

LACK OF TEACHERS' FACIAL EXPRESSION IN THE COVID-19 PANDEMIC: PROBLEMS AND WAYS TO SOLUTIONS



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ABSTRACT

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Since the novel coronavirus 2019 (COVID-19) outbreak a global pandemic, nearly 2.5 years of adapting to lockdown, isolation, separation and masking up has tremendous shift in our social and daily life. Face covering is imperative to prevent infection and slow the spread of COVID-19, it hinders communication by reducing one's ability to recognize and interpret the facial expression and emotion of whom we are interacting. Specifically, face coverings would hinder children's learning ability and varies development, including cognitive, speech, emotions and social interaction. A survey was conducted to collect primary data about 1) students' ability to recognize emotions of masked faces and 2) students' perception on teaching performance when teachers' mouth and facial expression are hidden away. Survey results found that among six fundamental emotions (surprise, sadness, fear, happiness, anger and disgust), disgusted and happy expressions are relatively difficult to be recognized correctly compared with other emotional expressions. The survey also found that facial expressions of a teacher make teaching more interesting and engaging. Lack of facial expression makes both teaching and learning inefficient. Finally, this paper suggested that teachers may put more emphasis on other non-verbal communications to alleviate the problem.

Contribution/ Originality: A survey was conducted to confirm problems caused by hiding teachers' facial expression in the COVID-19 pandemic. The teaching efficiency is reduced when students cannot recognize teachers' facial expressions. Various non-verbal communications are suggested to solve these problems because they can compensate for the deficiency of teachers' facial communication.

1. INTRODUCTION

The novel coronavirus 2019 (COVID-19) is spreading exponentially in all parts of the world. The spread of the disease has slowed down the global economy and has caused peoples either deaths or sick with symptoms such as fever and cough, blood clotting, strokes and chronic neurological deficits, anosmia and cognitive dysfunction. Our daily life has changed since the beginning of the COVID-19 pandemic. Living through a global pandemic has transformed the ways we work and learn, eating habits and appetite, workout culture, and so forth. Business and leisure travel were canceled. Businesses in all sectors, the government, and educational institutions worldwide have to shut down operations. Learning at institutions physically and classroom experience were replaced by remote learning or online training sessions from home. Social distancing measures and cessation for mass events to avoid group gatherings continue to be implemented. The lack of personal interaction and social engagement has distorted

our sense of time and has triggered a new wave of mental health issues such as addiction, social isolation, depression, general stress and anxiety.

In light of the very dire epidemic situation, there is a strong focus on cleaning and sanitization. Mandating face coverings or mask-wearing requirement is one of the important measures or national strategies for preventing the spread of virus and disease. A person is mandatory to wear a mask all the time in public and communal areas. Mask-wearing requirement has remained in place in many different countries, despite of the number of infections has fallen since the Omicron peak in January 2022 [1-3]. This measure is comparatively cheap and easy to be administered. However, face coverings impair face recognition and reduces the capability of people of all ages to infer emotions expressed by facial configurations and features. Facial expressions can display not only our thoughts or ideas, but also personal emotions [4]. Emotion recognition is critical for social communications. "Masking" our emotions was proven to have adverse impact on the development of social and emotion reasoning as well as social and cognitive functioning [5-7].

While extant studies have examined the impacts of masked faces on social interactions, emotion identification and reasoning in the age of COVID-19, the debate about the usage of face covering in educational settings, and the impact of masked face on college learning and knowledge retention are ongoing. Masked face prevents children from disease infection. Yet, the use of face coverings reduces emotional mimicry, contagion and emotionality, and thus connection between students and teachers and group cohesion, and thus harms learning. Given the pros and cons of wearing face mask, during the pandemic, the question of wearing face masks at school is profoundly discussed, especially, where new cases are found in the form of Delta and Omicron waves of COVID or in spots of waning and waxing infections.

While the answer to this question influences more than 1.5 billion school staff, teachers and students in the globe, and to the community by extension, this urges this paper to empirically study the relationship between wearing masks and learning effectiveness. To find out mask or not to mask in educational context, this paper aims to study 1) whether students can recognize facial emotions when faces are masked and 2) students' attitudes towards teachers who wear face masks in classrooms and the relevant problems. In addition, this paper suggests ways to overcome the problems caused by lack of teachers' facial expressions in teaching and learning activities.

1.1. The Usage of Face Covering in Educational Setting

Since the outbreak of a global pandemic, policy makers and education practitioners make decisions in all stages or waves of COVID-19 based on their known risks of infection and risks to children not attending educational settings. It is known that missed face-to-face attendance diminished classroom experience, causing significant harm to children's education and development as well as their mental and physical health. The high infection rates at this point in time presents challenges to sustaining face-to-face education for education practitioners and students.

Whilst not conclusive, extant studies have examined the relationship between COVID-19 and the usage of face covering especially in the educational setting. A range of studies, including randomized control trials, observational studies and contact tracing studies have proven that face coverings are the most useful in contributing to diminishing transmission of COVID-19 settings when individuals are close together, such as the classroom settings. Scientific and medical evidence showed that face coverings could help cutting down transmission of COVID-19 as it decreased the emission of particles that carry viruses when worn by infected people. It is believed that face masks are efficient at lowering the contagious probability when face masks are worn by all people in a group.

1.2. Communication and Emotions Identification under Face Coverings Situation

However, there are disadvantages of face coverings for students and teachers. Wearing face coverings may lead to unexpected results and detrimental impacts on communication and social interaction among teachers and students in classroom.

Facial expressions of teachers may send messages to students who are remarkably skillful at understanding and interpreting the understated changes, especially when it combined with eye contact. Students all know the usual facial expressions for sad, happy, angry, and so forth. Still, it is possible to have varied degrees and combination of facial expressions in the classroom. For example, the surprised face of a teacher may convey a message that students should reconsider their behaviors. Likewise, the confused face of a teacher indicates he/she is confused about the reason for a student choosing a certain behavior.

Teachers like to control their classes with facial expressions, and it is the simplest way to provide guidance to students in classroom. To perform these facial expressions followed by saying “thank you” to a student ensures the message is polite and strong. Thumbs up and a simple wink is also often accepted. The more a teacher communicate non-verbally, the more control in classroom he/she has. Facial expressions not only include a sense of theatrics, but also be overacted. A teacher may be over-acting with a purpose. For instance, to use hyper-expressions to indicate distrust. To add a sense of theatrics and humor can be effective and mastered by introverts. The application of facial expressions does not need active thought, and this is an inborn ability that give and receive facial expressions that can readily become a natural part of the teaching practice.

Communication with face coverings hides the strength of reaction and response because most of our physical interactions are associated with facial expressions. Normally, one’s facial expression tells the emotional state, and this creates emotional and social connections between people. Loss of this emotional expression is hard for communication among people. Some emotions are expressed merely on the lower portion of a face. For instance, smile is a positive emotion globally and it has favorable effects among people and makes one more approachable and likeable. But when people wear face masks and hide certain parts of the face, how can emotions be communicated or how does one smile? Therefore, the threats of probable negative influences on learning and teaching, as well as wellbeing and wider health must be taken into consideration and balanced again the benefit of face coverings.

Emotion is a process that characteristically includes behavior, action tendencies, verbal and non-verbal expression, physiological change, and subjective appraisal [8]. Various aspects of emotions were studied, including context suitability, duration, intensity, and valence [9]. Positive emotions (e.g., pride and joy) are experienced when a subjectively important expectation and goal is reached, whereas negative emotions (e.g., fear, sadness and anger) are experienced when the goal cannot be accomplished [10].

Likewise, emotions can be classified into basic and complex emotions. Basic emotions include surprise, disgust, sadness, fear, anger, and joy. They are featured by facial expressions, typical adjustment function, and specific brain activity patterns and can be recognized easily [11]. Complex emotions are less typical and recognized more difficultly. Independent of the emotion complexity, non-verbal behavior is the primary communication mode. Body posture, voice tone and facial expression are important for interpreting emotional messages and decoding intentions and impulses [12]. Emotional expression and experience are important for teachers to interact with students [13, 14]. Enjoyable experiences enhance the learning process while discreditable experiences hinder students’ creativity, memory, and motivation [15].

Emotional expression and experience of teachers are commonly triggered by learning process of students [16]. It is essential for teachers to know how to manage and use their emotions constructively to reassure students’ learning and development. Teachers use various strategies to manipulate their emotions. For instance, teachers may control the intensity of anger towards the students and express joy genuinely to affect students’ motivation.

2. RESEARCH METHODS AND RESULTS

To understand how face covering of a teacher affects teaching and learning processes in a classroom, a total of 150 university students were invited to participate in survey research that was divided into two sections. In the first section, respondents attempted to recognize the six facial expressions (i.e., surprise, sad, fearful, happy, angry and disgusted) in the photos that may be unmasked and masked (see Figure 1).



Figure 1. Examples of various facial emotions (unmasked and masked faces).

Source: <https://www.belfasttelegraph.co.uk/breakingnews/offbeat/21-facial-expressions-identified-30142517.html>.

These photos were color face photos in the Karolinska Directed Emotional Faces database, which have been validated with an average Hu of 0.56 and biased hit rate of 0.72 per emotion [17, 18]. In this research, a total of 36 images (18 unmasked and 18 masked) with a normed Hu ≥ 0.50 were selected were used. The masked version of a photo was created by putting a picture of a face mask over the mouth and nose. The results are shown in Table 1.

Table 1. Results of emotion recognition correctness.

Emotion	Angry	Disgusted	Fearful	Happy	Surprise	Sad
No mask	80.5%	92.2%	91.5%	95.3%	90.5%	75.3%
Mask	71.0%	46.5%	89.6%	76.5%	90.5%	70.2%

Various facial parts convey different information in six fundamental emotions: fear, happiness, surprise, anger, sadness and disgust [19-21]. For instance, to recognize disgusted and happy expressions rely on perceiving the nose [22, 23] and the mouth [24] respectively. Thus, there are obvious variances in the recognition correctness of these two expressions between masked and unmasked photos.

Oppositely, to recognize sad and fearful expressions rely on the top facial part such as eyes [23-25]. To recognize anger both the eyes [24] and lower face [26] are necessary. To recognize surprise involves the top and bottom facial parts [27]. After wearing a face mask, eyes can still be seen in these facial expressions and, thus, the variances in their recognition correctness between unmasked and masked photos are relatively small.

In another section of the survey, a number of questions were used to collect data about respondents' attitudes to teachers' facial expressions and the relevant problems caused by lack of facial expressions. The measurements and means of these survey questions were shown in Table 2.

Overall, the survey result revealed that students perceived the importance of facial expressions in learning and teaching activities in a classroom and lack of facial expressions was considered a practical problem. Particularly facial expressions of a teacher make teaching more interesting and effective. When a teacher's smile can be shown, this can encourage students to participate more effectively. Conversely, a teacher's anger shown on his/her face hinders students' understanding and attention. Lack of facial expression makes both teaching and learning inefficient.

Table 2. Results of a survey collecting data about students' attitudes on teachers' facial expressions in a classroom.

Survey question (1= strongly disagree, 2 = disagree, 3 = neutral, 4 = agree, 5 = strongly agree)	Mean (n=150)
1. Teachers' facial expressions influence the teaching process.	4.2
2. Teachers' facial expressions can be understood by students.	4.1
3. Teachers' facial expressions indicate how much teachers are engaged in teaching activities.	3.5
4. Teachers' facial expressions can show teaching styles and personalities.	3.6
5. Teachers' facial expressions make teaching more interesting and effective.	4.5
6. Teachers' facial expressions help students to understand more effectively.	3.2
7. Teachers' facial expressions in a classroom keep students active.	3.5
8. A teacher who smiles encourages students' effective participation than one who does not.	4.5
9. Anger on a teacher's face hinders the understanding and the attention of students.	4.4
10. When a teacher has eye contact with students, they pay more attention in a class.	3.5
11. It is easy to speak to a teacher who nods his/her head to encourage students.	3.5
12. Students like a lesson when a teacher is more engaged and using facial expressions physically to explain.	3.7
13. It is difficult to communicate with a teacher who lacks facial expression in a classroom.	3.2
14. Lack of teachers' facial expressions affect teaching activities negatively.	4.2
15. Lack of teachers' facial expressions is difficult to engage students to participate in learning activities.	3.9
16. Lack of teachers' facial expressions is difficult to show teachers' attitudes to teaching.	3.7
17. Lack of teachers' facial expressions make teaching inefficient.	4.2
18. Lack of teachers' facial expressions make students learn inefficiently.	4.1
19. Lack of teachers' facial expressions in a classroom make students inactive.	3.8

3. DISCUSSION

Based on the survey results mentioned, facial expressions of teachers are important classroom experience. Because of wearing facemasks in the COVID-19 epidemic, lack of facial expressions is not uncommon in a classroom recently. However, a teacher may attempt other non-verbal communications to alleviate the problem.

Teachers may undervalue the significance of non-verbal communication [28]. In fact, most interpersonal communication is non-verbal. Two important features of non-verbal communication are the facial expressions and the eye contact. They are strong and effective ways to deliver a message. The real communication between two people starts when there are eye contacts that have essential meanings in exchange of ideas. For example, when a person has eye contact with another, this person is interested in or cares for another. Oppositely, one avoids eye contact, he/she may hide something that may be due to lack of confidence.

Eye contacts and facial expressions have disciplinary function and help teachers to manage classrooms. For example, eye contacts indicate to a student that a teacher want him/her to do something; to check if all students are concentrating; and to hold students' attention and to encourage students to maintain attention [29].

Eye contact and gestures can create connection. A teacher who does not looks at students lacks assurance and students feel uncertainty [30]. Teachers also require coordinating their eye contact, speaking voice, and body language to create convincing impact on students [31]. Because facial expressions and eye contact are signs for reflection of self-confidence of a teacher. They have impacts on a teacher's trustworthiness and credibility [28].

There is a strong connection between the degree of participation in communication and eye contact people receive. Eye contact can encourage students to participate in communication easily after a teacher has nominated and invited responses by eye. Maintaining eye contact with students, a teacher can assert that he/she is interested in what the student says and expects conversation. Non-verbal communication checks if students understand. For example, a puzzled expression tells a teacher to repeat and revise something. Teachers listen to and watch students

when they perform tasks for signs of being lost. Eye contact is not an only way for a teacher to express a message but to understand a message displayed by a student non-verbally [28].

Eye contact can save time when a teacher conveys a message to disapprove, encourage and praise students in addition to their intonation and voices. Eye contact convey emotions in the upper portion of a face and is important for determining one's response and interest. Studying and looking more about eye helps to avoid from miscommunication and misunderstanding.

Besides eye contact, there are other types of non-verbal communications. Although people mask their faces, the voice tone may aid communication. When people speak, a listener reads voice tone and observes words simultaneously. Voice tone conveys emotions by how loud people speak and often express expectation in one's communication. Hand gestures also communicate messages. They are natural and visible actions that helps people to understand conversation effectively. They change interaction noticeably. In addition, to choose right words to convey emotions, people can build stronger connections among each other. It becomes easier to express and understand hidden emotions.

Spoken communication is not limited to verbal interaction. Non-verbal features like body gestures, eye contact and facial expression are important features of human interaction. In general, people are able to understand the behaviors displayed by humans although they cannot understand the spoken language [32].

The non-verbal cues carry 2/3 of social meaning in a message successfully delivered through communication [33]. Non-verbal cues used by teachers are important for students to understand the communication. The gestures like hand gestures to express turn taking, and a simple nod to state an agreement can influence the classroom interaction.

Non-verbal behaviors are powerful measurement of interaction. The quality of teachers' lecture is determined by both non-verbal and verbal parameters. The messages conveyed by a teacher contain syntactic and semantic content, but it is as much important as on how they are said actually. In a classroom, a teacher displays social signals that carry meaningful information consciously and unconsciously. For example, body posture and gesture express the relationship between the teacher and students, and eye contact notifies relax or tensed state.

4. CONCLUSION

Although words are the common way of interaction, they cannot convey all the emotions. Some behaviors can express more emotions than words. Face covering is unusual, and it is likely that our conversations will be influenced when people interact with face masks. In such, people look for non-verbal cues to respond and comprehend the messages that are conveyed. Even though better interaction is supported by non-verbal cues, it takes more time to communicate.

To communicate emotions that relate to our bodies is the best way for comprehending emotions. Normally, while people are interacting with others, they unintentionally exchange non-verbal signals in most of conversations, including gestures, eye contact, and speaking tone that deliver the emotional state people carry. All these non-verbal signals enhance communication behind the face mask, and they have their own capabilities of expressing various emotions. To learn reading and using body language, people understand what they express and build better and stronger relationships with others.

To communicate with correct non-verbal cues, it is necessary to be aware of emotions that influence people. People should be able to recognize their own and others' emotions. This enables people to read the unspoken feelings and messages that create an emotional relationship. Emotions influence behavioral change in body. To practice and develop emotional awareness, people gain control over what they act and think. A face mask is not to hide but protect. The entire body is not masked and can express more emotions. With non-verbal cues, it is still possible to understand the emotional states of others who speak with us. We understand others by their words as well as expressions through non-verbal cues.

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