

Moving Online: Creating a Relevant Learning Experience for Preservice Teachers in the Time of COVID-19

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ABSTRACT

The purpose of this article is to detail the creation of an assignment, after Covid-19 moved our university's instruction online, that helped students make sense of how K-12 teachers were adjusting their own pedagogy. The assignment included two parts: 1) students conducted an interview of their cooperating teacher to understand how they had to adapt their teaching and 2) students created a science online-learning activity that students could engage at home. Based on the interviews, we report anecdotal data regarding how K-5 teachers shifted to fully online instruction. We found that the assignment helped preservice teachers make sense of pedagogical approaches and practice skills they had been developing over the course of the semester and reflect on their own cooperating teachers' experiences. We recognize that online learning experiences will continue to increase as technology becomes more integral at all levels of education and that our students need to continue learning about and creating online-learning activities.

Introduction

The emergence of COVID-19 and the subsequent transitioning of universities from F2F (F2F) to online instruction to help combat the spread created a new set of challenges for teacher educators. Many aspects of teacher preparation rely on F2F requirements such as classes and field experiences. Thankfully, our students had completed the majority of their field experiences when our state decided to move K-12 schools online. However, our courses were not complete and we needed to develop a new plan of instruction. In order to make the transition more manageable, our university suspended instruction for one week following spring break. This extra week allowed us the opportunity to make adjustments to our remaining assignments and decide how to provide relevant experiences that would continue the professional growth opportunities of our preservice teachers (PSTs). Fortunately, we were both somewhat adept in online instruction with our experience teaching online graduate courses. Our experience was unlike that of our colleagues across campus. Prior to COVID-19, approximately 35% of our colleagues had ever logged into the University's online management system and only conducted F2F instruction, setting the backdrop for how our PSTs encountered learning for a large part of their college experience. Further, K-12 teachers faced challenges due to their general inexperience with online learning (Martin et al., 2019). Due to these circumstances, we decided to modify an assignment with the goal of providing PSTs the opportunity to (1) better understand the challenges their field experience teachers were navigating and (2) to identify and design an online-learning activity.

Assignment Redesign

Online learning continues to expand. Our PSTs will be required to design online experiences for their students regardless of future circumstances because many locations across the United States have substituted “elearning” days when school is unable to meet. However, teachers lack the training to be effective in an online environment (Farmer & West, 2019). Our original final project, which required the PSTs to create an interview to assess students’ science content understanding, needed to be modified because few PSTs had been able to conduct their interviews. We decided to integrate the current phenomena of online learning in a meaningful way with teacher and self-interviews. We have provided the assignment and rubric in Appendix A so that you are able to adapt and use them in your own teacher preparation courses.

Background

We implemented the revised project in two classes with two distinct populations. The first group consisted of 32 traditional full-time students. They were all juniors and spent two full days a week in their field placements in third through fifth grade. The second course had similar content but was specifically designed for students in the dual enrollment program, earning a degree in elementary education with a specialization in special education. Subsequently, this class’s population was more diverse in age and could be considered non-traditional, with many of the students serving as paraprofessionals in the K-6 classroom as their primary means of employment. Additionally, the second class met after the regular school day ended and was held on a regional site away from the university campus. We highlight the differences in the classes because they help demonstrate: (1) this assignment can be applicable to any group of preservice teachers, and (2) why each author’s approach to this assignment had slight variations.

Methodological Stance

We approached this project redesign through a phenomenological lens, given that all teachers across the United States and many abroad were facing a similar situation of being submerged in online-learning from the traditional F2F classroom. Our perspective of phenomenology aligns with Crotty (1998) in that we are looking specifically at the lived experience without seeking to align with a particular theory. For this project, using research to inform practice, what was most significant is how the teachers and paraprofessionals experienced the rapid transition to online learning. All teachers experienced the shock of change with potentially limited guidance on how to be effective and how to approach instruction. This experience is especially powerful for the classroom teacher, but also provides the learning space for our PSTs to develop further skills should this type of “pandemic learning” be necessary for the future.

The Interview

The first part of the assignment required our students to interview their cooperating teacher or, in the paraprofessional case, to self-reflect and discuss the experience of collaborating virtually with the certified classroom teacher. The purpose of the interview was twofold: (1) Reflect on what approaches and actions are required for being an effective online teacher versus F2F and (2) Demonstrate that online learning can still be inquiry-based. The PSTs were required to ask ten questions. We provided seven of these questions representing our areas of interest, such as equity, pedagogical choices, and community. The students were able to then ask three of their own questions based on what they were most interested in finding out about their cooperating teacher’s experience.

A common question that students were curious about was how teachers were conducting virtual science experiments. We presume they were likely looking for ideas on how to design their own online-learning activity. However, what they discovered is that most of their cooperating teachers were either not doing any science (literacy and mathematics were common focus areas across all teachers) or were just giving students packets of worksheets to complete.

Students then wrote a reflective narrative based upon what they deemed significant in the interview, identifying themes across the answers, not just regurgitating responses one by one. Further, developing themes reinforced the science skill of developing a claim because the PSTs need to provide evidence and reasoning to support their themes. We had mixed results on PSTs' ability to generate and support their themes. The most common themes were missing the physical presence of students, lacking equity in access to resources, and feeling overwhelmed.

Overall, the interview served to expand the PSTs' experience with an already familiar classroom, to practice good questioning techniques, and to further develop their critical thinking skills. Finally, the PSTs merged the challenges learned from their cooperating teacher and the science pedagogy they learned during the semester to design an engaging online-learning activity with their field experience students as their target audience.

Online Lesson Design

The second part of the assignment required students to design an online-learning activity in the form of a single lesson. The purpose of the online-learning activity development was to provide the PSTs with the opportunity to apply the science pedagogy skills they had learned over the course of the semester in a lesson for students in their field experience classes. We provided several guidelines for the activity so that the PSTs would have experience with different types of online learning approaches. The PSTs needed to provide instructions on how to complete the lesson, create an instructional video for the students that was interactive, develop components for synchronous and asynchronous participation, and include an inquiry-based assessment.

Prior to completing the assignment, we spent time discussing the role of technology in the classroom and how it can be utilized in an online environment similar to F2F. Both authors attempted to demonstrate effective online teaching practices to serve as exemplars as the PSTs began developing their online-learning activity (Lewis, 2019). Further, short how-to videos were created to better enable students to succeed in designing their online-learning activity. We made the decision to provide resources that would enable them to spend their time thinking about and designing the student experience, rather than learning new software or programs.

For the traditional class, PSTs were provided a "sandbox" to complete their online-learning activity. The sandbox is an additional course that was established in our University's learning management system. The PSTs were provided full access as an instructor to the sandbox. The dual enrollment PSTs were provided with a Google Drive for organizing and sharing their individual online-learning activities. The Google platform was chosen for two reasons. First, these PSTs were more familiar with its design than the university learning management system. Second, many schools utilize Google Classroom as a learning platform.

The PST-created instructional videos were diverse and, overall, well-designed. For example, one student dressed up as an 80s rock star and created a song about rocks and minerals. The asynchronous instructional platform meant some PSTs struggled to create interactive instructional videos. As a result, most created small quizzes or asked students to consider content-specific scenarios rather than mirror interactive synchronous instruction. We were pleasantly surprised to see inquiry-based assignments rather than the rote-based worksheet packets like a large number of their cooperating teachers provided students. We found that most PSTs created a scavenger hunt that allowed students to investigate their own yard or a park for bugs, plants, or rocks.

The most apparent struggle for the PSTs was in designing resources that negotiated student learning through synchronous and asynchronous instruction. One of the most common ways that the PSTs addressed this criterion was to create a discussion board that students could engage with asynchronously and then organize small groups to collaborate via video conference synchronously. However, because our PSTs were placed in several schools where not all students had internet in their homes, presentations included options for children to collaborate via phone.

The final requirement for this part of the assignment was slightly modified for each class. Both classes were required to create a video presentation of their online-learning activity to explain their pedagogical approach for the module. In one class, the video was intended for peer use while, in the other class, the video was designed as an overview for students and parents, who would be completing the activity. For both classes, this helped to build their pedagogical content knowledge by demonstrating their understanding of the students, content, assessment, and appropriate approach to inquiry-based learning. The PSTs were largely able to demonstrate what they had learned about science pedagogy through this presentation, also allowing us to assess our PSTs and areas still in need of development. An additional requirement for this project was peer evaluation. The traditional class had to review the complete packet of online materials for three peers and post feedback to a class discussion board. The dual certification PSTs were asked to conduct a thorough peer review of two classmates, with specific guiding questions to direct the analysis, which was then written up and shared with both their professor and peer who developed the online-learning activity (Appendix B).

Conclusion

The purpose of this redesigned assignment was to provide students an opportunity to understand how COVID-19 was impacting schools, to learn how the PSTs' cooperating teachers were adjusting to rapid changes, and to practice the skills highlighted previously in the course. The assignment is highly adaptable and could be used to explore other avenues when schools are not disrupted by a pandemic. Some possible areas to which the interview could be adjusted are mathematics or science instructional pedagogy, equity, interdisciplinary STEM lessons, or use of technology.

We feel that having PSTs practice designing an online learning activity will only strengthen their ability to deliver effective educational opportunities for their students and to be better prepared for the rapid changes that online learning affords. The interview portion of the assignment was particularly valuable to have PSTs conduct their own inquiry, reflect upon what they learned, and develop a teaching tool that addresses the challenges shared. While this was not our intended goal, the task revealed an inherent value in allowing the PSTs to identify the immediate problem and develop meaningful practices that circumvent the concerns shared by their cooperating teachers.

Research has shown that PSTs are often more likely to replicate what they see as valuable and relevant – in this case, identifying the struggles with being ill-prepared for online instruction at the K-5 level. The disconnect between practice and theory was addressed through allowing the PSTs an opportunity to identify practices that would encourage learning in diverse environments (Britton & Tippins, 2015). We have already modified the assignment for existing classroom teachers who are enrolled in graduate coursework; this has been developed as a way for us to be more cognizant of the actual societal demands that exist and to help foster effective practices in all learning environments.

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The authors received no financial support for the research, authorship, and/or publication of this manuscript.

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Appendix A

Creating an E-learning Module

Given the current events and the ability for technology to allow students to participate in school from home this assignment provides an opportunity for you to not only ask questions of a current teacher, but puts you in the position to experience what it is like to create an online experience. There are 2 parts to this assignment: (1) Interview your field experience teacher from this semester about their experience with creating e-learning modules and (2) Create your own science-based e-learning module for your field experience class.

Online Module Assignment

Part 1

- Contact your field experience teacher from this semester and setup an interview, either by email or phone/video chat to ask them about their experience moving their instruction completely to e-learning. You must also turn in proof of interview, either a recording or screenshot of email from your field experience teacher that includes their email address.
- Questions you should ask, but are not limited to:
 1. Do you have any prior experience or training in designing e-learning experiences? Where have you been seeking out resources to help?
 2. How have you continued a sense of community with your class while not physically being in the same space?
 3. How have you modified planned assignments to be more applicable to the e-learning environment?
 4. What has been the biggest obstacle to teaching students virtually?
 5. What has been a silver lining for you during this experience?
 6. Have you created any assignments to help students understand the coronavirus? Why or why not?
 7. How have you ensured equitable access to your students, so everyone gets the same learning experience?

You should come up with 3 questions that you are curious about that might relate to your classroom specifically. If your teacher teaches science, then you should ask a question or two about how they are conducting science lessons during this time. If they do not teach science, then you can focus on any aspect of the classroom. You should include a section detailing the three questions you asked and why you asked them. **You must ask 10 questions total.**

- You will write a reflection on the answers that you gathered from your field experience teacher. You should touch on each of the areas from your questions. This should be a synthesis of their answers, not bullet points, but in paragraph form where you find themes across answers and reflect on how their experience impacts your own future teaching. This should be 3-4 pages in length (double spaced). Describe how their experiences have/are going to influence the design of your e-learning module. Also, be sure that you cite the book from this semester when discussing your teacher's pedagogical experiences and how it might still fit best practices or could be indicative of just trying to "survive the experience." Be sure you elaborate on your answers!

Part 2

- Choose a topic that relates to a science standard from your field experience this semester (i.e., grade level). The activity should be engaging for students (i.e., scavenger hunt, science experiment, doing something outside in their yard, etc.). Think about common items that students have at home that they can use to participate.
- In our class “sandbox”, create a module for that unit (title the unit with your last name, subject, and unit topic). Your unit must include at least four **original** (created by you) components:
 1. document file with instructional information (save/upload all documents as PDF files)
 2. link to your own instructional video
 3. discussion or some other interactive piece that students will engage with each other and you
 4. assessment with a submission folder “dropbox”
- Your videoed presentation will be a 5-10 minute show-and-tell of your module and your rationale for the instructional pieces you have included. You will upload your video presentation of your module to your module in the sandbox so I and your peers can watch it. Your presentation of the module should be the first file in the module so it is easily accessible. You can use screencast-o-matic or other software to record the presentation of your module (if it’s easier you can submit your video presentation via a YouTube link on your module).

E-Learning Rubric

	Needs improvement	Emerging	Meets expectations
<u>PART 1</u>			
Themes	Missing more than 3 areas for meeting expectations. Is not coherent. Does not relate themes to theory or make connections to teacher answers. Writing does not elaborate on connections or themes.	Missing 1 to 2 aspects for meeting expectations. Is not coherent at points. Is not consistent in relating themes to theory. Elaborate does not adequately address evidence of theme.	At least 2 themes in answers were identified and written about in a coherent manner. (possible examples: anxiety because of the lack of online experience, missing students, impossible to be equitable, etc.). Uses teacher answers and theory to make connections. Each theme is fully elaborated with evidence from teacher answers.
Self-reflection	Self-reflection does not touch on appropriate points of the themes, does not address answers from teacher or does not elaborate on self-reflection.	Does not consistently elaborate on impact of future teaching. Parts are not coherent.	You discuss the impact this experience will have on your future teaching (create more online modules? Get online training? Routinely engage with your students/families outside of class time? etc.). Provides connection to field experience teacher’s comments.
Links to Theory	Does not link to theory.	Inconsistent linking to theory.	Links to theory are made as you reflect on implications for your own teaching and the experience of your field experience teacher. These can come from our reading materials for this semester or from other classes. APA citations required in text and references at the end. (this grade is also reflected above in themes)

Interview	Did not provide proof of interview. <u>(you will get an automatic zero on this assignment)</u>	X	Provided proof of interview. (required)
Questions (Three questions you came up with.)	Less than three questions provided. At least 2 questions were not coherent or provided simple yes/no answers.	Less than three questions provided. At least 1 question was not coherent or provided simple yes/no answers.	Questions were open-ended and added new information to the conversation. Were on topic and assisted your self-reflection.
Writing	Writing consistently not coherent or grammatical mistakes were numerous. Introduction and conclusion were not appropriate or coherent.	Writing not consistently coherent or grammatical mistakes impacted meaning of paper. Introduction and/or conclusion were not appropriate or not coherent.	Writing is coherent with few grammatical mistakes. Headers were used to identify each theme. Appropriate introduction and conclusion included. (no specific points for this category because it impacts your scores in above categories)
<u>PART 2</u>			
Instructional Information	Directions included, but language not appropriate for grade level. Not written coherently. State standard not included.	Directions were included, but did not always use consistent language for grade level. Not written coherently. State standard included.	Directions were included, use appropriate language for age/grade, are coherent, and provide all necessary information. Necessary information includes pictures, information, links, etc. State standard being addressed included. Must be in written format. (This is NOT a lesson plan.)
Instructional Video	In video format, but not engaging. Does not provide additional information for students to explore on their own. Assistance to parents is nonexistent or not helpful. Presentation is mostly words and does not show consistent effort.	In video format, but not engaging for large parts. Does not provide additional information for students to explore on their own. Assistance to parents is minimal or not helpful. Presentation does not include visuals consistently.	Must be in video format but does not have to be a PowerPoint (be creative here). Provided information but is engaging for students and informative. Should not be rote or last more than 10 minutes. Provides information (either in links or a separate document, etc.) that will assist parents helping their child. Is coherent.
Discussion or interactive piece	Fosters little to no sense of classroom community. Is not equitable for all students. Does not include higher-order questions and not engaging. Instructions not present or have easy access.	Fosters some sense of classroom community, but has an equity issue (not synchronous or asynchronous). Does not include higher-order questions and/or is not engaging. Instructions might not be completely clear or have easy access.	Fosters sense of classroom community. Provides synchronous and asynchronous experiences for the whole class. Is thought provoking and asks different types of higher-order questions that are grade appropriate. Easy to access and has clear instructions.

Inquiry-based Assessment	Not inquiry-based, or provides explicit instructions on what students should do. Does not consider appropriate safety measures for at home participation. Does not completely link to state standard.	Largely inquiry-based. Has a guiding question. Does not consider appropriate safety measures for at home participation. Mostly links to state standard. Mostly own work, but uses materials from someone else.	Is inquiry-based and NOT ROTE. Has a guiding question students are answering that is appropriate and higher-order. Promotes active engagement and uses materials readily available at home. Proof of engagement allowed in multiple different formats. Links to a state standard. You created this assignment. Incorporates one or more scientific practices. Has instructions for safety.
Effort	Very little effort shown.	Inconsistent effort across all module aspects.	The module was created in a way that is pleasing for students and shows care and effort (i.e., adding pictures, doing animations, being creative, etc.).
Presentation	Presentation missing 3 or more criteria from meets expectations section. Is not coherent or is contradictory to what is present. Your voice/image not present in video.	Presentation missing 1-2 criteria from meets expectations section. Inconsistent coherence or contradictory at points to what is present in the module.	Presentation covers each component of the module. Provides an explanation for pedagogical and formatting approaches. Provides explanation why each activity fits the standard and grade level. Discuss how each assignment is equitable to meet the needs of all learners. Addresses specific pedagogical decisions made based on lessons learned through the cooperating teacher interview. Presentation is 7-10 minutes in length.

Appendix B

Format for Peer Evaluation

Once all modules are finished, you will choose 2 “lessons” to complete as the student. As you work through the module, watching the video and completing the activity, you should take notes as a teacher while completing work as the student. You are being asked to wear two hats, because your feedback as both are equally relevant in this situation.

1. At the top of your document, give your name, the name of the lesson and person who created it.
2. Your feedback should use complete sentences and you do not need to include the questions. Think about what you would appreciate knowing about your own lesson and give that feedback to your peers. The evaluation should be no less than 1 typed page, single-spaced and address the following points:
 - a. ease in which the lesson was explained as well as completion
 - b. points of success – what went really well?
 - c. points of change – what suggestions do you have for making aspects of the lesson better? what didn’t work?
 - d. feedback relating to accommodations
 - e. general feedback on what you learned and the completed assessment created for the module
3. You will then, upon completion, email a copy of this paper to the lesson creator.
4. Post your review and completed assignment (from the module you selected) to the appropriate dropbox in coursedden, Learning Activity 9.
5. Repeat Steps 1-4 for your additional reviews.