Zooming in on Opportunity: Transitioning to a Virtual Resident Scholarship Day During COVID-19

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Abstract

Background: The COVID-19 pandemic has disrupted academic conferences and forced educators to identify creative solutions to highlight medical trainee scholarly projects.

Objective: To describe the strategic approach to transforming a single institution’s Residency Scholarship Day into a virtual platform by leveraging existing technologies and resources.

Methods: 42 pediatric residents from Baylor College of Medicine electing to participate in Resident Scholarship Day were instructed to create scholarly project presentation videos online. Synchronous, small-group presentations of pediatric resident projects with faculty moderators were organized alongside asynchronous viewings and Grand Rounds presentations on June 5th, 2020.

Results: Based on the program survey (42% response rate), the event was favorably reviewed by participants, both in terms of content and usability. Resident participants (n=7) rated the digital presentation platform using the System Usability Scale with a median score of 87.5 out of 100. Positive program evaluation survey (n=19) aligned with program goals, and constructive feedback noted only minor technical burdens. The total monetary cost of the event, outside of established institutional technology subscriptions, was $0.

Conclusions: Our residency program’s pivot to a virtual Resident Scholarship Day in the wake of the COVID-19 pandemic was made possible by leveraging existing technologies at our institution. We were able to conduct an event that not only adhered to our guiding educational frameworks but also cut costs and was well received by participants.

Keywords: Academic meeting; Virtual meeting; Residency; Scholarship; Pediatrics; Self-determination theory; Symposium
Introduction

The COVID-19 pandemic has had wide-ranging effects on medical education. From reduced clinical opportunities to displaced and quarantined learners, this pandemic has disrupted our established educational curricula and routines (Liang, Ooi, and Wang, 2020). Adapting to new norms like social distancing has required educators to employ both existing and new technologies. Academic conferences, in this regard, have been challenging – nearly all regional, national, and international in-person conferences for the remainder of 2020 have been canceled. Consequentially, many medical trainees and faculty have lost opportunities to present and disseminate their scholarly work in public forums.

The Resident Scholarship Program (RSP) at the Department of Pediatrics, Baylor College of Medicine is a longitudinal curriculum that provides residents with a scholarship-rich educational experience during residency training that has previously been described (Thammasitboon et al., 2016). The development of this program was heavily informed by Self-Determination Theory (SDT) and its guiding principles of autonomy, competence, and relatedness (Ryan and Deci, 2000), (Lyness et al., 2013). Resident Scholarship Day (RSD) is an annual, department-wide research symposium that acts as the culminating event in the RSP curriculum to celebrate and highlight mentored scholarly work in a supportive environment.

Despite the extraordinary disruptions, budgetary restrictions, and technical challenges posed by the pandemic, our RSD planning committee was determined to recreate this venue for featuring trainee scholarly work. In this report, we describe our strategic approach to transforming the RSD into a virtual platform by leveraging existing technologies and resources.

Methods

Guiding Principles

The RSP, alongside residency program leadership, aimed to comply with the framework of SDT as well as the overarching goals of the RSP: to foster habits of inquiry, innovation and collaboration among residents, and the scholar community. It has become our culture to use these principles to inform decision-making and execution of tasks related to the RSP, as in this report when transitioning to a virtual RSD format (Figure 1).

Figure 1: Program components of Virtual Resident Scholarship Day
Pre-Pandemic RSD

RSD is an annual research conference hosted by the Department of Pediatrics at Baylor College of Medicine that features pediatric resident research. As part of the larger RSP curriculum within the Pediatric Residency Program, residents are encouraged to submit abstracts to be presented at RSD. Exemplary projects representing the four types of scholarship categorized by Boyer's model of scholarship (Discovery, Integration, Teaching and Application) (Boyer, 1990) are selected for Pediatrics Grand Rounds presentations. Other projects (typically 30-45) are selected as general poster presentations to be presented during professor rounds moderated in-person by pediatric faculty members. All residents and faculty view and discuss the scholarly work alongside lunch networking during 90 minutes of protected resident education time.

Virtual RSD Program Components

1. Asynchronous Digital Presentations

After an exploration of existing virtual services and venues, VoiceThread (VoiceThread LLC) was chosen as the RSD digital presentation platform. VoiceThread is a cloud application platform for real-time iterative process of presentations through a web-based or mobile device application. The platform allows users to upload, share, and discuss presentations. This type of platform is commonly used to facilitate an interactive classroom in which the instructor or classmates can make comments on slides or videos using microphone, webcam, text, phone, and audio-file upload. 42 residents had research that was accepted for general presentation, comprising 46 research projects in all. Participating residents were provided with instructions, including a template slide deck, that led them to upload their ~5 minute oral presentations to the RSD Symposium VoiceThread page. An RSD-specific VoiceThread URL was created and shared so all faculty and residents could view and make comments on these recorded presentations asynchronously anytime within the weeks prior to and following RSD.
2. Synchronous Virtual Presentations

Small-group professor rounds that incorporated resident presentations and faculty feedback have previously been valued by resident presenters and RSD attendees, so care was taken to embed this feature of RSD into our virtual formal. First, moderator training sessions regarding the technical and procedural logistics of the Synchronous Virtual Presentations on the VoiceThread platform were conducted by RSD committee members. Zoom (Zoom Video Communications, Inc.) was used as our primary videoconferencing platform due to its institutional availability and familiarity with use among presenting residents and faculty moderators alike. During these live professor rounds, each moderator hosted a Zoom video conference and synchronously facilitated a group of 5-6 presentations. After a group introduction, the moderator and residents proceeded virtually to each of their respective VoiceThread presentations for a viewing, followed by a short Q&A. Though these groups were each in their own zoom meetings, mentors, faculty, and other residents were encouraged to join the synchronous viewings and participate openly. Opening and closing remarks in a large, communal Zoom meeting were conducted by RSD committee members before and after professor rounds to foster a sense of community binding these groups together.

3. Virtual Live Grand Rounds Presentations

Four exemplary resident research projects were selected for Grand Rounds presentations. To ensure presentation quality and avoid technical difficulties, two separate practice sessions were set up and run by RSD committee members for feedback. Virtual Grand Rounds were broadcasted on Zoom by a moderating RSD committee member (DS), with each resident presenting remotely. The live presentation was available for all members of the Department of Pediatrics.

Both the Synchronous Virtual Presentations and Grand Rounds were held on June 5th, 2020. An RSD Electronic Guide in PDF format accompanied all email advertising and communications to faculty and resident participants. The manual included: (1) instructions for signing in to the RSD VoiceThread symposium, (2) synchronous viewing groups and instructions, and (3) presenting resident abstracts.

The RSD program evaluation comprised: 1) process evaluation using the System Usability Scale (SUS) (Brooke, 2013), a 10-item, 5-point agreement Likert scale giving a global view of subjective assessments of system usability and satisfaction, collected from resident presenters, and 2) outcome evaluation using the end-of-session questionnaires to assess educational effectiveness of the three RSD program components. All the evaluations were conducted electronically using SurveyMonkey (SVMK Inc.). SUS responses were converted for scoring. For odd (positive) items: subtract one from the user response. For even-numbered (negative) items: subtract the user responses from 5. Individual SUS scores were calculated as the sum of the converted responses, multiplied by 2.5. This converts the range of possible values from 0 to 100.

This educational activity was part of the educational program approved by the Baylor College of Medicine Institutional Review Board.

Results

From total of 45 medical trainees and faculty members participated in the synchronous virtual presentations, 19 (42% response rate) completed the RSD evaluation survey. From total, 45% and 74% of participants rated the digital presentation platform to be easy to navigate as an asynchronous viewing and synchronous digital presentation, respectively. The mean ratings for overall educational effectiveness of the asynchronous viewing, live virtual grand rounds and synchronous digital presentations were 4.20, 4.59, 4.16 (1=Poor, 5 = Excellent). The mean ratings for the benefits gained pertaining to knowledge and skills that they will use in research and scholarship, opportunity for
networking with other scholars and sense of belonging within a community of scholars were 3.5, 4.2 and 4.5 (1= Not at all, 5= A great deal), respectively.

Table 1. Narrative comments from the program evaluation survey

| Category          | Examples of narrative comments                                                                 |
|-------------------|-------------------------------------------------------------------------------------------------|
| **Fostering Inquiry** | • "I enjoyed listening to everyone’s presentations. In real life symposia, I rarely get to read each poster in its entirety. This was good way to learn.”  
• "I think the small group sessions actually made Resident Scholarship Day more interactive and academic because it slowed people down to actually listen to the research instead of browsing through a poster room. It also pushed me to listen to topics I would not have initially been drawn to.”  
• "Group residents together with similar interests and a moderator can serve as an expert.” |
| **Room for Improvement** | • "I admire the organizers for their creativity in still having such a well-organized and interactive event."  
• "Inspiring! It went as well as it could given circumstances.” |
| **Fostering Innovation** | • "I really enjoyed this format since it allowed for me to see the work of my colleagues as well.”  
• "Even better than usual! I was very impressed by the synchronous groups and the fun, supportive discussion that was even more interactive than usual.” |
| **Fostering Collaboration** | • "I understand the limitations with the format, however this format made it difficult if there were other presentations that were interesting in other groups in which I wanted to ask questions about.” |
| **Room for Improvement** | • "Good substitute during pandemic. Excellent virtual attempt. Lots of technical kinks that will be worked out with time.”  
• "Wonderful interactions. Great virtual option. I enjoyed the sessions.” |
| **Procedure** | • "Live zoom sessions perhaps don’t need to have voice recording but presenters can talk live. We could keep the recordings for asynchronous participation.” |

The narrative comments are shown in categories according to the goals of the resident scholarship program and procedures (Table 1). Participants congratulated the accomplishments of the residents and innovative attempts of the planning committee. As expected, we received feedback around some inherent technical glitches of the videoconferencing platform and audiovisual capabilities (e.g. choppy images and suboptimal audio quality). The resident presenters (n=7) rated the digital presentation platform using the SUS with the median score of 87.5 (interquartile range 60, 90) out of maximum score of 100 (Figure 2). The SUS score of 84.1 or greater is considered grade A+.

**Figure 2:** The System Usability Scale (SUS) rated by the resident presenters
Discussion

The COVID-19 pandemic has accelerated the availability of virtual conferencing opportunities across nearly every industry. As in-person academic conferences have been cancelled, the transition to virtual offerings will continue to expand. In this report, we offer a single institution’s solution to digitizing a trainee research symposium while adhering to two important rules: the guiding educational framework of our RSP curriculum and a strict budget.

Despite the extenuating circumstances of pandemic-related social distancing, the combination of two virtual platforms allowed our institution to host a successful RSD that remained steadfast to the principles of SDT: autonomy, competency, and relatedness. Because participation in RSD is voluntary for residents, we could not afford technical difficulties that might deter them from current or future participation. Thus, the virtual platform had to be very user-friendly to comply with the autonomy principle. To foster competence, residents had to engage with the platform to gain skills in conceptualizing, preparing, and presenting their scholarly work in a novel way. On this platform, residents were able to practice and refine their presentations through video recording prior to submitting their recorded presentations to their mentors and collaborators. This platform also allowed for asynchronous presentation viewing by the general public (i.e. other trainees and faculty). The strength of this platform is the robust feedback options that can be used to facilitate learning and support the last principle, relatedness, of the SDT.

Our attendees appreciated the creative and pragmatic strategies we used to capitalize on what existing virtual platforms could offer to optimize interactions among attendees and presenters and leverage some technical constraints (e.g. audio and visual quality). The synergistic integration of asynchronous and synchronous sessions created “social presence” (Rourke et al., 1999) that enabled us to achieve the goals of the RSP and promote habits of inquiry, innovation and collaboration. “The establishment of social presence – a perceived sense of somebody being present and ‘real’ – is among the strategies to tackle the challenges of online learning” (Poquet et al., 2018). We
assert that social presence is critical to educational activities particularly on a virtual platform. Additionally, we encourage having opening and closing remarks, even briefly, to set the stage for sense of belonging to a community and enhance interpersonal interactions.

We recognized that we could not optimize the networking opportunity or promote collaboration among all the participants during the allocated 90-min session at the RSD. Some attendees perceived missed opportunities to navigate across presentation groups during the synchronous session. We recommend additional advertisement to encourage attendees to capitalize on the asynchronous viewing feature. The versatile feedback and comment options of this platform allow for meaningful dialogues within the community of scholars. Additionally, these methods are limited in their generalizability by the use of specific technologies. However, these services are not unique, with significant industry overlap to allow the design to be conceptually transferable. Our ability to leverage technologies with existing institutional subscriptions allowed us to hold our entire RSD for a significantly reduced price in the setting of COVID-induced budget cuts – $0.

Conclusions

Our residency program’s pivot to a virtual resident scholarship day in the wake of the COVID-19 Pandemic was made possible by leveraging existing technologies at our institution. We were able to conduct an event that not only adhered to our guiding educational frameworks, but also cut costs and was well-received by participants.

Take Home Messages

- Medical trainees and faculty have lost opportunities to present and disseminate their scholarly work in public forums during the COVID-19 pandemic. Adapting to new norms like social distancing has required educators to employ both existing and new technologies.
- Our residency program’s pivot to a virtual resident scholarship day included 45 pediatrics residents who participated in both synchronous and asynchronous virtual presentations.
- This event was made possible by leveraging existing technologies at our institution. We were able to conduct an event that not only adhered to our guiding educational frameworks, but also cut costs and was well-received by participants.

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Figures 1-2. Source: Satid Thammasitboon.

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Appendices
None.

**Declarations**

_The author has declared that there are no conflicts of interest._

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**Ethics Statement**

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