Transitioning to Teaching Online During the COVID-19 Pandemic

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Abstract

Background: During the COVID-19 pandemic many nursing educators have been required to abruptly convert to an online delivery model. Faculty need resources and support to transition face to face courses into an online format.
Purpose: The purpose of this article is to highlight nursing faculty perceptions of the effectiveness of resources, support, and methodologies for online teaching during the COVID-19 Pandemic.
Methods: A cross-sectional descriptive survey design was used to collect data about nursing faculty resources, support and methodologies used to transition at least one undergraduate or graduate degree nursing course to an online format during the COVID-19 pandemic.
Results: Eighty-four faculty who taught in ten university colleges of nursing used varied teaching methodologies in online courses, but included some consistent methods such as websites and web based tools. The student engagement strategies that faculty were most satisfied with were journal writing and projects. Most faculty reported having information technology support and access to instructional design resources.
Conclusion: Nursing faculty were resourceful, adaptive, and willing to use both novel and existing resources and methodologies to meet their teaching objectives and engage students. They were also, overall, satisfied with the administrative support they received from their respective institutions. Many of these resources, methodologies, and supports will continue to be used by faculty as likely more programs and courses will continue to be managed online.

Keywords

nursing faculty, online teaching, pandemic

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The COVID-19 pandemic left many nursing faculty in the unusual position of abruptly transitioning their educational content to online formats (Nordmann et al., 2020). The rapid pivot from face-to-face education to fully online instruction prompted faculty to explore and use novel technologies and methodologies to deliver curricula. Effective online instruction typically requires time to develop (D. Hampton et al., 2020; Robinia & Anderson, 2010) and institutional support to implement (Chiasson et al., 2015; Richter & Idleman, 2017); however, faculty may not have been afforded these basic prerequisites of online teaching. In addition, comfort with technology is important in effectively delivering content. Considering the digital nature of modern society, faculty are comfortable using basic technology

(Culp-Roche et al., 2020); however, using software and applications that require extensive training can be challenging.

Online nursing instruction is not novel, but some programs did not offer courses virtually prior to the

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COVID-19 pandemic. Numerous instructors have likely never taught online before the pandemic. In the 2018, *Inside Higher Ed*'s Survey of Faculty Attitudes on Technology, only 42% of the faculty polled had taught online courses (Jaschik & Lederman, 2018). Past research investigating the needs of faculty teaching online may provide insight into the support and services required to effectively deliver content online for those faculty finding themselves teaching in the virtual world.

Considering the many challenges faced by faculty forced to rapidly transition their face-to-face course to an online format, it is important to understand the types of resources, supports, and methodologies that faculty used. Further, an understanding of how faculty viewed these tools is beneficial in determining better practices anytime there is a need to transition courses to an online format. Therefore, the aim of this study was to explore nursing faculty perceptions of the effectiveness of resources, support, and methodologies for online teaching transition. The specific research questions addressed during this study were: 1) how useful did nursing faculty consider online teaching methodologies, 2) what strategies were used to engage students, and 3) what institutional support and resources were helpful during the COVID-19 pandemic to pivot to online teaching?

Background

Institutional Support

Technical support has been a common need reported by faculty who teach online courses. Faculty access to technical support when using learning management systems (LMSs) such as Canvas, Moodle, and Blackboard has helped with the delivery and management of online content (Lancellotti et al., 2016; Zheng et al., 2018). Alternatively, lack of information technology (IT) support and poor technical reliability were found to be barriers to online teaching (Button et al., 2014; Roby et al., 2013). Therefore, having adequate technical support was essential during the stress of the pandemic.

Support from leadership is also critical to effective online teaching. Roney et al. (2017) found that only about 30% of the faculty reported receiving regular trainings regarding new technologies and 26% felt supported by their institution to attend technology training. Further, they found that approximately 53% of faculty surveyed received individualized or small group training related to technology use (Roney et al., 2017). Some institutions require online faculty to take courses or have training related to online teaching and will provide additional support. Richter and Idleman (2017) found that over 70% of faculty who were preparing to teach online had taken a course or seminar prior to teaching the class.

Pedagogical Support

Assistance from an instructional designer (ID) was also cited as a benefit provided by institutions. Instructional designers have varied roles; however, their expertise lies in assisting the faculty to structure the content with alternate delivery innovations to best optimize student learning. Redesigning content and embedding technology tools can improve engagement and learning outcomes. Faculty and students benefit from the ID's evaluation of the layout of the course in the learning management system and analysis of appropriate learning activities to best meet the intended course goals. Jaschik and Lederman (2018) reported that 45% of faculty used ID assistance to develop their online courses. Additionally, these faculty reported that the quality of their courses was improved with the use of ID (Jaschik & Lederman, 2018). Additionally, 75% of faculty reported that instructional designers provided help with understanding available technology tools and guidance on how to incorporate them into online courses (Jaschik & Lederman, 2018). Faculty have used advice from IDs to choose appropriate technology. Also ID can assist with troubleshooting technology and advising on pedagogical implementation (Chiasson et al., 2015; Richter & Idleman, 2017).

Mentorships and faculty learning communities have also been helpful to faculty as they transitioned their face-to-face courses to a virtual environment (Allen & Seaman, 2015; Richter & Idleman, 2017). Mentoring can include informal events in which faculty share new resources they have found to be helpful (Gazza, 2017). Faculty learning communities (Malhotra et al., 2020) have also been reported to add value in promoting faculty comfort with technology for teaching in the healthcare education field. Faculty can share experiences about what worked well in their courses, information about design and implementation of online courses, preferred technology, and troubleshooting (Malhotra et al., 2020). Sharing of this information can shorten the learning curve for faculty teaching online and decrease their fear of trying something new.

Online Teaching Methodologies

The type of teaching methodology used in an online course is dependent upon course objectives. Faculty typically use a blend of different methods to deliver online content (D. Hampton et al., 2017). Online text-book materials, recorded lectures, videos, and simulation were reported as methods used in one survey of nursing faculty (Broussard & Wilson, 2018). A review by Forbes et al. (2016) supported the use of videos as a method of teaching nursing skills supporting content. Case-based learning and collaborative discussions were reported as

effective online teaching methods in nursing courses (Jeppesen et al., 2017) that encouraged students to use critical thinking and professional communication skills. Pre-recorded lectures are another method of online instruction, usually in the context of hybrid or flipped classrooms. Generally, students have been receptive to this method of content delivery (Wolf, 2018). However, due to COVID-19, implementing flipped classroom models has been more of a challenge, although this can be accomplished through synchronous online education.

Student engagement also influences the type of teaching methodology used in online courses. According to Khan et al. (2017), there are best practices to promote student engagement in online courses. They include: (a) offering challenge and connecting content with how it can be applied and useful, (b) collaborative and active approaches to learning should be used, (c) there should be quality interactions between the students and between the instructor and students, and (d) courses should include enriching experiences. Discussion boards, group projects, and peer-review of research projects are some activities that meet these criteria for best practices. D. Hampton et al. (2017) found that the two online learning methodologies most engaging for students to promote learning were videos or narrated presentations and case studies. Group assignments can create challenges for students in online courses, and thus are not a preferred learning method by students (D. C. Hampton & El-Mallakh, 2017); however, it is important for students to learn how to be effective when working in groups, including in virtual groups, so the value of group learning needs to be emphasized.

Methods

Setting/Participants and Procedures

Nursing faculty (N = 84) from ten U.S. colleges and universities were recruited via institutional listserve email to participate in this cross-sectional, descriptive study by completing a Research Electronic Data Capture (REDCap) (Harris et al., 2009) survey that included demographics, teaching methodologies, and resources used during online transition. Participant inclusion criteria included nursing faculty who transitioned at least one undergraduate or graduate degree nursing course to an online format during the COVID-19 pandemic. This study was approved by the affiliated university Institutional Review Board and is registered with the Health Research Authority's Research Transparency Forum's Research Registry.

Measures

Demographic data included age, gender, race, years of teaching, state where nursing school/college is located, type of nursing program, months/years of online teaching experience, and whether or not participants had taught online courses prior to COVID-19 (yes or no). Participants were provided a list of various teaching methodologies and were asked to choose the ones they used during the COVID pandemic and the ones used specifically to engage students. Use of these online teaching methodologies were measured using a 5-item Likert scale (very unsatisfied, unsatisfied, neutral, satisfied, very satisfied). Faculty were asked to rank their satisfaction with these methodologies and their institutional support using a Likert scale. Student engagement strategies were queried using a similar Likert. Participants had free text options to list additional teaching methodologies for items included in the instrument (see Figure 1).

Perception and satisfaction with resources and support were queried using similar 5-item Likert scales. These included school-provided teaching centers, instructional design experts, nursing organization support materials (e.g., American Association of Colleges of Nursing, state nursing organizations), school-provided informational technology assistance, international (e.g., World Health Organization) and national (Centers for Disease Control and Prevention) health agency information specific to online teaching. A free-text query for resources/support not included in the list was included in the survey. Participants also had free-text items to respond to about perceptions of their transition experience.

Results

Demographics

Three hundred eleven nursing faculty from ten universities were invited to participate in the survey. The participating universities were located in the northwest, midwest, and southeast regions of the United States. A total of 84 faculty, (27%) response rate, completed the survey. The average age of participants was 51.2 years ($SD = 11.5$, range 29–70; see Table 1). The majority of participants were female (87%) and identified themselves as Caucasian (89%). The remaining eleven percent self-identified as Asian, African American, or other. Most faculty taught Bachelor of Science in nursing courses ([BSN] 70%), followed by Doctor of Nursing Practice ([DNP] 30%), Master of Science in Nursing ([MSN] 27%), and Doctor of Philosophy ([PhD] 18%) courses. Thirty-three faculty (42.3%) taught in undergraduate programs, twenty-five

Table 1. Demographic Characteristics of the Study Sample (N = 84).

	Mean (SD); range or n (%)
Age	51.2 (11.5); 29–70
Gender	
Female	73 (86.9%)
Male	11 (13.1%)
Race	
Asian	2 (2.4%)
Black	6 (7.1%)
White	75 (89.3%)
Other	1 (1.2%)
Teaching program (select all that apply)	
BSN	57 (67.9%)
MSN	23 (27.4%)
DNP	25 (29.8%)
PhD	15 (17.9%)
Years teaching	11.0 (8.5); 0–36
Prior online teaching experience	
Yes	54 (64.3%)
No	30 (35.7%)

(32.1%) in graduate programs, and twenty (25.6%) taught in both programs. Faculty had an average of 11 years of experience in academia (SD = 8.5). Almost two-thirds (64%) had prior online teaching experience.

Teaching Methods Used When Transitioning to Online Courses and Satisfaction With These Methodologies. Teaching methodologies used by participants in online courses varied. Most participants (see Figure 2) reported utilizing teaching methodologies such as web sites and online web-based tools (96%; including video software such as iMovie, apps, and virtual classrooms). The second most used methodologies included audio and visuals (94%), followed by images (84.5%) and text-based supplemental resources (80%). The most infrequently used teaching methodologies were voices and perspectives (62.5%; student presentations, guest practitioners or instructors). Multiple adaptive learning platforms and software that support individual or team based active learning (eg; Panopto, Telepsych, Top Hat, ATI, and EHR tutor) were implemented by participants.

The teaching methodologies faculty were most satisfied with when transitioning their courses online were websites and online web-based tools and experiences from the field (M = 4.2; potential range 1 to 5 scale, see Table 2). Next were audio and video (M = 4.1). Faculty found text-based supplemental resources (M = 3.9) to be the least useful.

Strategies Used to Engage Students When Transitioning to Online Classes and Satisfaction With These Strategies. The teaching techniques most frequently implemented, with the goal of engaging students, were class discussion (90%; using discussion boards and social media; see Figure 2), followed by projects (82%), self-assessments (59%), and research (55%). Less than half of participants used receptive activities (39%; podcasts and PDFs), journal writing (35%) and shared knowledge (30%). In the free-text field, faculty included methods for more intimate engagement including personal 1:1 check-in with students, Flipgrid video discussions, small group sessions via Zoom, among others. One participant reported that sharing student and faculty pictures about their experiences during COVID-19, such as family and pets, helped to keep students engaged.

The student engagement strategies that faculty were most satisfied with were journal writing and projects (M = 4.0; see Table 2). Next were receptive activities and research (M = 3.8). Faculty found shared knowledge bases such as Wikis and online groups and quizzes (M = 3.60) to be the least helpful in engaging students.

Institutional Support Services Provided and Satisfaction With These Technologies. Faculty utilized several support services from their institution during the transition. Most faculty reported having information technology support (96%) and access to instructional design resources (85.5%). Approximately three-fourths of faculty used online educational modules (76%) and pre-formatted course shells (74%) in their learning management system. The least utilized support area was materials provided by national and international nursing and public health organizations (41%). Faculty reported other support provided by their institution as emotional reassurance, mentoring, and administrative support. Faculty described a learning curve with technology, although many were thankful for content sharing as there was not time to design new instruction, read best practices or other educational resources.

The institutional support areas faculty were most satisfied with were instructional design, online education modules, and pre-formatted course shells (M = 4.1, see Table 2). Faculty were least satisfied with support resources from state and national nursing organizations (M = 3.6).

Discussion

Nursing faculty perceptions of the effectiveness of resources, support, and methodologies for transitioning to online teaching were assessed approximately four months after the COVID-19 pandemic began. The purpose of this assessment was to determine what teaching methodologies were able to be implemented rapidly during the transition, which ones were used intentionally to help engage students, and what was the level of support faculty received during this time of rapid transition.

1. Which of the following teaching methodologies did you use when transitioning your course to an online format? (Choose **all** that apply)

    __ Text-based supplemental resources (e.g., scientific articles, practice-guidelines)

    __ Images (e.g., photographs, screenshots, charts, graphs, illustrations)

    __ Audio and video (e.g., voice-overs, YouTube videos)

    __ Voices and perspectives (e.g., student presentations, guest practitioners or instructors)

    __ Experiences from the field (e.g., case studies, simulation)

    __ Websites and online web-based tools (e.g., video software such as iMovie; apps; virtual classrooms using Collaborate, Zoom, or other virtual meeting software)

    __ Other (free text)

    How satisfied were you with the methodologies in facilitating the transition?
    Scale

    __ Very Unsatisfied   __ Unsatisfied   __ Neutral   __ Satisfied   __ Very Satisfied

2. What strategies did you use to engage students while transitioning to online classes? (Choose **all** that apply)

    __ Class discussion (e.g., discussion boards, social media)

    __ Journal writing (e.g., blogs)

    __ Shared knowledge base (e.g., Wiki, Google groups, Facebook groups)

    __ Self-Assessments (e.g., quizzing with feedback features)

    __ Projects (e.g., work groups, common presentation tools such as PowerPoint)

    __ Receptive activities (e.g., Podcasts, PDFs)

    __ Research (e.g., online databases, internet searches, peer review of research reports)

    __ Other (free text)

   How satisfied were you with these engagement strategies?
    Scale

    __ Very Unsatisfied   __ Unsatisfied   __ Neutral   __ Satisfied   __ Very Satisfied

Figure 1. Teaching Methodology and Student Engagement Strategy Instrument Items.

Results of this study illustrated that faculty were adaptable, used multiple teaching methodologies, and were overall satisfied with the methodologies they used and the support they received. Findings demonstrate that faculty were a little more uncertain about methodologies to use for engaging students, but they were overall satisfied with their choice of strategies used to engage students.

Web sites and online web-based tools were utilized the most by faculty. During the pandemic, to connect with students, virtual classrooms managed through Zoom, GoToMeeting, Google Meet, Collaborate and multiple others were used. Multiple companies are rapidly developing web conferencing products (Fortune Business Insights, 2020) or expanding the features of their current products. Faculty experience during the pandemic with

Faculty Perceptions
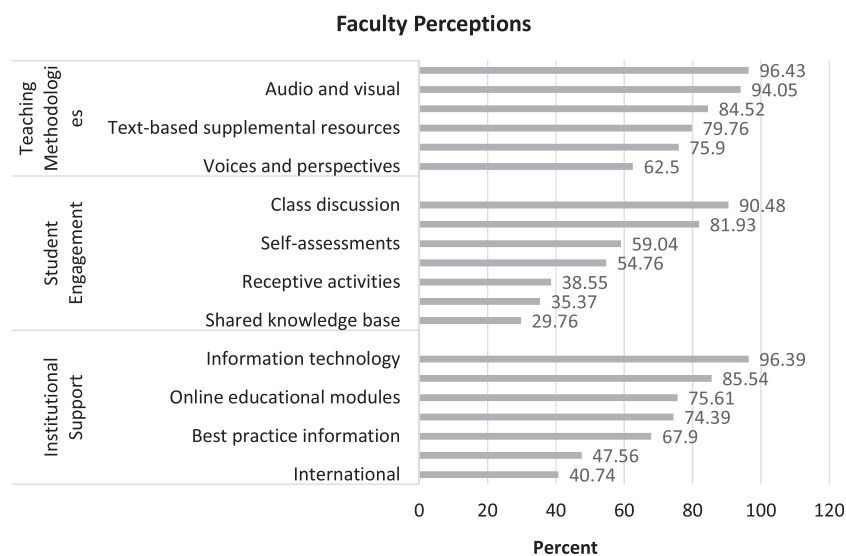
Figure 2. Percent of Faculty Using Teaching Methodologies and Student Engagement Techniques in Adopting Courses to Online Formats (N = 84).

these online platforms is just the beginning of creative innovations used to connect and communicate with students online.

Other studies focused on teaching methodologies used in online nursing programs. D. Hampton et al. (2017) found that the preferred teaching/learning methods for students were videos/narrated PowerPoint presentations, followed by synchronous adobe connect sessions. Case studies were also popular with students, as was reported by Jeppesen et al. (2017). The study noted that faculty reported higher levels of satisfaction with the use of audio and visual materials, case studies, and simulation, which is consistent with the methods students most prefer. Group projects and use of Wikis were methods that students did not like as reported by D. Hampton et al. (2017). The study shared knowledge-based activities such as Wikis and Google groups were strategies with which faculty reported being the least satisfied in relation to engaging students. Even though these methods may offer value in relation to socialization, student dissatisfaction of working in groups may decrease the impact of these methods in facilitating engagement and learning.

The study determined that the least utilized teaching methodology was text based supplemental materials. D. Hampton et al. (2020) discovered students ranked assigned readings from journals and textbooks as one of the least preferred teaching methods and least effective method for learning. This is not surprising as we know that students do not like to read content. The teaching methodology preferred by students can vary by generation (D. Hampton et al., 2017) so the fact that faculty are using a diversity of techniques is excellent.

Faculty feel least confident about engaging students (Culp-Roche et, 2020). The study noted that faculty used a variety of teaching methods to engage students. Promoting class discussion through discussion forums and social media platforms were frequently used by faculty in their courses (90.5%); however, they did not indicate confidence that discussion forums engage students as indicated by their lower level of satisfaction with use of discussion for engaging students. Multiple strategies exist to promote the use of engagement in discussion forums, to include having students provide verbal versus text-based responses to discussion questions or scenarios. Additionally, having students create a short video as a discussion response and upload the video to the forum is one of the most engaging methods of conducting discussions—in that students can see the faces of student colleagues, hear them speak, and thus feel more connected.

Faculty reported frequent use of projects in their online courses and a high level of satisfaction with using projects to foster engagement. However, students in a previous study have reported challenges with projects in online settings including time management and the failure of some students to do their share of work as a member of the group (D. Hampton et al., 2017). Thus, faculty need to implement processes to maximize positive group experiences to get students to effectively work in groups. Such processes include implementing mechanisms to ensure that all students do their share of work, ensuring that students work out processes for how to communicate with each other, and providing detailed assignment instructions to allay confusion and misinterpretations. Learning to work in groups is a critically important skill for students today, it is positive that

Table 2. Satisfaction Ratings With Teaching Methodology, Student Engagement Items and Institutional Support.*

Item	Mean satisfaction (SD)
Teaching methodologies (range 1–5)	
Text-based supplemental resources (e.g., scientific articles, practice-guidelines)	3.9 (0.9)
Images (e.g., photographs, screenshots, charts, graphs, illustrations)	4.0 (0.9)
Audio and video (e.g., voice-overs, YouTube videos)	4.1 (0.7)
Voices and perspectives (e.g., student presentations, guest practitioners or instructors)	4.0 (0.9)
Experiences from the field (e.g., case studies, simulation)	4.2 (0.8)
Web sites and online web-based tools (e.g., video software such as iMovie; apps; virtual classrooms using Collaborate, Zoom, or other virtual meeting software)	4.2 (0.9)
Student engagement strategies (range 1–5)	
Class discussion (e.g., discussion boards, social media)	3.7 (1.0)
Journal writing (e.g. blogs)	4.0 (0.8)
Shared knowledge base (e.g., Wiki, Google groups, Facebook groups)	3.6 (1.0)
Self-assessments (e.g., quizzing with feedback features)	3.6 (1.0)
Projects (e.g., work groups, common presentation tools such as PowerPoint)	4.0 (0.8)
Receptive activities (e.g., Podcasts, PDFs)	3.8 (0.6)
Research	3.8 (0.8)
Institutional support (range 1–5)	
Instructional design	4.1 (1.0)
Information technology	4.0 (1.0)
Online education modules	4.1 (0.9)
Best practice information (i.e., print or online guides)	4.0 (0.9)
Pre-formatted course shells (i.e., Blackboard, Canvas)	4.1 (0.8)
Nursing organization support materials (e.g., American Association of Colleges of Nursing, state nursing organizations)	3.6 (1.0)
International (e.g., World Health Organization) and national (e.g., Centers for Disease Control and Prevention) health agency information	3.8 (0.9)

*Note: Means calculated among those who responded having used each method.

faculty feel groups help engage students and facilitate learning.

Information technology and instructional design support is vitally important in nursing education. Faculty were satisfied with instructional design support from their institutions, along with the course management systems used for teaching and the online education modules used for teaching. The overall quality of courses is better when instructional designers help organize content (Jaschik & Lederman, 2018). Further, when the expertise of the instructional designer and the content knowledge of the faculty member are combined, a higher quality online course results (Halupa, 2019).

Limitations and Strengths

Although the study included ten universities across the country, it is limited due to sample size. For future studies, a more ethnically diverse sample would be valuable. In future investigations, a longitudinal study could provide valuable information about changes in faculty knowledge and skills related to online teaching. Strengths of the study included having an expert team in nursing online education to design and implement the study.

Implications for Practice

With crisis, comes opportunity (Mulla et al., 2020). In the past, faculty were resistant to transitioning courses from face-to-face to an online format. The coronavirus pandemic forced a change to online course delivery. At the same time, new challenges such as COVID illness among faculties and/or students, illness of family members, and faculties having to home-school their own children have occurred and required significant focus. In addition, the pandemic has had a negative financial impact on some nursing programs. Polikoff et al. (2020) reported that there has been a small decline in the number of students attending college and many students have reduced the number of courses they are taking due to the pandemic. Faculty in some schools have been asked to be more cautious with their budgets and to avoid adding costly resources.

Future attention toward teaching and learning will be required, including how to promote both student and

faculty resilience, how to keep students engaged, and how to maximize learning for both graduate and undergraduate students. As an outcome of the pandemic, instructors will be more prepared in teaching online courses (Cahapay, 2020; Neuwirth et al., 2020), but they continue to have much to learn.

King and Nininger (2019) reported that most instructors teach how they were taught. Prior to the pandemic, some faculty had not taught an online course or received education on how to teach online courses. Since increased competence in teaching online leads to a higher level of student satisfaction, it is important for each school to assess the level of comfort of their faculty to teach online and to develop educational courses to address faculty areas of weakness or concern. Moralista and Oducado (2020) noted that teaching methods that work well in face-to-face instruction may not be effective in online courses, and thus faculty need to be provided with support and training to help them adapt and promote student engagement.

Conclusion

This study explored the perceptions of nursing faculty related to the effectiveness of resources, support, and methodologies used to transition face-to-face courses to an online environment. The findings determined that nursing faculty are resourceful, adaptive, and willing to use both novel and existing resources and methodologies to meet their teaching objectives and engage students. Overall, faculty were satisfied with administrative support received from their respective institutions. Faculty will continue to use resources, methodologies, and support as they navigate the challenges of the COVID-19 pandemic and other unknown events. The forced change to virtual course delivery will likely hold the transition to an online format long after the pandemic is over. However, some changes necessary in the short term, will require revisiting to maintain a high standard of academic quality. Nursing faculty have demonstrated the ability to abruptly pivot when needed. Continued flexibility is necessary as the transformation continues post pandemic.

Declaration of Conflicting Interests

Funding

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