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Undergraduate Student Article: Teachers' Observations of Adolescent Social Behavior Patterns in Rural Oklahoma Following the COVID-19 Pandemic

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Abstract

The COVID-19 pandemic in 2020 changed the lives of many individuals throughout the United States and the world. This study hypothesized that the increased use of digital media following the COVID-19 pandemic impacted adolescent social behavior patterns. The sample included 26 fifth through twelfth grade rural public-school teachers in Oklahoma, recruited via email. This mixed methods study used an explanatory sequential design with a quantitative online survey followed by an optional qualitative interview. The quantitative survey employed Likert scales, yes/no questions, ratings, and open-ended questions to gather data about adolescent behavior both before and after the COVID-19 pandemic. An optional online interview gathered qualitative data using structured and follow-up open-ended questions. Findings indicated that adolescent social behavior patterns have changed, and adolescents are more reliant on digital media as a tool for socializing. Additionally, the data indicated increased anxiety levels in adolescents following the COVID-19 pandemic, as well as other unexpected results. Although adolescent social behavior patterns did seem to be impacted, increased anxiety levels in adolescents following the COVID-19 pandemic could indicate adverse effects in areas not explored in this study.

Introduction

In March of 2020, the United States faced major change due to the COVID-19 pandemic. Many lost jobs and loved ones, and daily life faced drastic changes, seemingly overnight. The stay-at-home orders implemented in many areas facilitated reliance on digital media and other forms of technology for communication during this period of isolation. There is no doubt that COVID-19 and the subsequent stay-at-home orders changed the way many individuals live their lives. The current study aims to look at how these changes may have impacted adolescent social development.

This study examined rural educators' perspectives of the possible influence of digital media use on adolescent social behavior following the COVID-19 pandemic. The influence of digital media has been a topic of study for many years. In *The Journal of Youth and Adolescents*, Arnett (1995) details the increasing use of digital media and how adolescents have begun to use it as a tool for socializing. In the absence of face-to-face interactions with peers during the stay-at-home orders instituted due to the COVID-19 pandemic in 2020, many adolescents used digital media as their primary source for socializing with peers. Levine and Munsch (2021) explain that adolescence is a critical point in the development of social skills, which begs the question of if this shift from face-to-face interaction with peers to digital communication and schooling has impacted adolescent social behavior patterns of adolescents during this critical period.

This study investigated rural teachers' perspectives of the possible impacts of the COVID-19 enforced lockdown procedures on adolescent social behavior patterns in rural schools in Oklahoma. Research was conducted through the lens of a student who experienced the COVID-19 pandemic and witnessed the social changes that came with it firsthand. The sociological impacts of the COVID-19 pandemic have just begun to be investigated, and there is much surrounding this topic that has yet to be explored, especially in rural populations.

This study serves to examine rural teachers' perception of the association between the reliance on digital media for communication following the COVID-19 pandemic and changes in adolescent social behavior patterns. Both quantitative and qualitative data were collected from Oklahoma public school teachers to answer the following research questions.

1. How has the shift from face-to-face social interactions at school to virtual communication and schooling following implementation of COVID-19 safety procedures impacted the ways in which adolescents socialize with each other now that most restrictions have been lifted?
2. To what extent have adolescents become more reliant on digital media and personal electronics as a means of socializing than in years prior to the COVID-19 pandemic?

Review of Literature

Adolescence is a significant period of development (Levine & Munsch, 2021). There are differing opinions about what age and developmental markers distinguish adolescence. Smetana et al. (2006) define adolescence through three distinct periods: early, middle, and late adolescence. Early adolescence ranges from age 10 to 13, middle adolescence from 14 to 17, and late adolescence from 18 into the early 20s (Smetana et al., 2006). The transition from adolescence to adulthood is typically defined by marriage and parenthood (Sawyer et al., 2018) and entry into the workforce (Smetana et al., 2006). Because of shifting social norms involving prolonged

reliance on parents and family systems, Sawyer et al. (2018) proposed that adolescence should extend to age 24. However, Arnett (2007) put forward the notion that the point between ages 18 and 25 should be categorized as a different period of development entirely called emerging adulthood.

Socialization begins in infancy and involves modelling appropriate social behaviors. Early in life, a child's parents act as the primary source of socialization (Levine & Munsch, 2021). However, as children get older, the relationship with their parents changes. Conflicts with parents increase in early adolescence in line with the onset of puberty (Steinberg & Morris, 2001), and are commonly experienced in families with adolescent children (Smetana et al., 2006). This increased conflict can lead to decreased closeness between parents and their adolescent children (Steinberg & Morris, 2001). At the same time, adolescents begin spending less time with their parents and more time alone or with their peers (Smetana et al., 2006; Steinberg & Morris, 2001). Middle adolescence marks a time in which adolescents are most influenced by their peers (Steinberg & Morris, 2001). Although parents still influence their children's long-held beliefs like morals and values, adolescents begin to be more influenced by their peers for things like personal style, taste, and appearance (Smetana et al., 2006). Peers also impact adolescents' academic achievement, prosocial behaviors, and problem behaviors (Steinberg & Morris et al., 2001). Three kinds of peer relationships are most prevalent in adolescence: friendships and romantic relationships, cliques, and crowds. Close friendships and relationships with peers improve social skills (Smetana et al., 2006), so adolescents who lack close friendships tend to be more reliant on their parents to continue to develop social competence (Steinberg & Morris, 2001). Additionally, the socialization adolescents received from their parents shape the relationship they have with peers during adolescence (Levine & Munsch, 2021; Steinberg & Morris, 2001). Cliques and crowds are distinct from each other, though they both involve group dynamics. Cliques are small peer groups based on friendship and shared activities that teach adolescents about initiating interactions, social support, and self-disclosure. Crowds are larger social networks demarcated by stereotypes and reputations (i.e. "nerds", "jocks", "popular kids") that influence the way adolescents view themselves and establish social norms within a community of adolescents (Steinberg & Morris, 2001).

Digital media use has increased considerably over the past few decades (Twenge et al., 2018). In the past ten years, adolescents engage more and more with technology (Genner & Süß, 2017; Twenge et al., 2018) and have become progressively more devoted to spending time on mobile devices (Genner & Süß, 2017) than in previous years. Adolescents engage with digital media at rates more aligned with adults than younger children (Twenge et al., 2018), and are more exposed to its effects (Genner & Süß, 2017). Although some content that adolescents engage with digitally might trouble parents and other adults in their lives, digital media can also be a useful form of socialization. Arnett (1995) explored this topic a few decades ago when media use among adolescents became common. Although the media described are now somewhat dated, the ideas presented are relevant to the present study. The following discussion details these findings. Digital media helps adolescents engage with and either assume or rebuff the cultural beliefs and behaviors associated with their culture. There are two kinds of socialization that occur with respect to one's culture: broad socialization and narrow socialization. Broad socialization encourages individuals to explore and pursue avenues of social and psychological development that interest them (via peers and close friends), whereas narrow socialization encourages conformity of those

in a given culture to the standard beliefs and principles associated with that culture (via family systems). Digital media as an agent for socialization falls into the category of broad socialization because a plethora of influences and behavior models exist there. Broad socialization through digital media occurs independently from parents and other adults in adolescents' lives, making this kind of self-socialization most akin to social interaction with peers. Although socialization through digital media bears similarities to socialization with peers, it is unique in one key aspect. In most cases involving non-media socializers, socialization involves passing down beliefs, values, and social principles generationally. However, most digital content adolescents engage with online is economically driven. This results in content aimed at keeping adolescents' attention. Adolescents are more likely to engage with digital media than other age groups because childhood sources of socialization (parents) have diminished but adult sources of socialization (long-term employment, marriage) have not yet occurred. Although many forms of digital media are economically driven, digital media continues to support adolescent social needs and social development (Genner & Süs, 2017; Twenge et al., 2018).

Identity development is a key developmental task in adolescence. Social contexts, interpersonal relationships, and now media all impact identity development (Davis, 2013; Genner & Süs, 2018). Digital media has altered established social contexts and created new settings in which adolescents can explore their identities. Davis (2013) found that adolescents' internet use directly impacts identity because it influences friendship quality. Davis examined this finding through the lens of the following theories about adolescent internet use. Two contrary hypotheses exist that attempt to explain how internet use by adolescents impacts relationships in real life. The displacement hypothesis predicts that offline friendships are weakened by online activities because it replaces time that would have been spent engaging in face-to-face interactions. Conversely, the stimulation hypothesis asserts that internet use provides more opportunity for adolescents to engage with offline friends, which improves relationship quality and increases closeness within their friendships. Empirical data supports the stimulation hypothesis. Additionally, two hypotheses exist regarding how digital media might impact identity formation in adolescence: the self-concept fragmentation hypothesis and self-concept unity hypothesis. The self-concept fragmentation hypothesis poses that the wide variety of people and diverse environments accessible through the internet challenges adolescents' ability to form a stable identity. The self-concept unity hypothesis postulates that the internet allows for identity experimentation and provides validation that aids in successful identity development. Empirical data collected by Davis (2013) supports the former. Furthermore, the reasoning behind adolescent's motivation for engaging with digital media influences identity development. Adolescents motivated to go online to communicate with their existing, offline friends experiences higher self-concept clarity than those who went online to explore different facets of their identity, which is consistent with the self-concept fragmentation hypothesis. Additionally, adolescents are more often motivated to go online to engage with their existing friends, which aligns with the stimulation hypothesis (Davis, 2013). However, these hypotheses have yet to be explored after the COVID-19 pandemic, which could have a great impact on adolescent socialization as it relates to digital media.

The COVID-19 pandemic drastically changed many aspects of daily life seemingly overnight. To lessen the spread of the COVID-19 virus, the United States endorsed a number of nonpharmaceutical interventions. School closures made up a large portion of these interventions.

In March of 2020, all 50 states moved to close kindergarten through twelfth grade schools, as well as daycare facilities (Donohue & Miller, 2020). While these closures prevented the spread of the disease, it also presented new social challenges for students throughout the country, especially adolescents. While adults easily sustain relationships through virtual means, children and adolescents depend more on school and extracurricular activities to socialize in person. Therefore, the COVID-19 pandemic presented issues in terms of adolescent socializing needs. Although digital media offered a convenient avenue for both adolescents and adults to keep up with friends and other social relationships, this virtual communication does not replicate the benefits of face-to-face social interactions for adolescents and younger children, which created problems in the maintenance of adolescent friendships during the pandemic (Larivière-Bastien et al., 2022). Though increased digital media use by adolescents during the pandemic has been reported (Foulkes & Blakemore, 2021; Nagata et al., 2021), conflicting ideas exist about whether it helps or hinders development. While sources agree that socializing through digital media does not have the same benefits as face-to-face interactions, (Foulkes & Blakemore, 2021; Nagata et al., 2021; Rodman et al., 2022), disagreements occurred regarding its relationship with the development of psychopathology during the pandemic. Nagata et al. (2021) found that adolescents who used digital media as an escape from pandemic-related stressors were more likely to experience mental health struggles and those with more social support reported less screen time during the pandemic. However, Rodman et al., (2022) found that increased use of digital media during the pandemic lowered the likelihood of internalizing pandemic-related stress in adolescents. This difference could be attributed to individual differences in circumstances that existed during the pandemic. Branje and Morris (2021) found that adolescents with more social support during the pandemic experienced fewer negative outcomes than their peers without adequate social support. The same was true regarding anxiety during the pandemic. Anxiety disorders are the most prevalent disorder in adolescents (Levine & Munsch, 2022). This increased risk is likely related to the numerous changes associated with this period of development (Grant, 2013). The COVID-19 pandemic created great lifestyle changes that could increase anxiety levels in adolescents (Chen et al., 2020). Turna et al., (2021) found an increase in significant stress during the pandemic in younger age groups, which could indicate adverse effects of the pandemic on adolescents.

Methods

This mixed methods study utilized an explanatory sequential design, in which qualitative and quantitative data were connected through sequential analysis (Creswell, 2022). In this case, quantitative data was collected first and was followed by collection of qualitative data. Mixed methods research is defined as “the type of research in which a researcher... combines elements of qualitative and quantitative research approaches... for the broad purposes of breadth and depth of understanding and corroboration” (Johnson et al., 2007, p. 14). A mixed method design was chosen for the current study because it allowed for a more thorough observation of the phenomena than could be obtained with either a strictly quantitative or qualitative approach. Additionally, the use of both quantitative and qualitative data collection methods compensated for the shortcomings of either approach when used independently (Creswell, 2022). Quantitative data was collected through an online survey (Microsoft Forms), and qualitative data was collected through an optional follow-up Zoom interview. Data collection was completed in the fall semester of 2023, following approval from the East Central University Institutional Review Board in September of that year.

Participants

Participants in this study included 26 rural public school teachers throughout the state of Oklahoma. Responses were collected from teachers with five or more years of experience teaching grades 5th through 12th. The quantitative portion of data collection included 26 survey responses, and the qualitative portion included 4 semi-structured interviews that survey participants volunteered for. Survey participants represented all categories for years of teaching experience (i.e. 5-10, 10-15, 15-20, and more than 20), all grade levels (i.e. 5-12), and most school classifications (i.e. A-5A, B and 6A were not represented). Middle and high school grade levels were almost equally represented (i.e. 11 respondents taught middle school grade levels, 10 respondents taught high school grade levels, and 5 respondents taught both). Additionally, 73% of respondents considered their school rural, and 65% of respondents were women. In the Why Rural Matters Report published by the National Rural Education Association in 2023, it was observed that more than half of the public schools in Oklahoma serve rural communities (Showalter et al., 2023). The data is rural leaning and representative of the state of Oklahoma, which is a largely rural state.

Survey participants were given the opportunity to take part in the qualitative portion of data, which consisted of a Zoom interview. Although there were far fewer participants in the qualitative portion than the quantitative, demographically the sample was still somewhat representative, barring gender. Of the four participants, two had 20 or more years of teaching experience, one had 15 to 20 years of experience, and one had 10-15 years of experience. Three of the four participants taught middle school grade levels, and three participants taught in what they considered to be a rural school. One participant taught special education, and two interviewees took on additional roles within their school following the COVID-19 pandemic in 2020. One of these interviewees began teaching special education courses in addition to her previous responsibilities, and another began working as a school counselor. The interviewee who began work as a school counselor noted that she was unsure if the student behavior she noticed was due to her new role, as she interacted with many more students working as a counselor than she did in her classroom as a teacher. She also mentioned that her new role as the school counselor required her to be more observant of all students in her school, not just those in her classroom.

Materials

Participants in this study were recruited via email to 105 principals in Oklahoma, who were asked to distribute an invitation and an informed consent form to teachers of grades 5 through 12 within their school district. The initial email was sent in late August and a reminder was sent in early September. Since the email was sent to district principals, it is not possible to report the number of teachers who received the invitation. Informed consent was deemed necessary due to questions pertaining to observations of student behavior, as well as risk posed by the interviews in the second part of data collection. A link to the study's survey was included at the bottom of the informed consent form, and it was specified in the email that informed consent would be assumed if participants opened the survey link. The quantitative survey was created using Microsoft Forms and comprised of 26 questions including five demographic questions, seven Likert-scale questions, two yes or no questions, eight open-ended questions, three rating questions, and an offer to participate in the second part of data collection (see Appendix A). Examples of questions contained in the survey include, "On a daily basis, outside of cooperative schoolwork, how often

did the majority of students interact with each other socially in your classroom, before the COVID-19 pandemic?” “On a daily basis, outside of cooperative schoolwork, how often do the majority of students interact with each other socially in your classroom now?” and “What changes have you observed in social interactions between students at school since COVID-19 pandemic?” The survey was conducted using Microsoft Forms because of its “insights” feature and its ability to export data automatically into an Excel spreadsheet. Both features aided in the data analysis process.

Seven survey participants volunteered to take part in the second part of data collection: a qualitative, semi-structured interview (see Appendix B). Volunteers were contacted via email to arrange a time to be interviewed, and four of those volunteers were interviewed. Interview participants were made aware of the possible risk associated with the interview process through the informed consent form accessed before completing the survey in the first part of the data collection process. Interviews took place online over Zoom, and all four exceeded the timeframe of 15-20 minutes that was initially expected, resulting in an average completion time of 35 minutes. Nine questions were drafted prior to the start of the interview process, and unique clarifying questions were asked by the principal investigator and faculty supervisor in each interview, which could account for the prolonged interview times. Examples of the initial interview questions include, “What were the most common disruptive behaviors that occurred prior to the COVID-19 pandemic – and how often did these occur (hourly, daily, weekly)? What are the most common disruptive behaviors that occur now – and how often did these occur (hourly, daily, weekly)?” and “What does student anxiety look like to you? How often do students display this behavior in the classroom? Has this changed since the COVID-19 pandemic?” Interview responses were transcribed using Zoom, and the study author compared the transcriptions to the audio recordings of interviews to ensure information was transcribed correctly.

Data Analysis Procedures

Due to the sequential nature of data collection, analysis was completed in two phases. First, analysis of the quantitative data was conducted and used to find additional questions for the qualitative interviews conducted in the second phase of data collection. Due to the low sample size in the quantitative portion of data ($n = 26$), analysis centered around qualitative results, though a two-tailed t-test was conducted on reported quantitative results. The low response rate could be attributed to the timeframe in which data collection took place. Qualitative results were analyzed through the identification of common themes throughout responses. To establish reliability, the study author and study mentor analyzed qualitative results first separately, then met to discuss findings, identified discrepancies in each analysis, and came to an agreement regarding these differences to establish interrater reliability within analysis. Additionally, quantitative and qualitative data were compared after analysis of each data set to further support reliability. Findings identified through analysis were compared with research from existing literature for additional support. Additionally, only findings from the qualitative portion of data collection were reported.

Data Results and Analysis

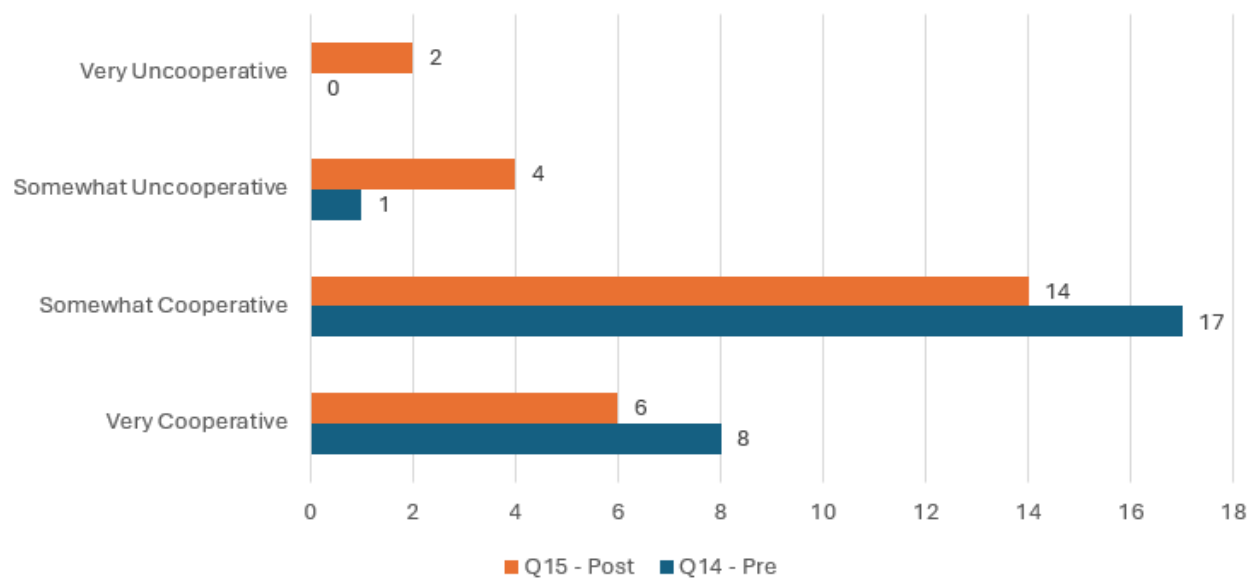
Both quantitative and qualitative results were gathered and analyzed. The mixed methods design of this study allowed for a thorough examination of results, which are presented below. The items in the quantitative survey (Appendix A) focused on collecting general information regarding

student social interactions before and after the COVID-19 pandemic. The qualitative survey items (Appendix B) aimed to gather more specific information about this topic. Given the small number of survey respondents (n=26) no statistical analysis of the survey results are reported due to a lack of statistical power; qualitative results are reported and presented by common themes, with survey themes included to support conclusions. Only qualitative results were reported and are presented by common themes. Due to the number of survey and interview items, as well as the number of participant responses, only relevant data was analyzed.

Quantitative Results

Survey question 14 asked “How cooperative with peers were students in your classroom before the COVID-19 pandemic?” and survey question 15 asked “How cooperative with peers are students in your classroom now?” (see Table 1 below). Responses indicate that although most students fell into the “Somewhat Cooperative” category before and after the pandemic, more students after the pandemic fell into the “Somewhat Uncooperative” and “Very Uncooperative” categories. Although a small number of participants indicated that some of their students have become “Somewhat Uncooperative” and “Very Uncooperative” since returning to the classroom, even a small trend towards uncooperativeness greatly impacts classroom environments. One uncooperative student can disrupt an entire classroom and hinder other students’ learning experiences, which demonstrates the importance of the trend reflected in participants’ responses to this question.

Table 1 Student Cooperativeness Ratings Pre-Pandemic and Post-Pandemic



Survey question 16 was open-ended and asked survey respondent to, “Please describe what cooperative behavior looks like in your classroom,” to gain a better understanding of their responses to the previous Likert-type questions. Most respondents described cooperative behavior in one of two ways: willingness to work with others and to help classmates (n = 18) or general attentiveness, engagement, and respect for others in the classroom (n = 8). One participant stated that cooperative behaviors involve, “Respecting and listening to the speaker,

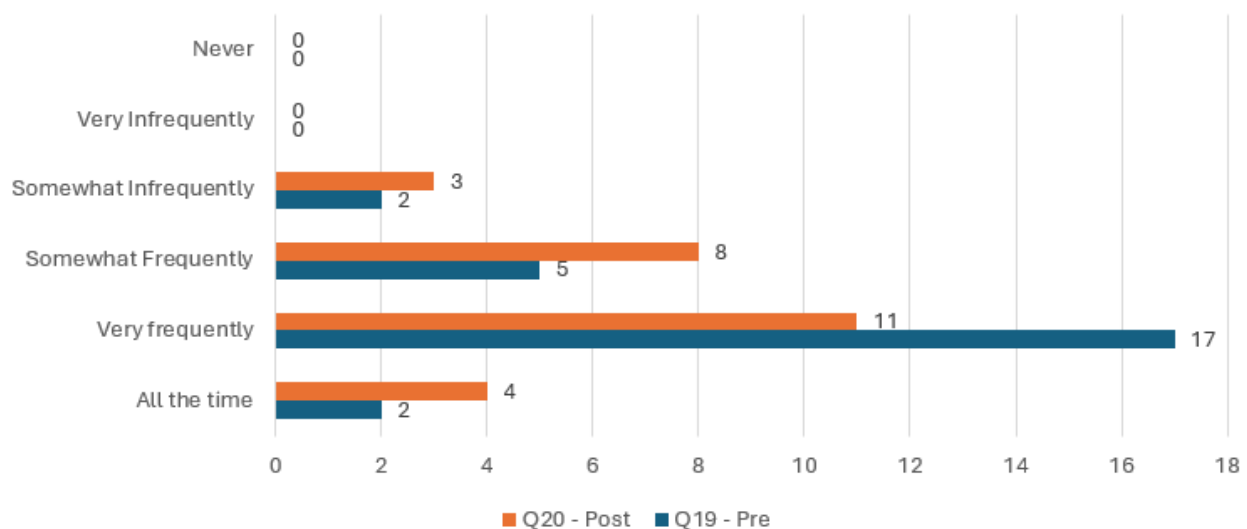
engaging in the lesson, participating in activities, answering questions, and adhering to the overarching expectations of respecting others, property, and learning.” This response was representative of most other responses as well. While most respondents outlined a general definition of cooperative behavior, several described experiences with cooperative behavior specifically in relation to the COVID-19 pandemic. Of these five responses, three noted positive observations and two noted negative observations. The positive comments mentioned minimal issues getting students to work with each other, though one mentioned that more students preferred to work alone since returning to school in person. The negative comments described difficulties when having students work together. One respondent remarked,

Students have [lost] sight of how to work with others or even the purpose of collaborative activities. I wanted to implement collaborative activities into my classroom. The result was frustration and unproductive. The students would not work together. They would merely take turns solving a given problem instead.

The other mentioned more general issues with their students and stated that they “seem less patient and caring with one another.”

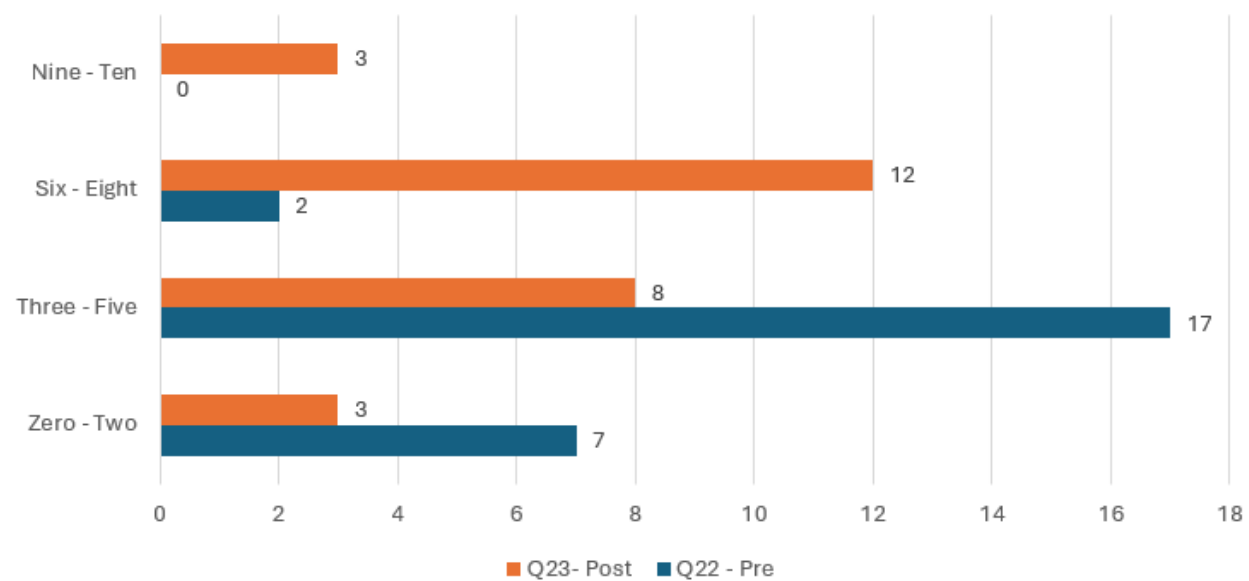
Survey question 19 asked, “On a daily basis, outside of cooperative schoolwork, how often did the majority of students interact with each other socially in your classroom, before the COVID-19 pandemic?” and survey question 20 asked “On a daily basis, outside of cooperative school work, how often do the majority of students interact with each other socially in your classroom now?” (see Table 2 below). Although most students remained in the “Very Frequently” category of responses, there was more variability among responses to question 20, which asked about student interactions after the onset of the pandemic. It seems that students have become more polarized in their interactions with each other. They either came back and interacted socially with their peers more often than before the pandemic, or they isolated themselves from their peers more than before the pandemic.

Table 2 Frequency of Student Interactions Outside of Cooperative Schoolwork Ratings Pre-Pandemic and Post-Pandemic



Question 22 asked survey participants to “Rate general student anxiety level in your classroom before the COVID-19 pandemic (0 being no anxiety).” Question 23 followed up by asking, “Rate general student anxiety level in your classroom now (0 being no anxiety).” Responses indicate that student anxiety levels have risen since returning to the classroom. Responses to question 13 demonstrate a drastic change in student anxiety levels following the return to the classroom. This shift towards higher levels of anxiety in the classroom is consistent with other findings regarding anxiety after the onset of the COVID-19 pandemic (Chen et al., 2020; Panchal et al., 2023; Turna et al., 2021; Wang et al., 2022) and could account for the observed increase in student aggression both verbally and physically. These results are consistent with previous findings by Chung et al (2019), which found a clear association between increased anxiety and aggression.

Table 3 Student Anxiety Ratings Pre-Pandemic and Post-Pandemic



Qualitative Results

Seven of the 26 survey respondents volunteered to participate in a follow-up interview. Volunteers were contacted via email or phone call to arrange a time for the interview. Of those seven, four responded and were interviewed. Interviews were initially expected to last approximately 15-20 minutes, however each of the four interviews continued well over that time. The average interview spanned approximately 35 minutes. See Table 4 for a breakdown of each interview’s duration, as well as demographic information about each interview participant.

Table 4 Participant Information

N = 4	Participant 1	Participant 2	Participant 3	Participant 4
Interview length (minutes)	41.46	25.49	40.07	35.11
Teaching experience (years)	15-20	>20	>20	10-15
Grade level	8-12	9-12	6-8	11

The interviews consisted of nine initial questions (see Appendix B) approved by the Institutional Review Board at East Central University, though the semi-structured nature of the interview allowed for follow-up questions to further clarify responses given by participants. The interviews

took a phenomenological approach (Creswell, 2021) and served to gather more detailed accounts of teachers' observations of adolescent student social behavior patterns. Five themes were identified during analysis:

- Adolescent social interaction is more reliant on digital media and personal electronics now than before the pandemic.
- Parents played a role in the negative adolescent student outcomes observed by interview participants in the classroom.
- Adolescent student dependence on teachers and other adults has increased.
- Adolescent development is behind socially and academically.
- Adolescent anxiety and apathy levels have increased.

Only relevant interview responses were analyzed. Interview responses were broken down and reported by theme.

Theme: Adolescent Student Social Interaction

All four interview participants observed differences in student interaction following the COVID-19 pandemic. When asked about student skill sets (i.e., technologic, social, emotional, and academic) since returning to the classroom (Q1), Participant 4 mentioned that although her students seemed to be “getting back to normal” regarding social behavior after the COVID-19 lockdown, they had problems talking to each other in person. She believed the turn to personal electronics as a common form of communication was inevitable and stated, “I believe that they were on this path to not actually interacting with each other, other than through their devices before the lockdown. Because I think the socially being involved on their phones would've been there anyway.” Participant 2 shared a similar sentiment but in reference to apathy in students and stated, “I think the apathy started before the pandemic and the pandemic accelerated it.” It seems that observations of apathy and lack of social interaction began before the pandemic, but have increased since returning to the classroom. Participant 3 mentioned a difference in social interaction between her students outside of the classroom setting (Q7). She observed that students cluster up in the hallways more now than before the pandemic. In reference to her students, she said, “They used to kind of quickly go from class to class and get there and get in, and now there's more of a clustering and visiting back and forth.” She also mentioned that students are now allowed to be on their phones in the hallway during passing period (an addition since coming back from the pandemic), which she thought explained the increase in social behavior. When asked if that was an observation or a hypothesis, she replied, “We actually do see cell phones present when they're clustered up.” She explained that students show each other images and videos on their phones while visiting during their passing period, which could indicate that students interact with each other by commenting on these images and videos. Participant 2 also mentioned more grouping since returning to school. She said, “Social groups seem more important to them,” and hypothesized that this closeness stemmed from the distance they felt during the lockdown. Participant 1 observed more social interaction through phones since returning to the classroom. Responses related to social interaction seem to indicate that students prefer to interact with each other through personal electronics and digital media since returning to the classroom after the COVID-19 lockdown procedures. Additionally, students seem to have problems interacting with each other in person, especially younger students who would have been

in third or fourth grade during the lockdown procedures. Notably, students seem to interact with each other more often in groups or one-on-one, rather than in small groups of two or three. This could be due to the perceived safety that students feel in larger groups.

Theme: Parental Role in Negative Adolescent Student Outcomes

All four interview participants mentioned parental role and its impact on student behavior in the classroom. It is important to note that none of the interview questions asked about parental attitudes or actions. Therefore, it is notable that all four interview participants mentioned this topic independently from one another. Participants 1 and 3 referred to troubles they had after reaching out to parents about behavior issues or other concerns regarding their students. Participant 2 outlined the difference in parent attitudes she has experienced since returning to the classroom. She remarked that this year has been much different than last. She said that this year she received much more support and feedback from parents after reaching out than the previous year. Participant 1 mentioned parent attitudes when asked about what type of disrespectful behavior students presented in her classroom (a follow-up to Q6). She responded that parents tend to back their children when she reports their disruptive behavior to them. Furthermore, she remarked that she felt like parents became enablers to their children's defiant behavior and did not enforce rules during the pandemic lockdown. Participant 4 said something similar when asked about the most common disruptive behaviors in her classroom before and after the COVID-19 pandemic (Q8). She replied that she was not sure that parents were able to adequately enforce consequences during the lockdown, which might have contributed to the disruptive behavior she observed in her students. Participant 2 brought up parents when asked about changes in how students socialize outside of cooperative schoolwork (Q7). She responded that students often use their personal electronic devices in the hallways between classes and sometimes in her classroom as well, even though it is against school policy. She remarked, "sometimes it's their parents," referring to student's lack of respect for this rule, which parallels the parents' lack of respect exemplified by calling their children during their class time. Participant 1 echoed this sentiment when asked if disruptive behaviors after the pandemic are the same as before but to a higher degree (follow up to Q8). In addition to observing disruptive behaviors to a much higher degree since students returned to the classroom, she remarked that students are much more disrespectful and felt that this disrespectful behavior was due to lack of expectations from parents during the lockdown. Participant 1 also brought up parents earlier in the interview when asked about her thoughts as to why some students were more impacted by the lockdown than others (Q9). She replied that a lot of students wanted to give up during the lockdown, and their parents allowed them to give up. This is consistent with her other comments about parent attitudes during the lockdown.

Theme: Adolescent Student Dependence

Three of the four interview participants mentioned increased dependence in students in the classroom, and all three of those interview participants mentioned dependence in relation to academics. Participant 1 first mentioned dependence when asked how students' skill sets have changed since returning to the classroom after lockdown (Q1). She replied that students have fallen behind academically and stated it is because, "The students have become very lazy and very needy." Following this response, I asked for further clarification as to what "needy" meant in this context. Participant 1 said that her students have trouble completing papers on their own without her assistance on almost every question and noticed that students seem to be unsure of themselves. Participant 2 responded similarly when asked why she thought students were

impacted differently by the lockdowns (Q9). She said her high school students carried a lot of anxiety and dependence. Specifically, she mentioned that students do not handle doing things on their own as well as they did before the pandemic, and that they do not know how to make the right decisions on their own. Participant 3 mentioned dependence also in response to question nine. She said that some of her students had a hard time academically after returning to the classroom following the lockdown. Specifically, she remarked that she had to teach her middle school students (fourth and fifth graders during the lockdown) basic skills like how to use an index to find a page number, and how to find vocabulary words alphabetically in a glossary. When asked whether the observed dependence was on electronic devices or teachers and parents (a follow-up to Q8), Participant 2 remarked that she observed more dependence on adults and classmates than on electronic devices. She stated that she felt electronics became a habit during lockdown but did not contribute to the dependence observed in students, a sentiment which Participant 1 endorsed in response to question 4.

Theme: Adolescent Student Development

All four interview participants said that student development is not where they believe it should be. Three of the four participants mentioned that students are behind academically. When asked how student's skill sets have changed since the COVID-19 pandemic (Q1), Participant 1 replied that her students seemed to have lost a lot of information that they had been taught in the past, and they "acted like they didn't know anything" after returning to the classroom. She outlined the changes she observed in students following the COVID-19 pandemic as such:

When Covid started, it seemed like everyone kind of panicked at first, the students. By the time the students got back to school, they, number one, didn't wanna do any work. Number two, they didn't know how to do any work. They didn't even wanna know how to pick up a pencil and do a paper.

She said that 2019 was a good year academically for her students, but she had observed significant changes academically in the following years. She stated, "I had to reteach them how to use a calculator, even... I've never seen anything like this in my life. And this is my 20th year of teaching." Later in her interview, when asked specifically about the changes in academic performance she observed (a follow-up to Q8), she said that students' ACT scores had dropped tremendously, so much so that teachers in her school began scheduling days to prepare students for the test, which had not been done in the past. Participant 3 also observed a drop off in academic skills, specifically in elementary math skills. She mentioned in response to question one that her students (middle schoolers) struggled with basic multiplication facts, specifically:

When you ask them about multiplication facts, oh, I know my twos and threes, but... my six and sevens are a little rough, you know? But I've gotten some with even quote unquote, the easy numbers, like fives and things like that are difficult for them. And even things like tens a lot of students recognize, well, if a number ends with zero, I can divide by 10... and some of them not so much.

She hypothesized that this lack in basic skills exists because these students missed a critical year of school in terms of learning math skills. Participant 4 echoed this sentiment in response to question one. She remarked that her students seem to lack basic skills in math, reading, and

language. She also mentioned that her students seem to be behind socially and emotionally. She said that her younger students (fourth graders) whom she had taught in previous years seemed to be more impacted than her older ones socially and display more defiant behavior towards authority. She hypothesized that these students display more defiant behavior because they were left home alone during the pandemic lockdown and experienced increased anxiety because of it. In this instance, Participant 4 seemed to link anxiety and aggression, which is consistent with existing literature (Chung et al., 2019). Participant 2 also mentioned that her students seemed to be lacking socially. She specifically said that her freshman students act more like seventh graders and her sophomore students act more like freshmen.

Theme: Adolescent Student Anxiety and Apathy

Three of the four interview participants observed increased apathy in their students since returning to the classroom. All three of the participants who mentioned apathy mentioned it in relation to noncompliant behavior. When asked about how often students displayed noncompliant behavior in the classroom before and after the COVID-19 pandemic (Q10), Participant 1 said that she had observed a significant increase in noncompliant behavior. Moreover, she said that while some of her students act out, others were apathetic about what went on in the classroom, stating, “They don’t care what you say.” She mentioned apathy also when asked about disruptive behaviors she observed since coming back from lockdown (a follow-up to Q9). In response, she said, “We’ve got these kids that don’t even wanna hear. You don’t even wanna listen. They don’t even wanna be here.” Participant 2 mentioned apathy in response to question ten as well. She described noncompliance in her classroom as refusal to complete assigned work. She observed less disruptive behavior from her students, but more noncompliance in the form of disengagement. She said, “A lot of times they’re not disrupting class, they’re just sitting there... They’ll just zone out, fall asleep, or they’re leaning over their desk hiding the phone in their lap.” She described this specific kind of noncompliance in her remark, “they’re doing anything but what you want them to do, because they don’t see any point in it.” This participant believes the apathetic behavior began before the pandemic and the lockdowns only accelerated it. Participant 4 also mentioned apathy briefly in response to question ten but discussed the levels of apathy she observed more in-depth after being asked if she had observed more apathy in students since returning to the classroom (a follow-up to Q10). She replied that many more of her students display apathy now than before the lockdown. She said, “You still have that twenty percent that are working hard and trying to get their As and Bs... but the rest of them... they’re only there because they have to be, not because they want to be.”

Discussion

The purpose of the study was to gain a better understanding of the relationship between adolescent social behavior patterns and the increased reliance on digital media created by the COVID-19 pandemic. There are two key findings in the present research. First, adolescent social behavior patterns have changed following the onset of the COVID-19 pandemic. Second, adolescents have become more reliant on personal electronics as a means of social interaction with peers now than in years prior to the pandemic.

A few findings emerged in both the quantitative and qualitative portions of data collection, including increased student anxiety and apathy levels as well as aggressive language and

behavior. Most notably, both quantitative and qualitative results supported students' reliance on personal electronics for communication.

These results are consistent with the claim that adolescents use digital media outlets as a tool for social behavior, as presented by Arnett (1995). In his paper, Arnett theorized that adolescents would come to rely more on digital media outlets as a tool for socializing as they became more commonly used throughout the country. Although the digital media referred to in this paper is outdated (magazines and television), the claims he made are consistent with the findings of this study. Adolescents communicate more through personal electronics and digital devices now than before the pandemic. These results are also consistent with research from Nagata and colleagues (2022), which found that screen time use in adolescents increased following the COVID-19 pandemic and has not returned to normal levels now that restrictions have eased. Additionally, Branje and Morris (2021) found that adolescents' academic performance suffered during the pandemic lockdowns, which is congruent with the findings of the present study.

Another common finding throughout the qualitative results that aligns with prior literature is the observed increase in dependence in the classroom after the pandemic. Learned helplessness may account for the increased anxiety, apathy, and dependence observed in this study. Learned helplessness occurs when faced with an uncontrollable trauma. Researchers have observed three basic effects of uncontrollable trauma associated with learned helplessness: passive responses, slowness in recognizing responses that impact trauma, and increased stress in response to uncontrollable trauma as opposed to controllable trauma (Seligman, 1972). Additionally, individuals experiencing uncontrollable trauma often experience behavioral deficits related to the realization that their actions do not facilitate results. Three kinds of deficits commonly appear in helpless individuals: cognitive, motivational, and emotional deficits (Kobler, 2022). The COVID-19 pandemic presented an uncontrollable trauma for many individuals throughout the world, especially adolescents. Although the spread of the disease was controllable through isolation and other safety precautions like masking, children and adolescents faced uncontrollable impacts of the pandemic associated with a deprivation of the fulfillment of social needs. In response to the COVID-19 lockdown restrictions, adolescents experienced isolation from their peers. Social isolation worsens mental illnesses, and learned helplessness is often associated with increased anxiety and depression (Seligman, 1972). In the present research, the observed dependence in students as well as the increased anxiety and apathy in the classroom could be due to learned helplessness. Participants in the qualitative interviews mentioned anxious and apathetic behavior consistent with motivational and emotional deficits. Additionally, participants observed cognitive deficits that manifested in dependence and a drop in academic performance, consistent with results found by Kobler (2022).

These results also demonstrate a connection between anxiety and aggression. Participants reported observations of increased aggression and anxiety in both the quantitative and qualitative portions of data collection. Chung et al. (2019) examined the relationship between anxiety and aggression in Korean adolescents and found a clear association. Whereas past research has found indirect aggression (hostility and anger) to be more closely related to anxiety in adolescents (Chung et al., 2019), the present results did not indicate clear observations of indirect aggression. However, indirect aggression is more difficult to detect than direct aggression (physical and verbal harm) which participants observed in the present study. Because these results lie outside of the

initial topic of study, it is possible that participants did not report observations of indirect aggressive behaviors, as data collection methods asked no direct questions about aggressive behavior during either portion.

Limitations

Further research could address certain limitations of this study. For example, the small number of participants (n=26) in the quantitative portion of data collection did not allow for significant statistical analysis or generalization from these results. Additionally, this research was retrospective rather than longitudinal in its design. Despite these limitations, results from both the quantitative and qualitative portions of data collection have enhanced the understanding of the relationship between the COVID-19 pandemic and adolescent social behavior patterns.

Conclusion

The current study addressed two research questions involving rural teachers' perspectives of the relationship between the reliance on digital media following COVID-19 lockdown procedures and adolescent social behavior patterns. Both of the following questions were answered using qualitative analysis.

1. How has the shift from face-to-face social interactions at school to virtual communication and schooling following implementation of COVID-19 safety procedures impacted the ways in which adolescents socialize with each other now that most restrictions have been lifted?
2. To what extent have adolescents become more reliant on digital media and personal electronics as a means of social behavior than in years prior to the COVID-19 pandemic?

From the current data, it can be determined that teachers have observed that adolescent social behavior patterns in rural Oklahoma have changed following the return to in-person schooling after COVID-19 lockdown procedures. Research participants in this study observed changes in their students' behavior involving their social interactions with each other. From the quantitative survey, it seems that students either interact with each other more often or less often than before the pandemic. Additionally, students seem to display irritability differently than before the pandemic. Both survey and interview respondents mentioned increased anxiety and aggression in students since returning to the classroom. Survey data also showed that teachers perceived that students are less cooperative with each other and prefer to work alone more now than before the pandemic. The qualitative data supported this notion as well, though it was described more commonly as apathy in these interviews.

Both the quantitative and qualitative data indicate that adolescents have become more reliant on digital media as a tool for social behavior since the onset of the COVID-19 pandemic. Not only are general social interactions more reliant on digital media and personal electronics, but adolescents also convey negative emotions to and about each other more through digital media now than before the pandemic, as was outlined by the quantitative data.

Further research into the social impacts of the COVID-19 pandemic on adolescents could address the impact of anxiety on adolescent social behavior and apathy in the classroom, as well as parents' role in adolescents' motivation after returning to the classroom. Another identified theme worthy of further investigation is adolescent performance, both socially and academically, and

how it has been impacted by the COVID-19 lockdown procedures. Although the focus of this study was to examine the relationship between increased dependence on digital media and how it has impacted adolescents after the pandemic, many unexpected themes emerged during data analysis that warrant further study.

The goal of this thesis is to provide insight into the social changes that came with the COVID-19 pandemic isolation period, specifically observed changes in adolescents in a rural classroom setting. Since adolescents spend over half of their waking hours in the classroom, it makes sense that their social habits have changed after the period of isolation following the onset of the COVID-19 pandemic, especially in less densely populated areas. The information gathered in this study serves to inform rural teachers and parents of adolescents' changing behavioral patterns, so that they might better understand how to communicate and connect with their students and children during this time of change.

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Appendix A: Online Survey

1. What is your gender? Man, Woman, Other _____
2. How many years have you been teaching in the classroom? Less than 5, 5-10, 10-15, 15-20, More than 20
3. What grade(s) and content area do you teach?
4. What is the size of your school district (using basketball classification)? B, A, 2A, 3A, 4A, 5A, 6A
5. Is your school considered rural? Yes, No
6. What is your comfort level when engaging with digital media (i.e. texting, video chatting, social media, online gaming, internet browsing, content streaming, etc.)? Completely comfortable, Somewhat comfortable, Somewhat uncomfortable, Completely uncomfortable
7. How accessible is the internet to your students while on campus? Very accessible, Somewhat accessible, somewhat inaccessible, Very inaccessible
8. Did internet accessibility on campus change during the COVID-19 pandemic? Yes, No
9. If yes, what changes occurred?
10. How accessible is the internet to students in your district while off campus? Accessible to all students, Accessible to most students, Accessible to some students, Accessible to no students
11. Did internet accessibility off campus change for your students during the COVID-19 pandemic? Yes, No
12. If yes, what changes occurred?
13. How did your school district manage student learning during the COVID-19 pandemic (2020-2021 and 2021-2022)?
14. How cooperative with peers were students in your classroom before the COVID-19 pandemic? Very cooperative, Somewhat cooperative, Somewhat uncooperative, Very Uncooperative
15. How cooperative with peers are students in your classroom now? Very cooperative, Somewhat cooperative, Somewhat uncooperative, Very Uncooperative
16. Please describe what cooperative behavior looks like in your classroom.
17. How did students display irritability towards each other during interactions at school before the COVID-19 pandemic?
18. How do students display irritability towards each other during interactions at school now?
19. On a daily basis, outside of cooperative school work, how often did the majority of students interact with each other socially in your classroom, before the COVID-19 pandemic? All the time, Very frequently, Somewhat frequently, Somewhat infrequently, Very infrequently, Never

20. On a daily basis, outside of cooperative schoolwork, how often do the majority of students interact with each other socially in your classroom now? All the time, Very frequently, Somewhat frequently, Somewhat infrequently, Very infrequently, Never
21. What changes have you observed in social interactions between students at school since COVID-19 pandemic?
22. Rate general student anxiety level in your classroom before the COVID-19 pandemic (0 being no anxiety). 0-2, 3-5, 6-8, 9-10
23. Rate general student anxiety level in your classroom now (0 being no anxiety). 0-2, 3-5, 6-8, 9-10
24. When students are upset, if given a choice, what do they use to calm down? Please rank the following from most to least common. Digital device, Book/e-reader, Talking to classmate, Talking to an adult, Drawing, Stimming (repetitive behavior), Other
25. If "Other" is ranked higher than another option, please specify what "Other" represents.
26. Interview request:
If you are interested in taking part in a 15-20 minute follow-up interview, please provide your contact information.
 - first and last name
 - phone number
 - email address

(If more than 15 participants volunteer for interviews, then 15 interviewees will be randomly selected from among the volunteer group.)

Thank you for your time! It is greatly appreciated!

Appendix B: Initial Interview Questions

1. At the start of the year, how are students' skill sets different today as compared to prior to the COVID-19 pandemic?
 - a. Technologically?
 - b. Socially?
 - c. Emotionally?
 - d. Academically?
 - e. How do these affect each other?
2. Does your school have a one-to-one initiative?
 - a. What rules do you have regarding students' use of personal electronics in your classroom?
 - b. Have these rules changed since the pandemic?
 - c. How well do students adhere to these rules?
3. Have student attitudes regarding cooperative schoolwork changed since the COVID-19 pandemic? If so, how?
4. What changes have you noticed in how students interact socially *outside* of cooperative schoolwork since the pandemic? (e.g., in the hall, in the lunchroom, at recess, clubs/organizations)
5. What were the most common disruptive behaviors that occurred prior to the COVID-19 pandemic – and how often did these occur (hourly, daily, weekly)?
 - a. What are the most common disruptive behaviors that occur now – and how often did these occur (hourly, daily, weekly)?

-
6. Each student is different and some have been more affected by the lockdown than their classmates, do you have any thoughts as to why?
 7. How often did students display noncompliant behavior in the classroom before the COVID-19 pandemic?
 - a. How often do they display noncompliant behavior in the classroom now?
 - b. What does noncompliant behavior look like in your classroom?
 8. What does student anxiety look like to you?
 - a. How often do students display this behavior in the classroom?
 - b. Has this changed since the COVID-19 pandemic?
 9. Is there anything else you feel I need to know about how the pandemic has affected students' socialization with each other?

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