



Analysis of Mississippi Public Schools' Actions to COVID-19 Response in Spring 2020 as it Related to Delivery of Instruction and Grades

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Abstract

On March 11, 2020 the first case of COVID-19 was reported in the state of Mississippi. Within five days, every public school in Mississippi had shut down. Over the next three months school districts either attempted online, hybrid or packet pickup across the state. While the educators are commended for their rapid transition during a Pandemic, some questions have emerged. Specifically, what types of instructional delivery was chosen by the different school districts. In addition, what types of communication was used to assist parents? How did the school districts handle grades and reporting of academic progress? The purpose of the present study was to examine if a relationship existed between school rankings, funding per pupil and percentage of veteran teachers and the delivery methods chosen (online, hybrid, packet). In addition, how did various school districts across the state determine final grade calculations for all of their students? While the events surrounding 2020 were unique to this century, understanding and recording how public schools reacted can gain insight into their actions for future events. The sample for this study consisted of 144 public school districts in Mississippi. Results indicate a significant relationship between funding, teacher experiences, and level of communication in students' academic performance.

Keywords: COVID-19, Grades, Hybrid, Online, Packet, Teachers, School Districts, Mississippi

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1. Introduction

During a three-month period in 2020, public school teachers were asked to do the near impossible. Teachers who had established classroom routines and structure for teaching for the first seven months of the school year were now instructed to immediately transition to virtual learning with less than a week preparatory time. This disruption has been identified as the “largest disruption of education systems in human history” (Pokhrel & Chhetri, 2020, p.133). A disruption caused parents, students, and teachers to adapt to new ways of learning and teaching very quickly (Kazouh et al., 2020). While this transition to virtual learning

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appeared a quick resolution to increase safety, Bettinger and Loeb (2017) stress that online courses are difficult, especially for students that are not prepared.

Chronology of Events During Spring 2020 in Mississippi

On January 21, 2020, the U.S. confirmed the first COVID case in Washington state. This was followed by the first confirmed death on February 29th. Tate Reeves, the governor of Mississippi, along with other governors, joined a virtual call with Vice President Mike Pence to discuss the COVID crisis on March 2nd. Two days after the meeting, Governor Reeves signed Executive order No. 1457 which called for the creation of a Mississippi Coronavirus Preparedness and Response Planning Steering Committee. On March 11, 2020, Mississippi confirmed the state's first case, and this was followed by Governor Reeves declaring a state of Emergency on March 14th. On March 16th, executive order 1458 was signed which required school districts to “immediately begin working with the MDE to develop and implement distancing learning or other instructional means to achieve completion of essential grade-level instruction for the 2019-20 school year. On March 19, Executive order 1460 closed all public schools “effectively immediately” until at least April 17th. On April 1st, executive order 1466 issued a statewide Shelter in Place until April 20th. On April 14th, Governor Reeves announced that Mississippi Schools would remain closed for the rest of the semester thus eliminating any chances of face-to-face resumption for the school year. This was followed by executive order 1476 (April 22, 2020). This order amended order No. 1460 and specifically ordered:

1. All public schools to remain closed for the 2019-20 school year.
2. On or before June 1, 2020, each school district shall submit the Mississippi State Board of Education a plan for summer learning and enrichment.
3. Called for the continuation of distance learning or other instructional means necessary to achieve completion of the essential grade-level instruction for the 2019-20 year.

Mississippi superintendents reported 90% of school districts provided pre-printed self-paced instructional packets, 43% provided self-paced online instruction, and 46% provided some amount of time in synchronous online learning (Javorsky et al., 2021).

COVID-19 Pandemic Emergency Response Effects on Method of Delivery of Instruction

As the first cases of COVID-19 appeared in the United States during the first months of 2020, most schools took action to limit the spread of the virus.

These actions were not uniformed however, responses varied from some form of virtual learning via the internet to pre-printed packets that were picked up by parents. Some schools offered a hybrid option. Schools and teachers had to find ways to provide education to students in these difficult circumstances (Bishop, 2021). Rodrigues, 2021 found the type of distance learning was often adjusted to the accessible means of technology available to the students depending on their location (computers, access to the internet, etc.). The emergency procedures that were implemented highlighted an emergency need for accessibility to technology resources for our students (Wagner, 2020).

The delivery of instruction looked different after the shift to emergency protocols. Students with virtual options were learning how to sign on to synchronized class meetings, how to participate in class activities and discussions online, uploading and submitting work through email or learning management systems. Teachers were also learning the same new skills along with students. Students without virtual options were having to use self-efficacy skills to learn through self-paced learning packets.

Emergency responses to COVID-19 and Grades

The research on the effect emergency COVID responses had on grades is a growing area of focus. Students across the United States have fallen behind in both reading and math according to the Northwest Evaluation Association (Carroll, 2022). Findings also showed that the grades for high school students also dropped in both English and Math (Carroll, 2022).

The transition to emergency learning procedures impacted academic performance. Students were now adapted to new learning software, means of accessing material and assistance, limited interactions with teachers and peers, as well as facing technical challenges and troubleshooting ways to solve them. Students faced challenges in receiving instructional and corrective feedback from teachers cause new or extending previous learning gaps. Access to technology was an identified barrier for students learning many years prior to covid (Tobin, 1999). After emergency protocols were set in place, the need to equal access to technology resources for adequate instruction became an emergency need (Wagner, 2020). Reliable internet or the availability of technology increased risk of falling behind for students needed remote or virtual access to instruction as students began to fall behind in academic performance and skill development (Carroll, 2022).

Academic performance was also impacted by attendance and participation. Students not signing on to virtual meetings, not submitting assignments, or not engaged in discussions and activities also increased risks of failing behind. As

teachers moved to a virtual delivery of instruction, the need for self-efficacy skills for students also became highlighted. Online learning requires self-motivation and self-determination for students successfully learn (Delita & Nofrion, 2022). These self-efficacy skills and motivation are lacking for students according to most Mississippi teachers (Javorsky et al., 2021).

The decline in emotional and mental health also impacted grades as students struggles to understand and cope with changes at school, home, and in the communities. The stress and anxiety caused by the uncertainty of circumstances influenced students' ability to focus and be motivated in academic performance. Many districts reported "going above and beyond" to support students (Jackson & Bowden, 2020). The rural geographical location of Mississippi increases the social and emotional challenges students face (Nichols et al., 2017). Teachers social and emotional health is also an impacting factor in academic performance (Jennings & Greenburg, 2009). Mississippi teacher reported their social and emotional health was also impacted during this time (Javorsky et al., 2022).

Communication has been a predictive factor of positive academic performance (Kraft & Rodgers, 2014). As emergency procedures were implemented, communication between home and school became essential. Mississippi schools used many different methods of communication from text messaging, emails, mailing, and phone calls (Javorsky et al., 2021). While communication was essential, the methods of communication

Similar trends were also seen in post-secondary education, Aucejo et. Al (2020) using a sample from Arizona State University, found 13% of students delayed graduation due to the shift to online instruction. The researchers concluded if students perceived a negative experience with virtual learning due to COVID it would have a possible impact on their academic future. As it relates to funding, Rodriguez-Planas (2011) examined 12,000 college students' grades to determine if a relationship existed between performance and income level during the pandemic. The researchers concluded the top performing lower income students had a decrease in grades by 5% when compared to higher income peers. Both Aucejo et al (2020) and Rodriguez-Planas (2021) concluded lower income college students had a greater risk of facing online learning challenges. The same trends that were seen on a higher education level were also now evident at for elementary and secondary students (Kazouth, 2020).

Amid the COVID-19 pandemic and the shift to distance learning, various educational approaches and student assessments were implemented across different countries (Kuhfeld et al., 2020; Reimers & Schleicher, 2020; Thorn & Vincent-Lancrin, 2021). According to a report by OECD (2021), 56% of countries

did not conduct standardized assessments after school closures in 2020, and this figure increased to 63% in 2021. Consequently, the lack of standardized data makes it challenging to compare student performance to previous years. Given the unprecedented circumstances, it was justifiable to adapt the methods of student assessment and depart from the usual approaches. For instance, in Ireland, teachers calculated and shared summed scores (Doyle et al., 2021). In Estonia and several other countries, traditional exams were canceled and replaced with alternative evaluation methods (Barron Rodriguez et al., 2021). In Latvia, the customary exams for primary school students were referred to as "diagnostic tests" (Regulations on the duration of state examinations in the school year 2020/2021, 2021). However, despite the changes in assessment methods, the general grading system in Latvia remained unchanged, with mean grades calculated for each subject twice a year, maintaining the pre-pandemic approach. Research suggests that calculating mean grades proved to be a valid tool for assessment, as it can predict future achievements, including SAT scores (Kurlander & Cohen, 2019).

2. Methods

Statement of the Purpose

The purpose of the present study was to examine if a relationship existed between the chosen method of delivery, final grade calculation and form of parental communication of Mississippi public schools following executive order 1460 and school ranking, funding as well as percentage of veteran teachers. By examining these relationships, our understanding of what transpired during the three months that concluded the 2019-20 school year will be better understood. To accomplish our goal, we reviewed the 154 "Learning at Home and Summer Enrichment Plans" submitted to the Mississippi Department of Education in May 2020. The plans responses were coded based and entered into SPSS. Data concerning school rankings, funding per student and percentage of veteran teachers was obtained through analysis of each school district's state reported data. Our examination and subsequent analyses were conducted to address the following research questions:

1. Is there a statistically significant relationship between the school ranking (A thru F) and the chosen method of delivery (Distance, Packets, Blended)?
2. Is there a statistically significant relationship between the school ranking (A thru F), school funding or percentage of veteran teachers and the final grade course calculation?

3. Is there a statistically significant relationship between the school ranking (A thru F), school funding or percentage of veteran teachers and chosen method of parental communication?
4. How did school districts in Mississippi decide to calculate final grades as it related to the closure of in person instruction from March to May?

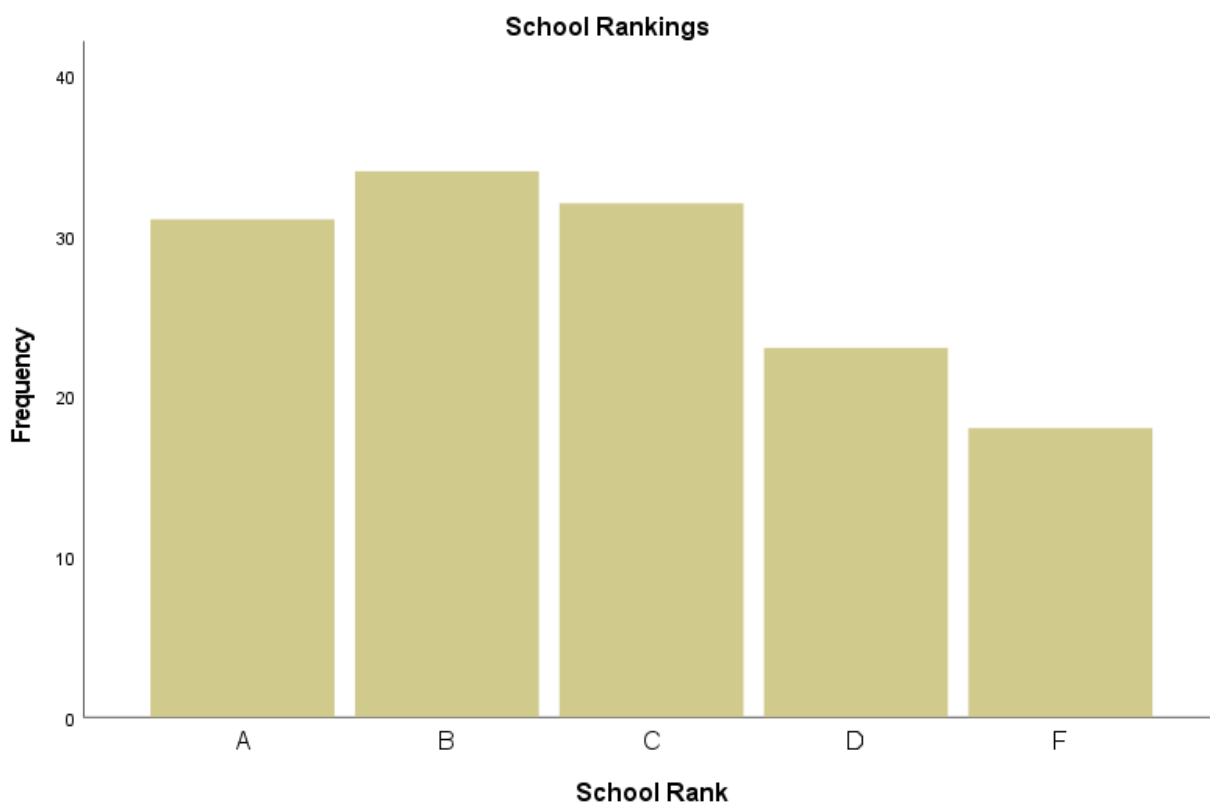
Participants

The sample for this study consisted of all 137 public and 7 charter school districts in Mississippi. The school district's rankings were collected from the 2018-2019 state report card because this was the last year prior to COVID that rankings were determined.

Data Collection

Participants for this study were identified through a review of public records available through the Mississippi Department of Education (MDE) website. In Spring 2020, all public schools were required to submit reports titled "Learning at Home and Summer Enrichment Plan." The reports had separate sections (see appendix for sample form). For this study, the sections dealing with mode of delivery and content, final course grade calculation, summer learning delivery, and forms of parental communication were coded. Though many of these cases are in the public record, no personally identifiable information is included in this study to protect the anonymity of the individuals whose cases are included in our analyses.

Figure 1



Data Analyses

Cross-tabulation tables were constructed to examine whether relationships existed between the school ranking, method of delivery, form of parental communication, level of school funding, amount of experience teachers, and final grade calculation method. To determine the significance of these relationships, a Pearson chi-square test was computed for a pairwise comparison was conducted. As a follow-up, phi coefficients were computed as a measure of effect size to provide additional information on the strength of any significant associations noted between these sets of variables.

3. Results

Our first research question sought to understand whether a relationship exists between school ranking and the chosen method of delivery from March to May? To address this research question, we computed a bivariate Pearson's r correlation. Our results did not indicate the presence of a significant relationship between the school ranking and chosen method of delivery, $r(144) = -.146$, $p = .087$.

Our second research question sought to understand whether a relationship exists between the school ranking (A thru F), school funding or percentage of veteran teachers and the final grade course calculation? To address this research question, we computed a bivariate Pearson's r correlation. A highly significant relationship existed between the 2018-2019 school ranking and the amount of money allocated for each pupil. ($n=144$ $r=-.433$, $p < .001$). A highly significant relationship also existed between the 2018-2019 school ranking and the experience of teachers within the schools ($n=144$, $r=.521$, $p < .001$). No significant relationship is noted between the 2018-2019 school rank and the final grade calculations ($n=144$, $r=-.015$, $p=.859$).

Our third research question examined whether there were statistically significant relationships between the school ranking (A thru F), school funding or percentage of veteran teachers and chosen method of parental communication? A highly significant statistical relationship exists between the 2018-2019 school ranking and the amount of money allocated for each pupil ($n=138$, $r=-.433$, $p < .001$). A highly significant relationship also existed between the 2018-2019 school ranking and the experience of teachers within the schools ($n= 138$, $r=.521$, $p < .001$). No significant relationship exists with print, social media, letters, or other. A significant relationship did exist between email communication and the 2018-2019 school ranking ($n=144$, $r=.173$, $p=.05$).

The final research question sought to examine how final grades were calculated. No significant relationship was found between the method in which grades were calculated and all other variables. Descriptive statistics revealed:

- Forty-eight (48%) of schools averaged the first, second and third nine-week grades with fourth nine weeks assignments submitted through packets, or digital methods.
- Eighteen (12%) Used the third nine weeks grade as the final average for the school year.
- Seven (5%) gave a final exam in May that was averaged with the 1st thru 3rd 9 weeks grades.
- Forty-five (31%) chose another method they marked as "other"

4. Discussion

The purpose of this study was to determine the impact of Mississippi's emergency response procedures during the beginning of pandemic shutdowns. The data was also analyzed to identify relationship between school rank, funding, teachers experience, communication method, and method of calculating final grades.

The data determined no existing relationship between method of delivery and school ranking. There was no relationship between rank and final grade calculations. No relationship was determined between how grades were calculated and any other variable. In contrast, funding, experience of teachers, and specific methods of communication were found to have a significant relationship on the ranking of the school.

5. Conclusions / Implications

Academic performance was impacted by funding. The majority of Mississippi administrators indicated support from community partners in providing online instruction to students (Javorsky et al., 2022). Reviewing how allocated funding was spent and what purchases benefited students is needed to determine best practices moving forward. The significant relationship between ranking and communication, indicates a need to further examine procedures in communicating with staff and families. Most Mississippi School districts utilized one of the following primary methods of communication; automated voice calls or text messaging, mass emailing, postal mail, video calls/conferences, news media, learning management systems, printed newsletters, individual phone calls, home visits, or social media (Javorsky et al., 2022). The most effective methods were reported to be social media and automated text messaging (Javorsky et al., 2022). Establishing a plan to prepare to update staff and families of class, school, or district changes is a key in maintaining academic performance.

While most students and teachers experienced negative circumstances during the emergency response procedures, learning from those experiences to make the delivery of instruction more effective and accessible is necessary. The need to prepare teachers for flexible learning and home to school communication strategies would also increase the positive learning outcomes for students.

Limitations of the Study

The study is limited to public records that were released by local school districts. District plans were self-reported. Plans may have been altered without notification to MDE.

Directions for Future Research

The findings of this research have identified impacting factors of academic performance. The financial investment, experience of teachers, and method of communication are all areas to continue research to determine specific best practices in providing effective instructions. Learning from what practices and procedures worked and which ones did not work for our students will help establish better emergency procedures if ever needed in the future.

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