

## The Impact of Wearing a Face Mask on Students and Faculty in On-Campus Classes

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### Abstract

*The COVID-19 pandemic has impacted all aspects of life and certainly education is no exception. Faculty and students had to adjust in ways not previously required. Teaching and learning had to be modified and delivered in a manner that could be effective and not cause total disruption in the learning process. Colleges across the nation were making adjustments and modifications to deliver quality education in a pandemic world. After the initial move to almost completely online education in the fall of 2020, the push to re-open schools was paramount. This study examines the effects of wearing masks as perceived by faculty and students, in an educational setting in a small state college in rural Nebraska.*

**Keyword:** pandemic, mask, student, faculty, educational setting, covid

### Introduction

As the 2020 viral wave of Covid-19 flowed from both coasts to the center of the United States, schools throughout the country rapidly transitioned to online instruction. In a move similar to K-12 schools, four-year institutions of higher learning began to develop a means by which students, faculty and staff returning to campus could do so safe from exposure to the growing pandemic. By the fall of 2020 with unpredictable outbreaks occurring, only 20% of colleges and universities determined to hold on-campus, face-to-face classes. This proved of particular import to a small, rural, four-year institution whose strength is identified by student engagement and its active on-campus community. Amid several employed strategies, one primary strategy, in the attempt to maintain a healthy campus, was the wearing of face masks in community areas and all classrooms. This research queried faculty and students after two full semesters of in-class mask wearing to gather thoughts related to required mask wearing.

### Purpose

This study examines the effects of wearing masks in an educational setting in a small state college in rural Nebraska. The study included surveys for both faculty and students to examine the impact of mask wearing in the educational setting. The surveys examined three specific areas of importance, as identified by the college, that are critical to effective teaching and learning. They are: 1. C – Communication, 2. E – Engagement and 3. R –

Relationship building. The primary purpose was to examine the impact that wearing a mask in the classroom had on communication, engagement and relationship building as perceived by both faculty and students.

### ***Literature Review***

Understandably, literature related to mask wearing in classrooms is sparse, particularly as related to American classrooms. The Covid-10 outbreak of 2020 presented an opportunity to further study this topic yet it is early in this undertaking. The paucity of related information forced the inclusion of mask wearing literature outside the academic community. Little existing work focused on the college experience, what little exists tends to be directed to the K-12 or foreign school mask wearing experiences.

Most on-point were Spitzer (2020), Scheid, Lupien, Ford and West (2020) and Grundmann, Epstude, and Scheibe. Spitzer and Scheid et al begin by summarizing the Covid-19 potential impact and identified mitigation strategies. Spitzer (2020) effectively transfers information developed from reported mask wearing experiences in various environments to the classroom. Spitzer (2020) delineates potential physical impacts of mask wearing including but not limited to rashes, breathing impairment, impairment to facial recognition and verbal communication. Importantly, his work extensively comments on face mask impairment of the ability to read “emotional signaling” (Spitzer, 2020) necessary to identify receptive facial or negative facial signaling. Scheid et al agree with Spitzer relative to mask wearing discomfort then move to more specifically discuss psychological impacts of autonomy and perceived competence. Importantly, both pieces discuss the negative impact of mask wearing, while agreeing with Grundmann et al (2021) on the “need to feel socially connected to others” (Scheid, 2020), that is to build relationships. Grundmann et al focus more directly on psychological impacts in a population of German adults to measure “trustworthiness, likability, and closeness.” (Grundmann, 2021) concluding face masks impair the ability to recognize the aforementioned traits. They found this to be particularly exacerbated in the older population. Landau (2020) and Will (2020) address similar expected issues in elementary schools as they develop strategies to help young students at an important development age. Will (2020), of particular importance, again identifies the need for small children to be able to see lips to gain understanding of both the spoken word and gain insight into feelings. Roy’s (2020) findings based in observation and interviews with Australian middle school (grades 9-10) drama classes, agreed with previously mentioned work but then determined (but not generalizable) that mask wearing had a positive impact on students.

Lischer, Safi and Dickson (2021) found that women had significantly higher anxiety when compared to men and that 85.8% of students reported experiencing anxiety however most cases would be classified as mild. The authors also noted that in general, the students felt well supported and expressed their appreciation of the faculty.

Elmer, Mephram and Stadtfeld (2020), Fruehwirth, Biswas, and Perreira (2021), and Chen, Sun, and Feng (2020) all agree Covid-19 increased negative mental health measures. Common among all three is the mention of increased depression among students. Elmer et al (2020) used mental health measures among Swiss undergraduates, while Chen et al’s (2020) work measured Chinese college students and Fruehwirth et al (2020) measured mental health in American college students to discern the impact of isolation due to Covid-19. All work acknowledged one common element, an increase in depression amongst the measured populations of college students. Each work had unique pieces: Fruehwirth et al (2020) measured increases to students in anxiety and depression; Elmer et al (2020) echo these findings while adding increases to depression, stress, anxiety and loneliness. Chen et al (2020) found increased in OCD, fear along with depression. All of these agree with work done which identifies increases in anxiety and depression in various other populations. Pancini, Marimucci, Aurelia and Riva (2021) agree in their findings with increases in depression in their review of Covid-19’s impact on an Italian population. Unique to their work is a discussion of the quality of space in which those in isolation find themselves. They determined the longer the lock down in the worse the space the prolonged and deep the negative mental impact. Finally, Loades, Chatburn, Higson-Sweeney, Reynolds, Shafran, Bridgen, Linney, McManus, Borwick, and Crawley (2020) who, through an extensive literature review, identify anxiety and depression as commonalities of the Covid-19 isolation experience. Face masks help prevent the spread of the COVID19 virus, however, covering the lower half of the face reduces one’s ability to communicate, interpret and interact (Spitzer, 2020). It is clear that masks have medical benefits however, Roy (2020), suggests that masks may have a positive academic, emotional and developmental impact on students and is pushing for more research to support his findings. Grundmann (2021), research that while masks diminish one’s ability to categorize emotion, they also buffered the negative effects of negative emotions.

## **Research Methodology**

Faculty and students were surveyed on their perceptions of how wearing a mask impacted their teaching and learning. This research queried faculty and students after two full semesters of in-class mask wearing of this school to gather thoughts related to required mask wearing. Both surveys were created by the authors of this study, presented and received IRB approval #EX-2021-007. The surveys used a 5 point Likert scale with the following options: strongly disagree, disagree, neutral, agree, and strongly agree. The surveys were administered using psychdata.com to administer and collect data. The faculty survey consisted of 26 questions with two open-ended queries at the end to offer opportunities for responses that may not have been included in the 26 question survey. The student survey consisted of 20 questions with two open-ended queries at the end to offer opportunities for responses that may not have been included in the 20 question survey. The inquiry limited participation to only those faculty who taught in the classroom and students participating in classroom courses. Researchers tabulated the standard five-point Likert scale inquiry using percentages of response. Researchers treated survey choices of strongly disagree and disagree as one determinant of opinion applying the same standard to the positive indicators of strongly agree and agree as a similar determinant. Over a three-week period (21 days), 46 of 52 full time faculty teaching in the classroom responded which resulted in an 88.46% faculty response rate, while 225 out of a potential student body of 722 resulted in a response rate of 31.16%. Researchers then sorted percentage responses to report findings within the context of the three previously identified descriptors: engagement, communication, and relationship building.

## **Results/Conclusions**

The results from the study are both quantitative. For the purpose of this study, the response rates for strongly agree and agree were combined into one score as were the strongly disagree and disagree responses. This gave a more accurate picture of the responses either being negative or positive as it relates to the specific question.

The faculty survey had a response rate of 40 faculty members from the college. Any faculty responses with a total score of 26 (65%) or more were identified as talking points. For this research study, responses of Strongly Disagree and Disagree were combined as were Agree and Strongly Agree. There were 26 questions on the survey and the faculty identified 12 as being impactful (see chart below).

The student survey had a response rate of 230 students from the college. Any students responses with a total score of 100 (43%) or more were identified as talking points. For this research study, responses of Strongly Disagree and Disagree were combined as were Agree and Strongly Agree. There were 20 questions on the survey and the students identified 11 as being impactful (see chart below).

The faculty responses resulted in nine questions rated with a minimum 65% agreement for Agree or Strongly Agree - those nine questions were:

- Question 1: My wearing a mask impacts my student's educational experience.
- Question 2: Wearing a mask impedes my ability to read facial expressions.
- Question 5: Wearing a mask requires me to be more expressive to be understood.
- Question 7: My students understand me when I speak wearing a mask.
- Question 13: Wearing a mask makes it difficult to personally connect with my students.
- Question 18: Wearing a mask impedes my student's ability to read my facial expressions.
- Question 19: Wearing a mask impeded my student's ability to understand my words.
- Question 24: My ability to understand my students is affected by them wearing a mask.
- Question 25: I feel more distant from my students when they wear a mask.

Faculty identified three questions that we rated with a minimum 60% agreement for Disagree or Strongly Disagree – three questions were:

- Question 16: Wearing a mask makes me feel dehumanized, less recognizable in the classroom.
- Question 17: Students wearing a mask makes them less approachable in the classroom.
- Question 23: I can read my students reactions when they wear a mask.

The student responses resulted in six questions rated with a minimum 43% agreement for Agree or Strongly Agree - those nine questions were:

Question 2: Wearing a mask impacts my educational experience.

Question 5: Wearing a mask requires me to be more expressive to be understood.

Question 6: Wearing a mask makes me feel less engaged in the classroom.

Question 16: Wearing a mask makes me feel dehumanized, less recognizable in the classroom.

Question 13: Wearing a mask makes it difficult to personally connect with my professor.

Question 20: I recognize my professors outside the classroom when wearing a mask.

Students identified five questions that we rated with a minimum 43% agreement for Disagree or Strongly Disagree – three questions were:

Question 3: Wearing a mask makes me listen more attentively.

Question 7: My professor understands me when I speak wearing a mask.

Question 8: Wearing a mask makes me feel more secure in the classroom.

Question 10: Wearing a mask makes me more comfortable in the classroom.

Question 17: The professor wearing a mask makes them less approachable in the classroom.

Each item on both the faculty and students surveys were identified as being related to engagement (E), communication (C), and/or relationship building (R). Using the information from the data analysis and aligning those results with the three identified areas from the survey netted the following results:

**Table 1.** Faculty Engagement, Communication and Relationship Building Scores

Engagement	Communication	Relationship building	
3	4	6	Strongly Agree/Agree
3	2		Strongly Disagree/Disagree

**Table 2.** Student Engagement, Communication and Relationship Building Scores

Engagement	Communication	Relationship building	
4	1	3	Strongly Agree/Agree
2	1	2	Strongly Disagree/Disagree

Faculty strongly agreed/agreed ratings with the largest impact was on relationship building with 6 items being identified as SA/A, those items were:

1. Wearing a mask impedes my ability to read facial expression.
2. My students understand me when I speak wearing a mask.
3. Wearing a mask makes it difficult to personally connect with my students.
4. Wearing a mask impedes my student's ability to read my facial expressions.
5. Wearing a mask impedes my student's ability to understand my words.
6. I feel more distant from my students when they wear a mask.

Faculty strongly disagreed/disagreed ratings with the largest impact was on engagement with 3 items being impacted as SD/D, those items were:

1. Wearing a mask makes me feel dehumanized, less recognizable in the classroom.
2. Students wearing a mask makes them less approachable in the classroom.
3. I can read my students reactions when they wear a mask.

It is clear to see the perceived impact that wearing a mask in the classroom had from the faculty survey results. Faculty noted the wearing masks impedes ability to read facial expression, understand when speaking, ability to read facial expressions, students ability to understand words – these were all rather obvious items to be identified as impactful. The two maybe not so obvious were that wearing masks make it difficult to connect with my students and I feel more distant from my students when wearing a mask. Special efforts should be made to counter the impact of these two areas as they are critical to student and faculty success in the classroom.

Students strongly agreed/agreed ratings with the largest impact was on engagement with 4 items being identified as SA/A, those items were:

1. Wearing a mask impacts my educational experience.

2. Wearing a mask makes me feel less engaged in the classroom.
3. Wearing a mask makes me feel dehumanized, less recognizable in the classroom.
4. I recognize my professors outside the classroom when wearing a mask.

Students strongly disagreed/disagreed ratings with the largest impact was on engagement and relationship building with each area having 2 statements as SD/D, those items were:

1. Wearing a mask makes me feel more secure in the classroom. E
2. Wearing a mask makes me feel more comfortable in the classroom. E
3. My professor understands me when I speak wearing a mask. R
4. The professor wearing a mask makes them less approachable in the classroom. R

It is clear to see the perceived impact that wearing a mask in the classroom had from the student survey results. Students noted the wearing masks impacts their educational experience, it makes them feel less engaged, less recognizable however the students indicated that their professors were still recognizable outside the classroom even while wearing a mask. The student strongly disagreed/disagreed that wearing mask makes them feel more secure, that it makes them feel more comfortable, that professors can understand them when wearing a mask but said their professors are still approachable even when wearing a mask. Most notable is the statements that the classroom is more secure and comfortable when wearing a mask was not supported from the student perspective.

### ***Educational Importance***

The results of this study will help guide both faculty and students when considering the items identified as important on both the faculty and student surveys. This information would be critical for planning and implementing a successful strategy for teaching and learning moving forward given the current pandemic or unanticipated future events. Even though most of the survey was related to wearing mask in the educational setting, one could derive conclusions applicable to “normal” educational settings as well. Both the faculty and student surveys give a good look as to what is considered important in the eyes of teachers and learners alike, and yet provide information important to improve upon existing mitigation strategies.

Of particular interest were the findings that one might not expect: disagreeing that wearing a mask makes you feel more secure in the classroom; disagreeing that wearing a mask makes you more comfortable in the classroom; and disagreeing that wearing a mask makes the professor less approachable in the classroom. From the faculty perspective that wearing a mask makes them feel more distant from the students; wearing a mask impeded the faculty ability to read facial expression and makes it difficult for student to understand what they are saying.

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