Regular Article

Teachers' practices during COVID-19: Practices and perspectives in elementary and secondary settings

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A B S T R A C T

COVID-19 affected modes of instruction and instructional processes across K to 12 classrooms. The purpose of this study was to examine K-12 teaching practices in one large district during COVID-19 and whether there were differences in overall practices, affect, and confidence, and regarding remote teaching between elementary and secondary teachers. Further, their professional development experiences were examined and their evaluation of those. 97 PreK to grade 12 teachers completed a survey regarding their confidence and affect to teach writing and reading, and provide remote instruction. Teachers also shared specific practices they engaged in during remote instruction and when working with special education and English Language Learners, described the types of professional development they received, their evaluation of their experience, and commented on their college-preparation. Overall, teachers did not find remote instruction of writing and reading as effective, but they commented on the potential of online instruction to be continued after the pandemic if they were provided with adequate support. Further, differences were found between elementary and secondary teachers on their affect and confidence for teaching writing and reading but not for remote instruction. Finally, teachers' comments indicate the need for ongoing PD to address instructional and implementation needs. Implications for research, practice, and policy are discussed.

Examination of Teachers' Practices During COVID-19: Elementary and Secondary Practices and Perspectives.

Over the past two years, remote instruction and learning have become a necessity. When the World Health Organization (WHO, 2020) declared a global pandemic on March of 2020, cities, states, provinces, and countries went on lockdown, and the landscape of teaching and learning shifted almost instantaneously; teachers were asked to transition to online instruction when face-to-face instruction was no longer a choice. This response to a crisis, though was with challenges and revealed concerns on teachers' readiness to provide instruction online and to address the needs of all learners (e.g., Aurini & Davies, 2021; Steed & Leech, 2021). Although teachers' experiences and perceptions of the transition to an online environment varied, educators in K-12 settings had many instructional barriers to overcome such as inconsistent internet (Atiles et al., 2021; Steed & Leech, 2021), lack of technology resources for students and themselves (Atiles et al., 2021; McFayden et al., 2021), limited guidance and administrative support (Chan et al., 2021; Steed & Leech, 2021), insufficient training (Atiles et al., 2021; Gudmundsdottir & Hathoway, 2020), challenges

communicating with and meeting the needs of all students (Harris et al., 2021; McFayden et al., 2021; Steed & Leech, 2021), and reduced staffing (Phillips et al., 2021). Several studies have examined stress and its role on teachers' instruction during the transition to crises teaching. Further, some studies have examined teachers' specific practices during the pandemic for students with learning disabilities (e.g., Hebert et al., 2020) or with students in regular education (e.g., Phillips et al., 2021; Traga Philippakos et al., under review). However, limited research exists on teachers' practices and challenges as those relate to writing and reading instruction during this transition (see Leech et al., 2022) and remote teaching. Hence, in this study, the goals was to examine teachers' instructional practices in remote instruction, their level of preparation and readiness to transition to remote instruction, the professional development (PD) support they received in order to respond to teaching remotely, and record any concerns they shared about the profession and examine whether there were differences in the responses provided by elementary and middle school teachers.

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1. Online instruction

Teaching online has been reported to be challenging for reasons relevant to resources and instructional delivery. For instance, one of the challenges that teachers face is student participation, engagement, and motivation (De Paepe et al., 2018). Additional challenges address resources for instructors and for students as well as access to professional development to support instruction (e.g., Pulham & Graham, 2018). Considering that these challenges with online teaching were present before pandemic for teachers who already taught using online platforms, the transition to remote teaching of teachers who possibly were not accustomed to such instruction would be anticipated to be of a greater challenge. National surveys (e.g., Hebert et al., 2020; Traga Philippakos & Voggt, 2021) as well as qualitative studies (e.g., Bishop, 2021) during the pandemic, brought to light teachers' challenges when using technology in their remote instruction. These findings revealed that teachers were not as prepared to complete this transition and that they had not always received sufficient support with systematic professional development to deliver instruction online and even select appropriate tools for their learners (Traga Philippakos & Voggt, 2021; Traga Philippakos et al., under review). Specifically, in a study with 228 teachers in grades K to 5, the authors found that 69% of teachers did not feel confident teaching remotely while they also shared they were not as prepared from their teacher preparation programs to provide such instruction in writing or reading.

The argument for online instruction then is not only on the timing of the transition, which was under crisis, but also on teachers' readiness to provide such instruction. Challenges with readiness do not seem to be contextual and localized, though. Gudmundsdottir and Hathoway (2020) distributed an open-response survey to 1186 teachers across several Countries to understand their experiences and readiness for online instruction, specifically when working with vulnerable student populations. Out of 239 American teachers, 92% reported having no online teaching experience but many shared they were familiar with digital resources (e.g., e-books, Google classroom). Results showed differences in teachers' training during this transitional phase, leading teachers to respond differently about resources, support, and preparation. Indeed, professional development support for teachers can affect their readiness and confidence to respond to instructional crisis (Jelinska & Paradowski, 2021). Readiness addresses both their preparation from their college programs as well as professional development received from their sites and scaffolds or coaching support for problem solving on site. Teachers' prior training (e.g., pre-service courses, professional development) and pre-pandemic experiences with online instruction has the potential to influence teachers' efficacy (e.g., Dolighan & Owen, 2021; Jelinska & Paradowski, 2021). Dolighan and Owen (2021) conducted a study with 132 secondary teachers and found that previous training in online instruction was indeed associated with higher online teaching efficacy scores ($p < .05$). However, there was no significant correlation between the number of previous courses taken and higher efficacy scores, nor was there an association between the number of years of online teaching experience and higher teacher efficacy during remote online instruction.

2. Supports for different learners

Learning loss during the pandemic has been reported to be greater for students who come from disadvantaged backgrounds (Engzell et al., 2021). During the pandemic student learning was not through direct in-person instruction and teachers needed to differentiate and support learners of different academic needs. Steed and Leech (2021) when looking at the ways early childhood general and special education teachers ($n = 947$, $n = 160$ respectively) facilitated remote learning activities found that 10.1% of teachers met in small groups with children and 12.4% held individual meetings with students. Both groups of teachers relied on families for keeping the children engaged online.

Additionally, both groups reported spending more time planning and communicating with families than providing instruction to children. This was higher for special education teachers. Other research found decreased modifications and services for students with disabilities during remote instruction (McFayden et al., 2021). The survey by Hebert and colleagues (2020) with 428 teachers found that 69% of the teachers provided accomodations to LD students and 73% shared that other personnel provided instruction. Thus, despite the fact that the transition was immediate, teachers in this sample made efforts to support students with disabilities. However, 1 out of 3 teachers met daily with students in K to 5 grades and students' performance was not evaluated. Approximately 43% of English Language Learners did not receive accomodations in this work.

Skar et al. (2021) examined whether the quality of first-grade students' writing was negatively impacted by the shift to emergency remote instruction. The study compared measures of handwriting fluency, writing quality, and students' attitudes towards writing between pre-COVID-19 ($n = 1636$) and during COVID-19 ($n = 817$) student cohorts. First grade students in both cohorts varied linguistically, thus the study comprised of L1 (i.e., first language is Norwegian), L2 (i.e., different first language), and bilingual students (i.e., learned Norwegian and another language from birth). Students in the COVID-19 cohort scored significantly lower on all measures of writing compared to the pre-COVID-19 cohort. Analysis of the interaction between cohort and language indicated L2 students in the COVID-19 cohort had a greater decrease in handwriting fluency compared to L1 and bilingual students in the same cohort. A decrease in writing quality for L2 and bilingual students was also statistically significant ($p < .001$). These studies have identified the challenges for the K to 5 teachers, but no such study has examined elementary and secondary teachers' practices.

3. Current study

The current study strived to examine the challenges and practices teachers from a large district faced during the COVID-19 pandemic and whether the challenges faced by elementary and secondary teachers differed. This study builds on previous work from Traga Philippakos and Voggt (2021) and Traga Philippakos and colleagues (under review), who investigated PreK to 5 teachers' practices, professional development, and affect. This work differs from that study as it includes elementary and secondary teachers and focuses on the needs and challenges faced by one particular school district. Further, in this current study, participants were asked to share qualitative responses to better understand teachers' preparation to teach online and challenges with professional development in online practices. Finally, the current study was conducted after teachers entered a second full year of teaching in the pandemic. The research questions for this investigation were the following:

1. What are the differences between secondary and elementary teachers' confidence and affect to teach writing, reading, and remote instruction?
2. What are the teachers' instructional practices in remote instruction?
3. How did teachers address the needs of English as a second language students and special education students during remote instruction?
4. What are teachers' perceptions of their college preparation program to prepare them to teach reading and writing remotely?
5. What professional development did teachers receive for effective online instruction?
6. What are teachers' views about the future of online instruction after the pandemic and what are their concerns about the teaching profession?

4. Methods

4.1. Participants and procedures

Participants were 97 PreK to 12 classroom teachers from a large district located in the southeastern region of the United States. The district includes 93 schools (PreK to 12) serving 61,222 students (data retrieved from National Center of Educational Statistics, https://nces.ed.gov/). All participants were public school teachers and responded to the survey in May to fall of 2021. Overall, around 84% of participants were female and 91% were Caucasian. About three-fifths (58%) of participants were in secondary settings (i.e., 6 to 12 grades). Since the school district encompassed the entire county, local schools can be classified into rural, suburban, and urban sites with11% of participants in rural schools, 56% in suburban sites, and 33% in urban ones. The student population they served were 23% of low socioeconomic status (SES), 50% of medium to low SES, 26% of medium SES, and 2% of high SES.

The majority of participants had 3–9 years of teaching experience (46%), 29% had 10–20 years of experience, 16% less than three years of experience, and 9% over 20 years of teaching experience (see Table 1). 77% of teachers lived in the same area where students lived and the majority held a master's degree (59%) with 9% holding a PhD or EdD degree.

4.2. Survey items and procedures

Survey items were based on the Traga Philippakos and Voggt (2021) survey which included original items and items from previous surveys (Graham et al. (2001) on confidence to teach writing; Hebert et al. (2020) on practices for LD and ELLs; Philippakos & Moore, 2017 on PD). The current survey included 60 to 80 questions (depending on

Table 1
Teachers' experience.

	Years of Teaching Experience	Years of teaching current grade	Years of Teaching at current school
Less than 3	4%	16%	22%
3-9	29%	46%	50%
10-20	44%	29%	24%
Over 20	23%	9%	4%
Total	100%	100%	100%
	PreK-5 Years of Teaching Experience	PreK-5 Years of teaching current grade	PreK-5 Years of Teaching at current school
Less than 3	.8%	18.2%	12.7%
3-9	23.6%	43.6%	49.1%
10-20	56.4%	29.1%	30.9%
Over 20	18.2%	9.1%	7.3%
Total	100%	100%	100%
	6–12 Years of Teaching Experience	6–12 Years of teaching current grade	6–12 Years of Teaching at current school
Less than 3	5.7%	14.2%	27.4%
3-9	31.1%	47.2%	50.9%
10-20	37.7%	29.2%	18.9%
Over 20	25.5%	9.4%	2.8%
Total	100%	100%	100%

Note: Information is provided in percentages (%).

participants' selections) and its completion ranged from 20 to 25 min. Participants responded across categories of information: teacher demographics and education; teacher affect toward writing, reading, and online instruction; teacher confidence to teach writing, reading, and teaching online; online instruction practices and tools; time and preparation for online instruction; student participation; teacher evaluation of online instruction; teacher professional development to transition to online instruction; and open responses with comments on the overall experience of being a teacher.

After the approval of the study by the institutional review board, the first author contacted the district's research office with a proposal that was reviewed by the district's research office and board and was approved within 15 days. The researcher built the survey on the QuestionPro platform, and it was shared with all teachers through the districts' email list. The body of the email explained the project and included the consent letter, where teachers could select to proceed with the survey or decline participation. Those who chose to participate were asked at the end of the survey if they wanted to enter their email for a chance to win one of three gift cards. The survey remained open for 150 days and four reminders were sent to teachers after approximately 3 weeks. Based on information collected from QuestionPro, 177 teachers out of the 4000 opened the email with the survey and agreed to participate, but only 97 completed it.

4.3. Analyses

This project reports frequencies and proportions on teachers' practices. Since the participants were primary (PreK to 5) and secondary teachers (6–12), we report findings by each subgroup. Multivariate Analysis of Variance (MANOVA; Field, 2017) was also conducted to examine statistically significant differences for the two levels of teachers and when applicable follow-up analysis by grade. Open responses were included on the following questions: type of professional development teachers received to transition to online instruction, reasons they might choose to abandon the profession, and comments about the profession. Open-ended responses were analyzed by examining the presence and frequency of patterns and themes (Corbin & Strauss, 2008).

4.4. Survey sections and subsections

Affect. Affect toward writing, reading, and online instruction (four items per category with coefficient alpha at .867, .880, and 0.827 respectively) were requested in a six-point Likert scale (Traga Philippakos, 2020; Traga Philippakos & Voggt, 2021) (1: strongly disagree; 2: moderately disagree; 3: slightly disagree, 4: slightly agree; 5: moderately agree; 6: strongly agree).

Confidence. Teachers' confidence (i.e., confidence to teach writing, reading, and provide online instruction) was collected through responses on a six-point Likert scale. The Graham et al. (2001) and Philippakos and Moore (2017) survey items were modified to address confidence to teach writing and reading while additional items on confidence to provide online instruction were developed. Coefficient alphas for writing, reading, and online confidence were 0.923, 0.961, and 0.921, respectively.

Student access to online instruction. These items asked teachers to identify whether students had internet access and access to computers, iPads, or tablets.

Teacher access to online instruction. These questions asked teachers to share what type of instruction was provided (e.g., hybrid), their management system (e.g., Canvas, Blackboard), and their access to internet and needed resources (e.g., headsets).

Teachers' preparation time. Teachers were asked to share on average the time spent to prepare their online instruction and whether they received compensation for any additional time.

General instructional practices during online instruction. We asked teachers to share the frequency of practices used to support

students' learning during online instruction (e.g., meeting with students in small groups).

Reading and writing instructional practices during online instruction. We asked teachers to identify the specific practices they followed for the instruction of all students synchronously and asynchronously (e.g., direct teaching and modeling of reading strategies).

Instructional practices for students with Learning Disabilities (LD) and for English Language Learners (ELL). Teachers were asked to identify the instructional practices provided to LD and ELL learners, whether they provided accommodations, and what those were.

Student participation. We asked teachers to share whether their LD learners and ELLs participated in online learning, and what was the frequency of that participation.

Teacher evaluation of online instruction and preparation. To understand teachers' perceptions of the effectiveness of online instruction, we asked teachers to evaluate it.

Teacher Professional Development. We asked teachers to explain whether they had received PD on the tools used to transition to online instruction. Further, we asked them to share who provided the PD and their evaluation of its quality.

Longevity of online instruction. We asked teachers to share their views on online instruction and whether they felt it was only because of necessity or whether it was meant to continue as part of regular classroom instruction.

Teachers' future in the profession. We asked teachers to express their thoughts about the profession, about instruction, about online needs, and to share whether they planned to continue with the profession after this academic year.

5. Results

5.1. Research question 1: What are the differences between secondary and elementary teachers' confidence and affect to teach writing, reading, and remote instruction?

Affect. First, a MANOVA was conducted to examine differences across the three factors for all participants. Then analysis examined the presence of statistically significant differences between elementary and secondary teachers for the different affect factors (a Bonferroni correction was applied).

Overall, teachers' affect was higher for teaching reading (M = 4.78; SD = 1.28) compared to teaching writing (M = 4.26, SD = 1.20) and to online instruction (M = 3.71, SD = 1.23). A MANOVA was performed on three dependent variables (writing, reading, and online instruction) and one between-group factor (level: elementary or secondary). A statistically significant Box's test (Box's M = 30.75, F(6, 78666.55) = 5.000, p < .001) indicated unequal variance-covariance matrices of the dependent variables across the three groups; Thus, Pillai's trace was used as it is more robust to violations of model assumptions (Tabachnick & Fidell, 2007).

A statistically significant effect was found for level (elementary/secondary) (Pillai's Trace = 0.111, F(3,148) = 6.16, p < .001, partial η^2 = 0.11, observed power = .96). Follow-up univariate ANOVA tests found an effect of level on writing affect (F(1, 150) = 9.14, p = .003, partial η^2 = 0.57, observed power = .85), on reading affect (F(1, 150) = 18.68, p < .001, partial η^2 = 0.11, observed power = .99), but not on online affect (F(1,150) = 0.017, p = .89, observed power = .05). Overall, secondary teachers had lower writing and reading affect (see Table 2 for means standard deviations, and effect size estimates).

5.2. Confidence

Teachers' confidence for teaching reading (M = 4.42, SD = 1.05) was higher compared to their confidence to teaching writing (M = 4.31, SD = 0.92) and to teaching online (M = 3.92, SD = 0.98). A MANOVA was used to examine teachers' confidence by level (elementary/secondary).

Table 2
Teacher affect and confidence by level (elementary-secondary).

Categories	Elementary (n = 42) M (SD)	Secondary (n = 68) M (SD)	Standardized Mean Difference
Affect writing	4.65 (.92)	4.05 (1.29)	0.52
Affect reading	5.36 (.73)	4.47 (1.40)	0.75
Affect remote instruction	3.73 (1.30)	3.70 (1.10)	0.03
Confidence writing	4.66 (.63)	4.11 (1.04)	0.61
Confidence reading	4.87 (.64)	4.16 (1.19)	0.70
Confidence remote instruction	4.02 (.93)	3.85 (1.01)	0.17

M = Mean.
SD = Standard Deviation.

Pillai's trace was used (Tabachnick & Fidell, 2007) (Box's M = 21.28, F (6, 50113.002) = 3.431, p = .002). A statistically significant effect was found for level (elementary/secondary) (Pillai's Trace = 0.109, F(3, 106) = 4.34, p < .006, partial η^2 = 0.109, observed power = .85). Follow-up univariate ANOVA tests found an effect of level on confidence to teach writing (F(1, 108) = 9.30, p = .003, partial η^2 = 0.079, observed power = .85), on confidence to teach reading (F(1, 108) = 12.61, p < .001, partial η^2 = 0.10, observed power = .94), but not on confidence to teach online (F(1,108) = 0.76, p = .38, partial η^2 = 0.007, observed power = .14) (see Table 3 for means, standard deviations, and effect size estimates).

5.3. Research question 2: What are the teachers' instructional practices in remote instruction?

Teacher access to online instruction. The majority of teachers used Canvas (66%) as a Learning Management System (LMS). All teachers shared they had internet access and 90% indicated their school provided them with a computer; 10% shared that their school did not provide devices. Teachers were also asked to share what resources they needed that their school did not provide and sixteen teachers shared responses. Four teachers identified purchasing an additional monitor, four purchased speakers, two purchased a laptop, two purchased a subscription to *Seesaw*, and two purchased a tablet. One of the teachers shared that they would have wanted, "*More time to prepare for instruction. More ready-to-go, off the shelf online-ready curriculum. More compensation. Fewer students;*" Another teacher shared, "*Parents who made sure their student was active in the process,*" and one teacher wished for "*Good internet connection at home.*"

Teachers' preparation time. Three-fourths of the teachers shared that they taught from their school during online instruction, and 57% indicated they had less than 3 h daily to prepare for instruction; 35% had 4 to six hours and 12% approximately an hour a day. All respondents (100%) shared that they were not compensated for the additional time they spent in preparation of their instruction.

General instructional practices during online instruction. Regarding instructional practices and modes, nearly half (49%) of the teachers shared that they taught synchronously several times a day and 41% daily (see Table 4). Regarding asynchronous instruction, 28% shared they taught asynchronously daily, 13% several times a day, and 15% several times a month (see Table 4). The majority of teachers also shared that they recorded instruction daily for students (23%) and 28% met live with students daily. A third (33%) of teachers met live with students in small groups and another third (36%) offered remote experiences to students that were accessed independently. Around four in ten (41%) teachers did not develop packages for students to pick up and use at home while a quarter (26%) did so several times a year, 15% monthly or several times a month, 13% weekly or several times a week, and 5% daily.

Reading and writing instructional practices during online

Table 3
Teacher affect and confidence by grade.

	Affect Write	Affect Reading	Affect Remote Instruction	Confidence Writing	Confidence Reading	Confidence Remote Instruction
PreK	5.06 (0.94)	5.12 (1.18)	3.13 (1.83)	4.90 (0.98)	4.76 (1.20)	5.23 (1.09)
K	4.79 (0.37)	5.54 (0.39)	3.18 (1.61)	4.50 (0.60)	4.72 (0.91)	3.05 (1.04)
Grade 1	4.66 (1.06)	5.36 (0.79)	3.98 (1.68)	4.81(0.62)	5.01 (0.55)	4.13 (1.04)
Grade 2	4.69 (1.10)	5.69 (0.32)	3.72 (1.28)	4.83 (0.57)	5.17 (0.33)	4.39 (1.13)
Grade 3	4.64 (0.85)	5.40 (0.52)	3.65 (0.99)	4.52 (0.60)	4.61 (0.62)	3.69 (0.38)
Grade 4	4.21 (1.25)	4.75 (1.27)	4.58 (0.99)	4.42 (0.67)	4.82 (0.72)	4.41(0.63)
Grade 5	4.28 (1.59)	4.92 (1.61)	3.36 (1.29)	4.80 (0.61)	4.90 (0.88)	3.96 (0.77)
Grade 6	3.96 (1.13)	4.32 (1.67)	3.38 (1.46)	3.86 (1.27)	3.70 (1.41)	3.71 (0.96)
Grade 7	4.89 (1.57)	5.29 (1.39)	4.04 (0.89)	4.32 (1.09)	4.60 (1.20)	3.39 (2.05)
Grade 8	3.84 (0.89)	4.84 (0.60)	3.56 (0.46)	4.30 (0.84)	4.53 (0.66)	4.21 (0.82)
Grade 9	3.65 (0.38)	4.03 (1.32)	4.35 (1.03)	4.08 (0.62)	4.00 (0.90)	3.94 (0.65)
Grade 10	4.14 (1.38)	4.41 (1.31)	3.85 (1.28)	4.28 (0.94)	4.32 (1.16)	3.80 (1.16)
Grade 11	3.74 (1.54)	3.91 (1.57)	3.42 (1.10)	3.62 (1.27)	3.60 (1.28)	3.87 (1.04)
Grade 12	4.28 (1.23)	4.95 (1.11)	3.95 (0.90)	3.98 (1.21)	4.20 (1.47)	3.99 (0.93)
Total	4.26 (1.21)	4.79 (1.28)	3.72 (1.23)	4.32 (0.93)	4.43 (1.06)	3.92(0.98)

M = Mean.
SD = Standard Deviation.

Table 4
Instructional practices.

	never	several times a year	monthly	several times a month	weekly	several times a week	daily	several times a day	M (SD)
Teaching Synchronously	3%	0%	3%	0%	0%	5%	41%	49%	7.18 (1.37)
Teaching Asynchronously	5%	13%	13%	15%	8%	5%	28%	13%	5.00 (2.26)
Recording your instruction and making it available to students	10%	18%	5%	8%	5%	18%	23%	13%	4.90 (2.44)
Meeting with students one-on-one live	13%	13%	3%	10%	10%	13%	28%	10%	4.50 (2.40)
Meeting with students in small groups live	13%	3%	15%	13%	3%	3%	33%	18%	5.21 (2.47)
Providing remote learning experiences that students accessed independently	10%	5%	5%	5%	10%	10%	36%	18%	5.64 (2.29)
Providing packages for families to pick up and use at home	41%	26%	10%	5%	8%	5%	5%	0%	2.49 (1.83)
Meeting with students to discuss assignments completed online	15%	8%	3%	5%	21%	18%	21%	10%	4.95 (2.32)
Direct teaching and modeling of reading strategies	28%	4%	2%	1%	6%	14%	30%	16%	4.91 (2.78)
Having students collaboratively complete assignments in reading	39%	8%	8%	6%	13%	10%	13%	5%	3.50 (2.47)
Having students work independently on reading	23%	5%	7%	2%	15%	12%	25%	12%	4.74 (2.57)
Having students read in shared reading formats	40%	5%	5%	5%	9%	12%	17%	8%	3.82 (2.69)
Reading aloud to students	21%	4%	4%	5%	13%	9%	30%	15%	5.03 (2.58)
Teaching vocabulary words such as those related to read alouds	18%	5%	6%	5%	17%	14%	23%	12%	4.90 (2.42)
Asking students to read to each other	44%	5%	8%	6%	10%	10%	12%	7%	3.43 (2.56)
Asking students to record their reading to send to you	61%	8%	4%	4%	11%	6%	7%	0%	2.40 (2.07)
Asking students to monitor their reading	76%	2%	5%	3%	10%	1%	4%	0%	1.87 (1.71)
Meeting with students to model instruction on writing	28%	12%	6%	9%	11%	12%	17%	6%	3.96 (2.49)
Direct teaching and modeling of writing strategies	23%	11%	6%	10%	11%	11%	23%	6%	4.28 (2.48)
Having students collaboratively complete assignments in writing	48%	10%	10%	7%	11%	9%	6%	1%	2.78 (2.11)
Having students work independently on writing	24%	3%	7%	8%	14%	17%	24%	4%	4.50 (2.41)
Asking students to monitor their writing performance and graph it	79%	4%	5%	3%	3%	3%	4%	0%	1.72 (1.61)
Asking students to set writing goals	55%	16%	9%	3%	12%	3%	3%	0%	2.20 (1.73)

instruction. Overall, 30% of teachers taught and modeled reading strategies daily, 16% did so several times a day and 28% never engaged in those tasks. Regarding collaborations, 39% of teachers never asked students to complete assignments collaboratively in reading while 13% asked students daily and 13% weekly, respectively. A quarter (25%) of responders indicated students independently worked on reading and 22% never asked students to work independently. Around a third of teachers (30%) read aloud to students, 15% did so several times a day, 13% read aloud weekly, and 5% several times a month. Instruction on vocabulary words related to read alouds was also done daily by 23% of teachers, 31% did so weekly or several times a week, 12% several times a day, 11% monthly or several times a month, 5% several times a year, and 18% never provided instruction on vocabulary words encountered in read alouds. Engaging in partner reading was not common with 44% of teachers never engaging in this practice, 12% doing so daily, 10% weekly, 10% several times a week, 7% several times a day.

Regarding writing performance, 28% never met with students to model instruction on writing, but 17% did so daily; 23% daily provided direct teaching and modeling of writing strategies, 6% did so several times a week, 11% several times a year, and 6% monthly. Most teachers asked students to work independently daily and 24% did not ask them to do so. 79% of teachers never asked students to monitor their writing performance and graph it and 55% never asked students to set writing goals (See Table 4). When asked about grading practices, 59% of teachers shared that they did grade remote assignments, 3% that they did not grade assignments, 5% that they graded with a pass/fail system, and 33% that they graded some of those assignments.

5.4. Research question 3: How did teachers address the needs of English as a second language students and special education students during remote instruction?

Instructional practices for students with Learning Disabilities and for English Language Learners. Regarding the provision of accommodations for students with disabilities, 40% offered accommodations several times a day, 37% of teachers did so daily 17% several times a week or weekly, 3% several times a month, and 2% several times a year (See Table 5). Over half (52%) of teachers shared that other personnel within the school offered services to students with disabilities, and 36% shared that this personnel provided services daily. Regarding accommodations for students who were ELLs, 27% offered accommodations

several times a day, 35% did so daily, and 22% never offered accommodations to students who were ELLs. However, teachers reported that other personnel within the school offered services to ELLs several times a day 46%, 35% daily, and 2% never.

When asked about the participation frequency of students with disabilities, 41% of teachers shared they participated very often or always, 32% they did so occasionally, 27% that they rarely participated or never. Frequency of participation for ELL learners exhibited a different pattern of responses with 15% of teachers reporting ELL learners always participating, 36% participating very often, 27% occasionally participating, 9% rarely participating and 12% sharing that ELLs never participated. Additional analyses were conducted to examine whether differences existed on responses by level regarding students' frequency of participation. Results indicated that no differences existed among elementary (M = 3.00, SD = 1.91) and secondary teachers (M = 3.30, SD = 1.77) on the participation of students with LD (Wilk's Lambda = 0.84, F(3, 35) = 2.15, p = .11), but there were differences on the means for ELLs *with* secondary teachers reporting less frequency in ELLs students' participation (M = 2.30, SD = 2.11) compared to elementary teachers (M = 3.50, SD = 1.46).

5.5. Research question 4: What are teachers' perceptions of their college preparation program to prepare them to teach reading and writing remotely?

The majority of teachers (59%) shared that remote instruction was not effective for students' writing performance, 15% shared it was effective, and 26% were unsure. Similarly, 51% believed that remote instruction was not effective for students' reading performance, and 21% believed it was effective while 28% were uncertain. Regarding students' overall learning experience, 62% of teachers did not believe it was effective and 23% believed it was effective with 15% being uncertain.

A MANOVA was conducted to examine whether differences existed among responders on their perception of students' performance, but no statistically significant difference was found (Wilk's Lambda = 0.95, F(3, 35) = 0.58, p = .63) and no differences on writing among elementary teachers (M = 2.17, SD = 0.77) and secondary teachers (M = 2.07, SD = 0.68) or on the perceptions of elementary teachers' (M = 2.08, SD = 0.80) compared to secondary teachers (M = 2.07, SD = 0.70) on students' reading performance, or on perceptions on students' overall

Table 5
Accommodations for LDs and ELLs.

	never	several times a year	monthly	several times a month	weekly	several times a week	daily	several times a day	NA	M (SD)
You provided specific accommodations for students with disabilities	1%	2%	0%	3%	9%	8%	37%	40%	0%	6.88 (1.44)
Others within your school offered services to students with disabilities	0%	2%	1%	0%	8%	0%	36%	52%	1%	7.21 (1.23)
You or another teacher from your school (e.g., resource teacher) met with students with disabilities in smaller groups or one-to-one settings to provide individualized supports	8%	3%	1%	3%	11%	11%	26%	37.0%	11%	6.28 (2.11)
You provided instructional accommodations for English language learners during school closure	22%	4%	2%	3%	2%	3%	35%	27%	2%	5.43 (2.81)
Others within your school offered services to English language learners	2%	2%	4%	3%	5%	2%	35%	46%	1%	6.82 (1.74)
You or another teacher from your school (e.g., resource teacher) met with students with English language learners in smaller groups or one-to-one settings to provide individualized supports	4%	4%	2%	3%	7%	7%	36%	36%	8%	6.50 (1.95)

learning between elementary teachers (M = 1.75, SD = 0.62) and secondary (M = 2.00, SD = 0.62).

Teachers were asked to consider how well their college preparation program prepared them to teach writing, reading and online. Regarding writing, 30% shared they were extremely and very well prepared, 46% moderately and slightly prepared, and 20% not at all prepared. Regarding reading, 36% were extremely and very well prepared, 40% moderately and slightly prepared, and 20% not at all prepared. The majority of teachers (77%) were not at all prepared to teach remotely. Only 1% shared they were very well prepared or extremely well prepared, 6% moderately prepared, and 13% slightly prepared.

A MANOVA was conducted to examine teachers' responses on their preparation to teach writing, reading, and online by level. There was no statistically significant difference between teachers (Wilk's Lambda = 0.94, F(3, 96) = 0.13, p = .13). Results show that overall elementary teachers' responses indicate they were not well prepared to teach writing (M = 3.24, SD = 1.30), reading (M = 2.87, SD = 1.40), or in online settings (M = 4.71, SD = 0.70). Similar responses were provided for secondary teachers on writing (M = 3.27, SD = 1.60), reading (M = 3.29, 1.57), and online instruction (M = 4.70, SD = 0.78).

5.6. Research question 5: What professional development did teachers receive for effective online instruction?

The majority of teachers (79%) shared they had received PD on online teaching. When asked to share the types of PD teachers received, 14 referred to Canvas training and the completion of Canvas modules. Eight teachers also referred to the use of Microsoft teams. One teacher shared that PD was offered in the summer and that there was a 10 day delay for teachers to receive the additional preparation and training on resources; 3% of teachers considered the PD to be exceptional, 42% of teachers considered the PD to be very good, 29% average, 19% somewhat poor, and 6% very poor. A fifth (21%) of teachers explained that they did not receive PD to transition to online teaching. When asked to share the reasons, they shared that there was a pressure for time, "*It wasn't enough and we weren't given enough time to prepare for in-person, online, and hybrid classes all at once.*" Another teacher also explained, "*There was too much material delivered without necessary practice time. Written support was not provided.*"

Teachers also shared that practice was needed but also experience through their everyday practice were important and not only from PD, "*A lot of teaching online had to come from experience rather than PDs.*" One teacher expressed the challenges of the need to transition to online and how lonely that process was,

> '*We taught ourselves. School was starting and all the teachers just had to figure it out and teach each other. Our county was not prepared to teach us how to teach remotely before we had to do it. It was very frustrating. As a teacher who had a virtual class and an in person class I felt very alone. Trying to figure it out on my own.*"

When asked what additional support personnel was available to support teachers in their online instruction, 13% shared that there was nothing systematic, 5% mentioned a reading specialist, 30% mentioned the presence of a technology coordinator, and 13% a media specialist. Further, 10% mentioned weekly or monthly grade-level meetings. Teachers also shared that they independently sought out ways to support their online instruction. Specifically, 7% shared that they bought books, 28% that they signed up for webinars, 30% attended additional workshops offered by the state/district, and 19% read journal articles.

5.7. Research question 6: What are teachers' views about the future of online instruction after the pandemic and what are their concerns about the teaching profession?

Longevity of online instruction. The majority of teachers (84%) shared that online instruction would continue after COVID-19 and 91%

believed that online instruction can be effective. No statistically significant differences were detected (p = .60) between teachers of elementary (M = 1.18, SD = 0.40) and secondary (M = 1.15, SD = 0.35). Elementary teachers were concerned on the appropriateness of remote instruction and online instruction to address the needs of young learners. One explained that young learners benefitted more from face-to-face instruction as their presence in class addressed more effectively their social and emotional needs. Further, students received in class immediate feedback, which is needed for their learning. Secondary teachers identified possible benefits in remote instruction as some students seemed to benefit from it as learning during a time of crisis occurred at the comfort of their home. Secondary teachers' responses showed that teachers found that teaching online was more engaging for students. However, teachers equally expressed concerns on the effectiveness and appropriateness of remote instruction for all students, "*Online learning is a tool that can be very successful and accommodating to certain types of students, especially high school aged students.*"

Teachers' future in the profession, needs and challenges. Overall, 96% of teachers shared that they will be returning to the profession while 3% shared they had decided to abandon teaching and 1% that they decided to retire at the end of the year. No statistically significant differences were detected between the groups (p = .76). In the open responses, thirty-two teachers chose to respond and teachers' responses indicated their need for professional development that supported their pedagogical content knowledge and ability to deliver instruction utilizing technology. Their responses expressed the realization that technology is part of the current schooling and professional life and that COVID-19 further pointed out the need for good quality online instruction. Thus, teachers identified the potential of online learning to address students' needs and expressed interest in better learning such methodologies and approaches. One of the participants in elementary grades explained.

> Teaching online CAN be effective; however, it takes a great deal of expectation management, significant prep work on the part of the teacher, and novel ways to ensure student engagement and learning.

Teachers commented also on their level of comfort teaching remotely and overall with online instruction with three expressing that working online was relevant to their previous experiences and training, but one of them expressed the challenge that online instruction caused. Overall, teachers' comments reflected the understanding that systematic efforts should be made to help them deliver as effectively their instruction online as they did in the class,

> So much of what I do well works because I do it in the face-to-face classroom. I am unsure how to best adapt some of what I do to online instruction and honestly hope that I don't ever have to learn how to be a good online teacher because my heart is in the classroom and not behind a device.

Teachers also expressed challenges with the ways the profession is viewed and their work is criticized (n = 4), *Please feel free to "walk a mile in our shoes". It is very in vogue to criticize teachers, but not many are willing to step in to a classroom and teach.*

Teachers also expressed challenges with resources and overall support (n = 5) by their administration. One of them shared,

> My district and superintendent talked a lot about teachers practicing "self-care." Nothing practical was ever done. There are no resources for us.

6. Discussion

The purpose of this study was to examine teachers' perspectives during the instructional norms imposed by the pandemic and better understand challenges they faced in their transition to online instruction in an effort to better understand how to support teachers and potentially

how to support the profession and its preparation with online instruction. In this work differences in responses by elementary and secondary teachers were examined because of inherent differences because of the setting, organizational structure, and operation of elementary and secondary settings.

Regarding teachers' readiness, affect, and self-efficacy to provide remote instruction and also support students' reading and writing, the responses of this group of elementary and secondary learners reflected previous findings (Traga Philippakos & Voggt, 2021; Traga Philippakos et al., under review) as teachers' affect to remote instruction was least of all, but they also did not have as high affect for writing with secondary teachers having the lowest affect.

Similar were the findings for self-efficacy and teachers independently of level had low confidence to provide remote instruction as they were not as prepared by their teacher-preparation programs to provide such instruction. The majority of the teachers had received PD to prepare for the year's remote and online instruction; however, teachers identified the need for such instruction to have longevity and allow for feedback by experts during live implementation. Teachers did not see a future in remote learning without reasonable efforts to increase student and teacher supports. Finally, they identified inequities in resources students had to be effective as learners, and they also expressed concerns about the profession.

As with the previous surveys, teachers spent additional time to prepare their instruction, and none of them was compensated. Teachers met with students daily and strived to support all students' needs, which is a findings from the Hebert et al. (2020) and Traga Philippakos et al. (under review). However, even though special education students' needs seemed to have been covered, instruction to address the needs of Second Language Learners may not have been as consistent.

6.1. Implications for practice

Online instruction and overall remote learning can vary in quality as teachers may also have varied experiences. Jelinska and Paradowski (2021) conducted an international study that looked at 1500 teachers' perceived engagement in remote instruction and ability to cope with challenges. Data showed two distinguishable groups of teachers: those with a higher level of engagement who were also coping with the challenges (57%) and those who scored lower on both (43%). Most of the teachers who reported higher levels of online engagement and perceived ability to cope with the challenges worked in high school (35%) or higher education (32%) settings. Findings show prior experience with online instruction played a role in teachers' perceived engagement level and ability to cope during this transition. Additionally, educators in higher education and/or who taught using synchronous structures were more likely to feel engaged and cope with changes. Findings from this study indicate that educators were faced with several challenges and those challenges related to their preparation to effectively respond to emergency online instruction even after the emergency entered a new normal. Teachers' concerns about the emotional well-being of students and the digital divide cast a negative light on virtual instruction.

However, the findings reflect previous findings on the importance of incorporating technology in classroom settings and in teacher preparation programs that will support the instruction of content and scaffold students' pathway to mastery. Essential in this process is to consider frameworks and models that will allow teachers to incorporate the technology in their professional careers. For instance, in the technological pedagogical content knowledge (TPACK) model of instruction (Koehler & Mishra, 2005), technology and content are not taught separately but truly intertwine; thus, pedagogical content knowledge is not integrated in technological applications but rather they are combined to promote learning (e.g., Lee & Kim, 2014). Prior to the pandemic, comparisons between traditional brick and mortar schools and virtual schools indicated that student achievement was stronger

when students attended in-person (Carpenter et al., 2015; Harris-Packer & Ségol, 2015). However, pointing out that virtual schools tend to improve over time, Harris-Packer and Ségol (2015) reported that virtual programs in Florida and Michigan stood out as outliers with achievement scores similar to their state averages. A consistent factor in effective online instruction is strong structure and flexibility (Lauret & Bayram-Jacobs, 2021). Future research could potentially examine the effects of online instruction on the learning needs of students and practices that would be best for students of varied academic needs.

Adequate professional development and the importance of administrative support are also common themes in effective online instruction and were two common themes participants in our study mentioned needed to help be successful in a virtual environment. Lauret and Bayram-Jacobs (2021) identified a lack of guidance from the school board and administration as a source of teacher frustration during virtual learning. Teachers' comfort in the use of technology increased their confidence and effectiveness (Kohnke & Zou, 2021), while lack of training resulted in negative perceptions of the effectiveness of online instruction (e.g., Tan et al., 2021). Teachers in this study indicated a great need for professional development particularly for online instruction. Future research could potentially examine professional development models for writing and reading as well as professional development practices to support teachers' instruction using technological tools in a manner that can sustain and increase their efficacy and their ability to efficiently transition to online teaching. In addition, future studies could examine the effects of on-going PD support that addresses teachers' specific needs PD that is available and addresses in general practices for online learning.

One common theme in educational literature is the importance of the teacher. Effective online courses have been characterized by increased instructor presence and feedback on assignments, discussions, and assessments (Itow, 2020). A teacher's ability to build and facilitate a sense of community among virtual students led to higher rates of engagement, satisfaction, and achievement in online courses (Itow, 2020; Tan et al., 2021). The findings from this work show challenges teachers faced, but also point out the need for professional development that would support them in utilizing technology in ways that could support them in making such connections. Considering that the pandemic has not finished and teachers continue to provide instruction in face-to-face contexts and in virtual environments, it is essential to reexamine their perceptions about their instructional practices and ongoing PD that potentially they receive. In addition, it is important to solicit information about their perceptions about their future in the profession and the future of the profession considering the shortages of teachers. In the same token it is essential to reexamine what supports they have received and what supports they need from their administrator, their district, and policy in order to teach effectively.

6.2. Implications for policy

In their responses, teachers consistently explained that online instruction would not be as effective without support and systematic professional development. Responses also consistently revealed that teachers were not as prepared to teach online, and this was mostly evident on the responses of the elementary teachers, even though there was no statistically significant difference between the groups. There is a need for teacher preparation programs to prepare teachers who not only have strong knowledge of pedagogy and of content, but who are also aware on the implementation and fluent utilization of technological tools to effectively deliver instruction and support the needs of learners. It is argued that instruction online led to crisis responses regarding the application of technology, but there is a need to make a norm the provision of instruction that aligns with the guidelines of TPACK theory so teachers are not teaching tools but content.

Further, drawing from Whittle et al. (2020), in order to avoid such responses to crisis that add to teachers' stress and challenge them, it may

be prudent to consider such emergency responses that could guide future transition to online instruction. Whittle et al., suggest the emergency remote teaching environments (ERTE) framework that would allow for immediate, effective, and efficient responses.

6.3. Limitations and research implications

A major limitation of this study relates to the generalizability of findings and representativeness of the sample. A survey was employed and those who completed it might have been more motivated compared to participants who did not open the link to the survey or compared to those who chose not to proceed after reading the consent letter. The number of participants is limited and results are informative, yet not representative. Since not all members of the district completed the survey, results do not represent the beliefs and practices of all members of the K to 12 setting. An additional limitation is that we were not able to triangulate teachers' responses with observations of their instruction or teacher and student interviews. Despite these limitations, the findings of this study indicate the need and importance of effective supports for technological applications in classrooms.

6.4. Concluding thoughts

Gaps in achievement and resources existed before the pandemic, thus simply returning to pre-pandemic instructional practices and pedagogies is a path that will only lead us to the same result. Disparities in student achievement will continue if preventative and sustainable measures are not taken (Darling-Hammond & Hyler, 2020). Thus, equity concerns and realities, in addition to teachers' perceptions of the effectiveness of online instruction and their own competencies for supporting student learning in virtual formats, are important factors for policymakers and stakeholders to take into consideration as they determine future directions in education and ways to support teachers in the profession.

CRediT authorship contribution statement

Zoi A. Traga Philippakos: Conceptualization, Data curation, Formal analysis, Methodology, Project administration, Resources, Supervision, Validation, Writing – original draft, Writing – review & editing. **Louis Rocconi:** Data curation, Formal analysis, Methodology, Co-Writing – original draft. **Katherine Blake:** Co-Writing a section of the introduction and discussion -review & editing. **Jessica Summers:** Co-writing a small section of the introduction.

Declaration of competing interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

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