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7. Political approach employs objectives that emerge spontaneously but are personally driven by the leader's need for power [8].

The research thesis was that Wisconsin district administrators' decision-making approaches during the COVID health emergency were more classical and shared than political; and that they were primarily driven by the well-being of students and staff.

### 3.2. Sample and Data Collection

Surveys involve the collection of information through standardized questionnaires or interviews. Cohen, Manion, and Morrison (2007) described surveys as tools to "gather data at a particular point in time with the intention of describing the nature of existing conditions, or identifying standards against which existing conditions can be compared or determining the relationships that exist between specific events." [5]

A survey was emailed to 422 Wisconsin district administrators, whose email addresses were retrieved from the Wisconsin Department of Public Instruction's directory of district administrators. Most of the invitees were superintendents and some were district directors. Only 36 completed the IRB-approved Qualtrics anonymous survey, which represented 8.5% of the total population of the state's district administrators. Only 31 completed the interview questionnaire and 32 completed the demographic data questions. Survey completion reminders were emailed at 2-week intervals and an anonymous consent form was also sent along with the survey. The low participation rate could be explained by the sensitivity of the COVID-related issues and the dynamics of district and community reactions to COVID state mandates.

The survey instrument used in this research project consisted of 35 Likert-scale questions, 11 open-ended interview questions, and 10 demographic data questions. The 35-question Problem-Solving and Decision-Making Survey was created by Polka and his colleagues [14] and was based on the seven decision-making and problem-solving approaches developed by Hoy and Miskel [7]. The seven decision-making approaches are defined below:

1. Classical approach is the rational systematic means-ends analysis focused on optimizing organizational goals.
2. Incremental approach is the successive search for reasonable alternatives to facilitate good decision-making.
3. Garbage Can approach consists of scanning and using previously identified solutions to solve problems.

4. Shared Decision-making approach empowers others to assist in finding solutions to problems meaningful to them.

5. Satisficing approach consists of making decisions that are acceptable to most of those impacted.

6. Mixed Scanning approach involves broad ends and tentative means that focus on adapting decisions to policy guidelines.

7. Political approach employs objectives that emerge spontaneously but are personally driven by the leader's need for power [8].

Participants were also requested to answer eleven open-ended questions to elicit their perspectives on how they addressed the challenges posed by the COVID health emergency in their districts. The interview questions sought to identify the frequency and duration of school closures due to the COVID-19 pandemic; the learning structures and modalities that were used during school closures and the factors that had impacted such decisions; the stakeholders considered when making decisions about school closings and the extent of their influence; the decision-making process that was followed and the priorities set when making decisions; and other district closure questions.

Qualitative data from the interview open-ended questions will be categorized and coded using Marshall and Rossman's thematic analysis approach (1989). Marshall and Rossman suggest that thematic analysis can be divided into six phases:

1. Organizing the data
2. Generating categories or themes
3. Coding the data
4. Testing emergent understandings of the data
5. Searching for alternative explanations of the data; and
6. Writing the data analysis [12].

The process of generating categories seeks to find patterns in interviewees' data [12]. Coding was used to identify categories in the participants' responses that were organized into themes, which were analyzed against the research questions. The purpose of coding according to Marshall and Rossman (1989) is two-fold:

- a) to apply the categories to the data
- b) to enable examples of the data to be used in the write-up of the qualitative data analysis [12].

The ten demographic data questions included: (1) gender, (2) years of total educational experience, (3) years of administrative experience, (4) current position, (5) years in current position, (6) number of superintendencies held, (7) school district setting, (8) school district student population, (9) number of administrators in the district, and (10) number of schools in the district. Data from the ten questions were analyzed using Qualtrics Stats iQ for statistical

correlations between them. The rationale for studying the relationships between the variables is to

#### 4. Results

Data from the survey and demographics were analyzed using Qualtrics Stats iQ and the responses from the interview questionnaire were analyzed using Qualtrics Text iQ. Using descriptive statistics, the data from demographic questions showed that 26 of the respondents were superintendents (78.1%), one was both a principal and superintendent, and 6 were district administrators. Gender data showed that 21 (65.6%) were male and 11 (34.4%) were female, which was higher than the national average of 21.7% [1]. The district setting results showed that 90.6% of districts were rural, and the rest were urban or suburban. Number of administrators who were in their current positions for 1 to 3 years was 14 (43.8%), those with 4 to 10 years was 14 (43.8%), and the rest had more than 11 years of tenure in their current positions. The results indicated a high turn-over rate of district administrators compared to the mean tenure for superintendents, which was five to six years [1].

Table 1. Demographic characteristics of the respondents

No	Demographic Characteristics	Respondents	
		Total	%
1.	<b>Gender</b>		
	Male	21	65.6
	Female	11	34.4
2.	<b>Current Position</b>		
	Superintendent	26	78.1
	District Administrator	6	18.8
	Principal/Superintendent	1	3.1
3.	<b>School District Setting</b>		
	Rural	29	90.6
	Suburban	2	6.3
	Urban	1	3.1
4.	<b>Years in Current Position</b>	14	43.8
	1-3	14	43.8
	4-10	3	9.4
	11-17	1	3.1
	18-24		
5.	<b>Number of Superintendencies Held</b>		
	1	19	59.4
	2	8	25.0
	3	3	9.4
	4	2	6.3

		Years of Administrative Experience	
6.	1-3	1	3.1
	4-10	5	15.6
	11-17	9	28.1
	18-24	14	43.8
	25-31	3	9.4
		Years of Total Educational Experience	
7.	4-10	1	3.1
	11-17	2	6.3
	18-24	7	21.9
	25-31	17	53.1
	32+	5	15.6

In terms of statistical correlation, several demographic variables showed a strong statistically significant relationship between them. For example, the relationship between the variables “District Administrators’ Years of Total Educational Experience” and “Years of Administrative Experience” were clearly significant at a P-Value of 0.03. A robust value of statistical significance (0.02) was found in the relationship between the variables “Years of Total Educational Experience” and “District Setting”. This correlation is likely skewed towards rural settings as 93.1% of rural district administrators had over 18 years of educational experience. The statistical findings also showed other correlations. For example, there is a strong statistically significant relationship between the variable “School District Setting” and the two variables “Number of Schools in District” and “School District Student Population.” There is also a strong statistically significant relationship between the variable “Number of Administrators in District” and the two variables “School District Setting” and “Number of Schools in District”. Lastly, there is a strong statistically significant relationship between the variable “School District Student Population” and the two variables “Number of Schools in District” and “Number of Administrators in District.”

Using the seven decision-making models by Hoy and Miskel [7] and data scoring sheet by Polka and his colleagues [14] (1 being lowest and 4 the highest), the results from the survey showed that Wisconsin district administrators’ decision approaches scored higher in Incremental (3.19) and Classical (3.07). Mixed Scanning came third with 2.81. Shared Decision-Making and Satisficing were above average with 2.68 and 2.66, respectively. The lowest decision-making models in terms of user frequency were Garbage Can (2.51) and Political (2.2). These survey results indicated that Wisconsin district administrators preferred decision-making models that require rational systematic means-ends analysis focused on optimizing organizational goals, and successive search for reasonable alternatives to facilitate good

decision-making. They also seek to empower others to assist in finding solutions to problems meaningful to them, to make decisions that are acceptable to most of those impacted, and to involve broad ends and tentative means that focus on adapting decisions to policy guidelines. By contrast, these administrators did not favor decision-making approaches that consist of using previously identified solutions to solve problems and employing objectives that emerge spontaneously but are personally driven by the administrator's need for power.

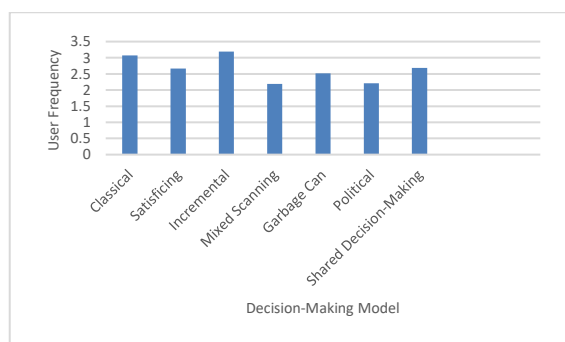


Figure 1. Decision-making use frequency

The results from the interview questionnaire revealed that all Wisconsin district administrators followed state mandates to close the schools but relied heavily on input from stakeholders before making any mitigation decisions or choosing any learning format. They prioritized the well-being of students, families, and staff when making such decisions. The primary factors taken into consideration by district administrators to decide on virtual or in-person learning included guidance from health authorities, number of infection cases, student learning, availability of technology, and community dynamics.

Using coding to identify categories in the participants' responses to the 11 open-ended interview questions, the major emerging themes were seven as follows:

(1) Wisconsin district administrators' decisions on COVID-related issues depended on state mandates and were well informed by guidance from federal, state, and local health authorities. In one interview response, a superintendent wrote:

*We only considered the advice of experts (CDC, DHS, local health department, HGHI) and the science of the disease.*

(2) Students' well-being was the highest priority in making their decisions, and staff and parents were also considered as priorities in making those decisions as one district administrator stated:

*We went back to in-person learning for 2 reasons: First, students learn better in the regular classroom, and second, we have more than 50% poverty in our district and both parents needed to*

*work and could not be at home with their children. we did not want children being left home alone and unsupervised for their safety.*

(3) Stakeholders (health authorities, teachers, parents, boards of education, businesses, community) were almost always included in the decision-making process. One superintendent noted:

*We openly discussed the options in open session of the board meetings. When we thought we had a working model we held a public hearing to discuss what we thought would work and we took questions from the public concerning the details and the reasoning behind the plan.*

(4) The district administrator or board of education initiated and involved the district leadership team in the decision-making process. This statement is an example from theme 4:

*Administration made the big rock decisions, teachers and school sites operationalized for site and level and then turned back identified problems and solutions in that planning for district consideration if needed.*

(5) The main factor behind going back to in-person learning was student needs. One statement from theme 5:

*We went back to in-person learning for 2 reasons: First, students learn better in the regular classroom, and second, we have more than 50% poverty in our district, and both parents needed to work and could not be at home with their children. we did not want children being left home alone and unsupervised for their safety.*

(6) The learning modalities during the COVID pandemic were in-person, hybrid, and virtual. A district administrator elaborated on their learning modalities:

*When the State imposed mandatory school closures in the spring, we moved to all on-line/ virtual instruction. We immediately began planning for the start of the 19-20 school year. We developed a comprehensive re-opening committee composed of staff, public health, and doctors from the community. We developed a plan with cohorting at our elementary buildings allowing students to attend 5 days per week, in-person for the 19-20 school year. Our secondary buildings are much larger (over 1,000 students at the middle and high schools) which required us to implement a hybrid approach in which half of the student body attended Monday and Tuesday in-person while the other half attended Thursday and Friday in-person and were virtual/ off-site the remainder of the week. We utilized that approach until around March of 2020 when we moved to 4 days of in-person instruction 6-12, then finally 5 days of in-person instruction to end the school year. We also offered fully off-site/ virtual options for any student/ family interested in that approach for the duration of the year.*

(7) District administrators provided study packets to students without reliable internet connections and delivered meals to homes of eligible students. One superintendent mentioned that:

*We were closed like all schools due to the stay-at-home order. We provided remote learning via electronic device and packets for all students.*

Another one said:

*Our district, like all the others in the state was forced to close by DHS and the state in the spring of 2020. Our district worked hard to provide meals, attempted to provide lessons virtually.*

## 5. Discussion

The analysis of Wisconsin school district administrators' perceptions of their responses to the COVID pandemic showed a level of uncertainty regarding school openings and closures that are like the responses of school districts during the 2009 H1N1 pandemic outbreak in the United States as reported by Klaiman et al. [11]. This uncertainty was clearly reported in the superintendents' responses to the interview questions. One district administrator noted: "We had so many unknowns, we closed down and went with remote learning for the remainder of that year." However, there was consistency in adhering to state and local mandates that governed school closures, masking, social distancing, and other health measures as mentioned by one superintendent: "We followed all state mandates. When planning on reopening we had five district groups with staff, parents and students that were involved in reopening plans." Use of remote learning during the pandemic peak period was dominant across the districts and took the forms of asynchronous and synchronous using LMS platforms such as Canvas, Google Classroom, and Schoology, in addition to other tools such as Zoom, Google Meets, Bluejeans, Acellus, and SeeSaw. However, there were inter-district variations in handling COVID mandates between rural and urban districts, with rural districts lessening the pandemic restrictions and opening schools for in-person learning long before the urban districts. This variation was exemplified by a superintendent of a rural district: "As a rural school about 30 percent of our families did not have internet service. We had ten percent that did not even have cell service at their house, so hotspots would not work." Urban districts, on the other hand, did not experience these challenges and were able to keep remote learning during the Spring semester of 2020.

In terms of decision-making during the COVID period, the results of the research show that Wisconsin district administrators faced similar challenges as districts during the 1918 Influenza and H1N1 pandemics. To overcome these challenges, the superintendents turned to their constituents for

guidance before making decisions. For example, one administrator said: "We did several community surveys with parents to gather information to help the administration and school board make decisions." Educational leaders in Wisconsin had to navigate uncharted territories and weigh their options while addressing health safety concerns and public demands for opened schools. Their management of school closures was an 'uncertain art' according to Awofisayo et al. [3]. They "They followed CDC guidelines to the tee" and acted upon the relevant knowledge proposed by Klaiman et al. [11] that decisionmakers should make their goal of school closing clear and the measures should be modified based on scientific knowledge. They also used an integrated and coordinated response strategy involving multiple partners and stakeholders using a command-and-control structure with specifically designated leadership roles and clear responsibilities as recommended by Awofisayo et al. [3]. One superintendent had "to weigh all of the opinions and try to make decisions that will be best for the students and yet safe for everyone involved." Another one wrote: "There were many decisions that had to be made with information provided by many outside groups. There was never a doubt that we were going to reopen in the fall of 2020 - the question was how we were going to do it and do it safely. A stakeholder team was assembled, and we came up with a plan that was a fit for our district. The plan worked."

Wisconsin district administrators' decision approaches during the COVID-19 pandemic scored higher on incremental (3.19) and classical (3.07). Mixed scanning came third with 2.81. Shared decision-making and satisficing were above average with 2.68 and 2.66, respectively. The lowest decision-making models in terms of user frequency were garbage can (2.51) and political (2.2). The study findings showed that their decision-making process was primarily rational. They favored incremental and classical approaches to decision-making when dealing with state health mandates. The incremental approach is the successive search for reasonable alternatives to facilitate good decision-making. The classical approach involves a rational systematic means-ends analysis focused on optimizing organizational goals. These findings corroborate the study thesis that administrators' approaches are essentially classical and incremental. They also show how the administrators avoided the garbage can approach (scanning and using previously identified solutions to solve problems) and the political approach (spontaneous objectives are personally driven by the leader's need for power.)

The incremental and classical approaches helped the administrators to reach decisions based on scientific knowledge to determine opening or closing of schools, offering remote or in-person learning, and postponing or resuming sports in addition to other

extracurricular events. These approaches were clearly described in these superintendents' statements: "We did several community surveys with parents to gather information to help the administration and school board make decisions;" and "The school board, public meetings, and parents of students were listened to, while considering scientific evidence for the final decision based on the CDC, Wisconsin DHS and Ashland County Health Department."

Finally, the statistical correlation findings of the demographic data showed strong relationships between many variables that help shed light on the characteristics of the administrators and their districts. Cohen, Manion, and Morrison (2007) described correlation as a tool that "enables a researcher to ascertain whether, and to what extent, there is a degree of association between two variables" [5]. The first finding is that the district administrators with the longest educational experience had the most administrative experience. However, superintendents in rural areas had the longest educational experience, as compared to urban districts. The significant relationships between the variable "School District Setting" and the two variables "Number of Schools in District" and "School District Student Population" can be explained by the fact that rural districts have fewer schools and less students than urban districts. The strong relationships between the variable "Number of Administrators in District" and the two variables "School District Setting" and "Number of Schools in District" can also be explained by the nature of the district. In rural districts with fewer schools, the number of district administrators is minimal compared to urban districts. Lastly, the significant statistical relationships between the variable "School District Student Population" and the two variables "Number of Schools in District" and "Number of Administrators in District" refer to the fact that urban districts have higher student enrollments, and more schools and administrators as compared to rural districts.

These statistical relationships reveal the importance of including rural, suburban, and urban districts in this type of study in order to demonstrate that having a diverse sample population can yield significant correlations among the variables and help explain their relationships clearly. However, the small sample size in this study yielded low or near zero values because "the level of statistical significance of a correlation is determined to a great extent by the number of cases upon which the correlation is based." [5].

## 6. Conclusion

Past pandemics created formidable challenges for schools and prompted health authorities to develop prevention and mitigation measures to protect

students and staff, but COVID-19 presented a more serious threat to educational institutions due to its universal widespread and nefarious impact on the health of people of all ages. When past health emergencies forced schools to close in order to control the spread of diseases during the 1918 influenza and 2009 H1N1 pandemics, students discontinued their education until schools reopened. During the COVID-19 pandemic, school districts in Wisconsin and other states had more options to keep students connected with their education, thanks to the internet, even when schools were closed by state mandates.

Compared to past pandemics, school district administrators during COVID-19 had to navigate the challenges of closing schools in response to higher infection rates and opening them to bring students back to in-person learning. They had to abide by the guidelines of state and local health authorities, engage their school boards, and communicate with parents while ensuring the safety and security of their students and staff. The efforts of district administrators to deal with these and other challenges required making decisions that will affect the education of children and the health of students and staff.

This research article explored the decision-making models followed by Wisconsin school administrators to determine if schools open or remain closed, and the online modalities and platforms to be used in case of remote learning. The study also explored the factors impacting their decision-making process. The research findings have broad implications for Wisconsin and other states' districts on how to respond proactively to future health emergencies. These include using a variety of decision-making models that invite collaboration and involvement of many stakeholders; prioritizing student well-being and learning in those decisions; and following guidance from health authorities.

The study's numerical findings have demonstrated that district administrators in Wisconsin favored incremental and classical approaches to decision-making when dealing with state health mandates, and disfavored the garbage can and political decision-making approaches. The seven themes emerging from the respondents' statements described how their decisions on COVID-related issues were well-informed by guidance from federal, state, and local health authorities. They also prioritized the well-being of students, families, and staff when making such decisions. Examples of this prioritization included the use of in-person, hybrid, and virtual learning modalities, providing study packets to students without reliable internet connections, and delivering meals to homes of eligible students. The study also showed that the decision-making process was initiated by the district administrator or board of education and involved the district leadership team.



The COVID-19 health emergency presented many challenges for district administrators across the country. By understanding how Wisconsin district administrators make decisions on closing or opening their schools and the learning modalities to be implemented during closures, and by replicating these best practices in other Wisconsin school districts, we can develop a better health emergency preparedness program in Wisconsin schools and throughout the country. Such an effort would expand and strengthen the districts' partnerships with public health authorities to mitigate the dangers of any future health emergency.

## 7. Recommendations

To explore opportunities for further research on this topic, the author would like to recommend the following:

1. This study was limited to Wisconsin school district superintendents. Expanding the study to include principals would increase the number of respondents and would include a more diverse population in terms of gender and racial background.
2. Using other valid and reliable survey instruments and questionnaires would shed more light on the decision-making approaches of district administrators and would provide more insight their decision-making models.
3. One-on-one interviews using in-person or virtual modalities would provide a much deeper insight into the decision-making models used by school district administrators and report in detail the challenges they encounter when dealing with public health emergencies.
4. Conducting a comparative study of multiple states' policies dealing with pandemic responses in school settings would provide opportunities to examine the approaches of state educational agencies in determining health mandates affecting school closures.
5. Conducting a comparative study of COVID-19 and past pandemics in relation to schools to research administrators' approaches to decision-making.

## 8. Limitations

This study explored the decision-making approaches used by Wisconsin district administrators when addressing COVID-19 pandemic-related school closures. It also examined the factors that impacted their decisions to close the schools or keep them open, the stakeholders considered when making these decisions, and the learning formats and platforms used

during school closures. However, there are several limitations in this study that are worth mentioning:

1. This study was limited to Wisconsin school district superintendents only.
2. Most school districts (90.6%) participating in this study were in rural areas.
3. Decision-making approaches used in this study were limited to the seven models developed by Hoy and Miskel (2008) and the data scoring sheet created by Polka and his colleagues (2014).
4. The study's mixed methods approach was more qualitative than quantitative.
5. Pandemic-related health mandates and restrictions regulating school visits and in-person meetings in Wisconsin districts prevented the researcher from conducting in-person interviews and required the use of online surveys and interview questionnaire only.

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