

Teaching in Face Masks and Shields with Social Distancing - A Non-Scientific Study

A growing concern is developing among faculty regarding our return to face-to-face teaching in the fall - what will it be like to teach in a mask, and are face shields a better option?

We've all been wearing masks, but masking up for a grocery run is a very different thing than trying to project your voice across a room while masked. The hypotheticals were driving me nuts, so on Monday I decided to test it out (*with the permission of our administration*). I was actually on-campus with 8 colleagues in a room, and we had class. It was glorious to see my friends in person, but that wasn't the point of the experiment...



The Setup

We took turns speaking at the front of the room (a good size room that holds about 60 students without distancing). Speaking faculty ranged in projection ability from quiet to loud (like myself), and "students" moved around and sat in different locations. We then broke into three groups of three, sitting in 6' triangles, and all spoke at the same time, looking to simulate group discussions.



A variety of different masks were tried, ranging from disposable paper to multi-layer fabric. In addition, we also tested a few shields. Prior to Monday my thoughts were that shields would be much better than masks for speaking, as you'll see in my conclusions below, that did not play out. Two models of shields were used: the typical strap to your forehead cheap foam model, and a heavier shield that attaches to the brim of a hat.

Conclusions, in no specific order

Again, these are my conclusions from a single classroom experiment, and undoubtedly are somewhat subjective. I'll lead off with the biggest take-away, **you should also try this experiment as soon as you can get back on campus!** Stop over-thinking about what it will be like, experience it.

- **Speaking volume is not a problem when masked.** From the quietest to loudest in our test group, all could easily be heard across the room. I believe that when you are wearing a mask, the auditory feedback messes with your perception a bit as to how loud you are speaking. We made sure to speak at a normal class volume and it carried just fine. Participants reported it sounded a bit different, but wouldn't go so far as to say it sounded overly muffled.
- **Mask material affects comfort more than sound.** No noticeable difference in volume levels based on mask material, but the comfort for the speaker obviously varied due to material and fit.

- **Your masks will become less comfortable as time passes**, and it will become harder to breathe. It was quickly evident that we expel a lot of moisture when speaking, and moisture quickly affects the breathability of a mask. Within about 10 minutes I noticed my cloth mask puffing in and out as I spoke and breathed. Takeaway - masks are cheap, **have more than one!** Do not search for the holy grail of masks that will perform flawlessly for an 8-hour day. For every class I plan to have at least two masks, and swap them halfway through the class. This will greatly increase comfort.
- **You don't know how your mask fits until you speak for a while with it on.** Masks have varying levels of contact with your chin. When doing a grocery run you won't notice this much, but when speaking your chin is moving a good bit and we found that a couple of the styles of masks quickly pulled down off of people's noses as soon as they started speaking. Masks with bendable nose bands will do a better job of staying up on your face.
- **Small group discussion is possible.** When in our groups of three we were easily able to communicate within our groups. I will say that for some reason background noise becomes more distracting when masked, but all reported that at 6' distance they could have a good conversation in a room in which other group conversations were taking place. I know that as a faculty member I'll have to rethink these activities as most will not want common paper, pens, laptops, or such in a group, but that concern was not the focus of this experiment. But, note that it will be harder to listen in on small groups. If you walk up on a group to listen in on their conversation, yet maintain 6' distancing, it is a bit hard to follow their discussion as you are likely to be equal distance from some other groups and the voices will compete.
- **Learn to talk with your eyebrows!** Ok, that sounds odd, but given that a student can't see your mouth, be very direct in your other facial expressions. You can tell by the eyes and eyebrows a lot about what someone is saying and feeling. This advice came from a participant's friend who for medical reasons has worn a mask at all times for many years. Our experiment confirmed this. But note, accessibility issues for the hard of hearing in your class is another important issue to consider.
- **Face shields are NOT the holy grail.** As I mentioned, I had thought that shields would be far preferable to masks for speaking, and that was simply not the case.
 - There is a disturbing amount of echo when speaking in a shield - you're talking into a plastic parabola that is directing the sound straight back to your own ears. I found this very distracting.
 - A shield made me feel awkward in front of the class, I felt like a storm-trooper, and the physical barrier in front of my face made me feel disconnected, less accessible. (this is obviously very subjective!)
 - The cheap foam shield sat very close to the face, fogged from my breath, and was not near as clear as you'd like.
 - The hat brim mounted shield sat very far from the face, making me feel that I wasn't giving or receiving much of any protection.
 - Face shields may serve a role in labs and other situations where eye protection is needed as they won't fog near as much as glasses, but you may want to wear a mask also.

Please feel free to reach out if you have questions or comments. This was a simple experiment, but was incredibly informative to all who participated. I encourage you all to do the same!

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