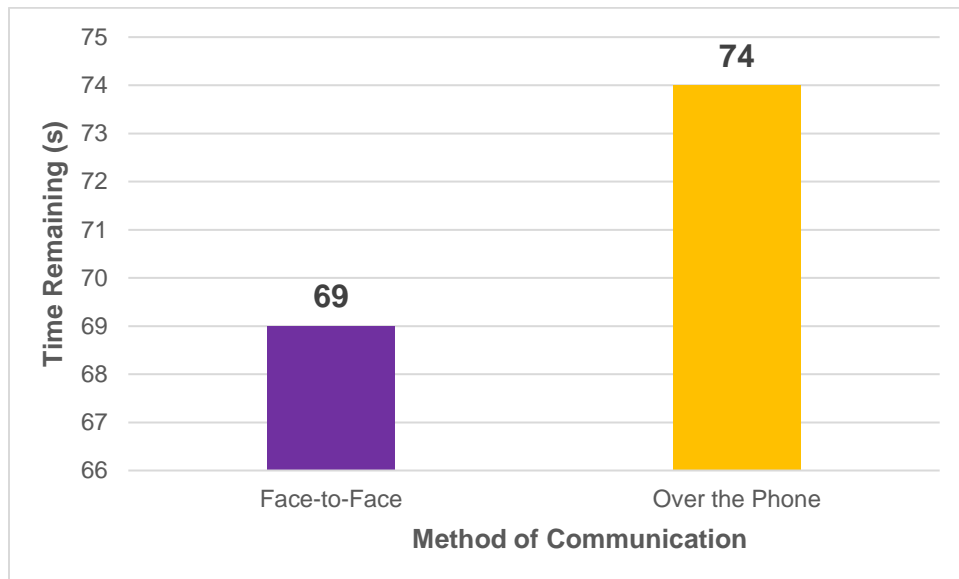
the bomb defusal task to be far too confusing. This may have impacted results as instead of measuring competent teamwork, successful results may have been due to lucky guesses, and unsuccessful results may not have been from a lack of cooperation. Sample size is another concern, as only four teams per condition is much more susceptible to random chance interfering with the results, a likely contributor to the lack of any significant differences in performance. Another limitation stems from how the game itself measures time remaining. Whenever a mistake is made while defusing the bomb, each second from that point on is 25% faster. This leads to the technical possibility of one team defusing the bomb faster than another but having less time remaining on their bomb if they made 1 or 2 mistakes early and the slower team did not. Fortunately, it could be argued this is a reasonable punishment, as a team that takes slightly longer but makes no mistakes could be seen as collaborating better than a team that rushed and made mistakes.

Future research could expand on the possibility of an advantage to teamwork in remote settings. By identifying and examining new variables, it might be possible to find a stronger influence on collaborative ability than nonverbal cues, and that influence may happen to be related to phone communication. Future research may also want to consider moderating variables in a larger sample size, such as prior experience with the task or partner. Perhaps those with high amounts of familiarity with the game will perform well regardless of condition, while those new to the task benefit more from nonverbal communication? A bomb defusal task is not the only way to measure collaboration, so a simpler task that can be performed both remotely and in person may demonstrate a significant difference, or at the very least, a clearer tutorial that better prepared participants for the bomb defusal task would help actually measure collaborative ability and not lucky guesses. To better reflect real world working environments, future research could also consider making teams of more than just two individuals, as the game supports multiple manual experts for one bomb defuser, and then measuring if body language becomes more impactful.

Relating this back to the forced isolation of the COVID-19 pandemic, the current study demonstrates that there may not be a negative impact in remote working and teaching environments. And with actual collaborative performance not making an impact, it is important to consider the other differences the two environments provide. After all, why not save the time and money to set up a physical meeting location if simply holding a group call still provides comparable results? And students may rejoice knowing that, especially when a teacher is more focused on their presentation than the actual class, it can be argued that keeping the cameras off does no harm (of course, only if they are actually still paying attention). This idea might even extend to non-collaborative tasks, suggesting simply enjoying time talking to friends and family over the phone is just as meaningful as visiting them. The main takeaway is this: verbal communication is humanity's most powerful asset, enabling clear, effective communication that makes us all stronger together.

### References

- Al Tawil, R. (2019). Nonverbal Communication in Text-Based, Asynchronous Online Education. *International Review of Research in Open & Distance Learning*, 20(1), 144–163. Education Source.
- Bavelas, J. B., Coates, L., & Johnson, T. (2000). Listeners as co-narrators. *Journal of Personality and Social Psychology*, 79(6), 941–952. APA PsycArticles. <https://doi.org/10.1037/0022-3514.79.6.941>
- Britt, M. A. (2017). *Psych experiments: From Pavlov's dogs to Rorschach's inkblots, put psychology's most fascinating theories to the test*. Adams Media.
- Drews, F. A., Pasupathi, M., & Strayer, D. L. (2008). Passenger and cell phone conversations in simulated driving. *Journal of Experimental Psychology: Applied*, 14(4), 392–400. <https://doi.org/10.1037/a0013119>
- Jabber, K. W., & Mahmood, A. A. (2020). Non-verbal Communication between Two Non-native English Speakers: Iraqi and Chinese. *Theory & Practice in Language Studies*, 10(2), 189–196. Education Source.
- Kroencke, L., Harari, G. M., Back, M. D., & Wagner, J. (2023). Well-being in social interactions: Examining personality-situation dynamics in face-to-face and computer-mediated communication. *Journal of Personality and Social Psychology*, 124(2), 437–460. MEDLINE. <https://doi.org/10.1037/pspp0000422>
- Lawson, A. P., & Mayer, R. E. (2022). The Power of Voice to Convey Emotion in Multimedia Instructional Messages. *International Journal of Artificial Intelligence in Education*, 32(4), 971–990. <https://doi.org/10.1007/s40593-021-00282-y>
- Mooney, A. R., Bravo, M., Roberts, A., Salley, E., Blaze, E., Esparza, M., Fried-Oken, M., Khayum, B., Rao, L., Rademaker, A., & Rogalski, E. (2023). Use and Perceived Effectiveness of Communication Modes Reported by Persons With Primary Progressive Aphasia. *American Journal of Speech-Language Pathology*, 32(1), 298–305. Education Source.
- Normandin, L., Wong, C., Dumez, V., Malas, K., Grégoire, A., Grégoire, J., Pettigrew, L., Allannot, N., Vialaron, C., El Mansali, S. A., Nguyen, C., Brunet, F., & Pomey, M.-P. (2022). Reducing social isolation during the COVID-19 pandemic: Assessing the contribution of courtesy phone calls by volunteers. *PLoS ONE*, 17(5), 1–14. Academic Search Premier.
- Santhanam, S. priya. (2023). An Interactive and Neurodiversity-Affirming Approach to Communication Supports for Autistic Students Through Videogaming. *Language, Speech & Hearing Services in Schools*, 54(1), 120–139. Education Source.
- Zhao, F., Wood, A., Mutlu, B., & Niedenthal, P. (2023). Faces synchronize when communication through spoken language is prevented. *Emotion (Washington, D.C.)*, 23(1), 87–96. MEDLINE. <https://doi.org/10.1037/emo0000799>



*Figure 1.* Mean time remaining on the bomb in seconds for participants in the face-to-face condition versus participants in the over the phone condition. There was not a significant effect of communication method on time remaining.