Understanding the Professional Learning and Support Needs of Educators during the Initial Weeks of Pandemic School Closures through Search Terms and Content Use

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Beginning in February and March of 2020, school closures impacted at least 90% of the world's population of students, according to UNESCO estimates. As educators swiftly shifted to teaching online, they sought information to guide their initial planning and teaching in new environments with new tools. Analysis of educators' search terms and their use of support content during this period indicates the needs felt by educators globally and informs content and professional development support for preservice educators. The authors compared the volume of searches, frequency of search terms, and patterns of content use during this period to the previous year by educators using an education support website. Results show that site use multiplied six times in volume, use of video increased by 30 times, and among the search terms and content topics used during and prior to this period, focus narrowed to digital and distance learning. Implications of these findings are that professional development providers can meet educators' needs with video and a focus on the specific teaching practices that educators are learning as they transition to distance teaching at an entry level.

UNESCO began reporting on closures of primary, secondary, and tertiary schools and universities during the first days of March 2020 and reported in mid-April that at least 91% of the world's students are out of school (UNESCO, 2020). At most, an estimated 2% of students participate in online courses or programs, and very few states and other jurisdictions require educators to have training or experience with online teaching (Rice & Skelcher, 2018), indicating that most educators suddenly teaching online did not have advance preparation for their new context. In emergency response, when schools closed, educators began teaching online using new digital tools and learning spaces with minimal or no professional development offered in this transition specific to online teaching. To understand educators' immediate needs for knowledge and professional learning, the authors analyzed the patterns of their searches and content use at an education support site of a large global technology company during the first three months of 2020.

The educator support website, support.office.com/education, provides articles, videos, and other professional learning resources in over 30 languages developed to enable educators around the world to use their technology with students to achieve learning goals. Analysis of searches and content use offered insights into educator needs during the initial weeks in which they began teaching online and illuminated trends in their needs with implications for preservice education.

DATA SOURCE AND ANALYSIS

To understand the extent of educators' needs for support content, we looked at the total volume of use of the education support site. Prior to March 2020, use of the education support site grew steadily each month from around 200,000 views of content per month in January 2018 to around 600,000 in February 2020. Content views in March 2020 were over 4 million, indicating the urgency felt by educators to learn about and succeed in teaching online. Figure 1 shows this trend.
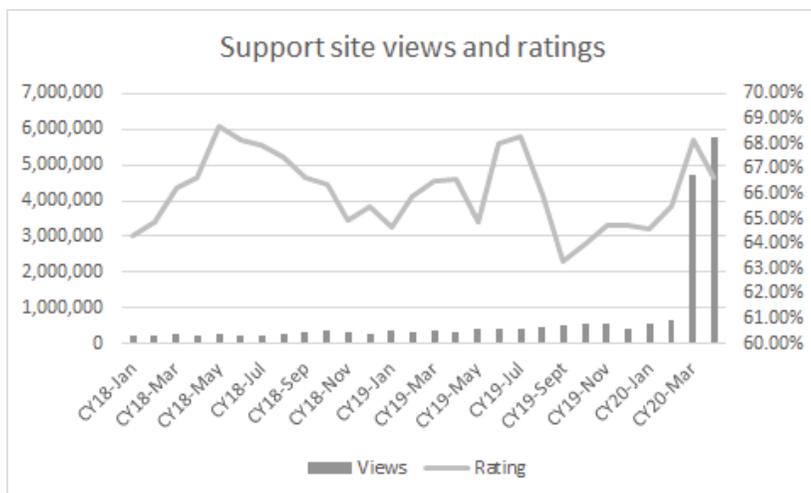
Figure 1. Content views and satisfaction reported.

To understand the content format preferences of educators, we compared changes in total site use and the use of video on the site between February and March 2020. From February to March, total content views increased from 640,000 to 4,145,000, representing six-fold growth. During the same period, video views changed from 4000 to 120,000, a 30-fold increase. This preference for video signals that educators sought quick and authentic instruction and demonstration of the skills they wanted to apply immediately in their teaching

To understand the topics that teachers chose to learn, we compared the top 10 search terms during February and March 2020, and themes in the top 20 most-viewed content articles during the same period. Before March, the highest number of searches focused on speech-to-text, reading tools, and learning tools. In March, most searches included meetings, calls, video, and chat. This shift in search terms suggests that educators felt the need to communicate effectively in their new digital learning environments. The themes of most-used content became completely focused on digital and distance learning in March, with new topics replacing all the most-used topics in February that were not related to digital and distance learning. Figure 2 shows the most-viewed 10 topic themes with the numbers of searches for each one.

February most-viewed content topics	February numbers of views	March most-viewed content topics	March numbers of views
Voices and text-to-speech [Speak]	272,587	Setting up the digital learning environment [Microsoft Teams]	3,751,316
Setting up the digital learning environment [Microsoft Teams]	102,418	Voices and text-to-speech [Speak]	410,168
Communication in the digital learning environment	24,516	Assignments in the digital learning environment	320,103
Providing content in classes [Class Notebook]	17,998	Distance teaching and learning*	164,613
Math tools [Microsoft Mathematics]	12,145	Communication in the digital learning environment	122,212
Assignments in the digital learning environment	11,758	Collaboration in the digital learning environment	120,098
Translation [Microsoft Translator for Education]	11,538	Distance learning for students and families*	108,013
Reading tools [Immersive Reader]	10,679	Providing content in classes [Class Notebook]	107,296
Collaboration in the digital learning environment	10,534	Practices for leaders in digital learning*	37,519
Organizing content in the digital learning environment	4783	Translation [Microsoft Translator for Education]	30,338

Figure 2. Top topic themes for content views.

DISCUSSION AND IMPLICATIONS

This snapshot view of what millions of educators around the world searched for and used as they made a rapid transition from their classrooms to online learning environments offers insights into their needs and it guides development of content and approaches to professional development in support of their early and ongoing success with new tools and practices. Integration of technology in teaching is context-dependent and can be described using levels ranging from entry to transformation, as shown in the Technology Integration Matrix (Welsh & Harmes, 2018). Even educators who used technology in advanced ways in the classroom require time, training, and support to progress beyond entry level in an entirely new environment that is recognized to require different teaching approaches (Cavanaugh, 2013). Professional development programs should provide sustained learning experiences with scaffolding, reflection and coaching for educators who are new to distance teaching (Novak, 2018).

The rapid acceleration in educators searching for and using support content for digital and online learning signifies that educators recognize

the different affordances in their new environments. The strong preference they showed for learning new skills using video is an indicator of their entry level as learners and educators; they chose to receive instruction that replicated how they would learn from an instructor and sought the closest analog to seeing an expert. Among the research-based principles of effective professional development is that educators engage in activities that are coherent and immediately transferable to practice (Novack, 2018). Video of new practices appeared to fulfill this principle for educators who recently shifted to digital classrooms and it should be part of how educators expand their conception of teaching online.

Similarly, educators' emphasis on content about the online and digital learning space demonstrated that they are entering a new context and prefer content tailored to that context. Professional development providers who are now integrating online practices into the pedagogies that they are teaching inservice educators have available research-based national quality standards for online teaching to blend with classroom teaching frameworks (Quality Matters, 2019), and models for effective online teaching mentorship experiences (Kennedy & Archambault, 2012). If the future of K-12 teaching is more digital, providing online pedagogy and experience in professional development programs should be offered to benefit educators and their students, whether they teach in classrooms, online or in a blended content (Lowes, 2008). Research is needed to aid understanding of the specific blends of skills that correspond to teaching effectiveness as schools develop new and broader blended models. Examination of distance learning practices and student outcomes should begin now to enable understanding of effective approaches and the journeys and needs of educators making the transition.

As educators build their comfort and confidence in online teaching, they will likely search for and use content and professional learning experiences that take them beyond entry level toward transformational use of their new tools. Professional development providers can develop and plan now for advancing needs of the world's educators by offering micro-teaching video aligned to quality online teaching standards.

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