Using Teacher Moments During the COVID-19 Pivot

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Teacher Moments is an open source resource for teacher educators to create and use practice-based simulations in teacher education. Teacher Moments may be used to create digital clinical simulations (DCS) which are defined as opportunities for improvisational interaction with scripted character(s). During the COVID-19 crisis, we implemented an equity-based simulation created by a teacher educator. Results demonstrate the utility of the system for surfacing student perspectives which, in turn, provides opportunities for deeper discussion and reflection.

The spread of the coronavirus disease (COVID-19) in early 2020 has forced K-12 institutions around the world to quickly pivot from in-person to remote teaching and learning. This change is likely to have an unduly negative impact on our most vulnerable students, including young people with disabilities, from disenfranchised racial and ethnic groups, and those from poverty-impacted families who disproportionately lack access to reliable Internet and digital devices, and may be less likely to have parents who can actively support their learning at home (Reich et al., 2020). As the current pandemic exposes existing equity challenges and surfaces new ones, K-12 teacher preparation must have a parallel shift. In this study we report on the use of an existing online platform called Teacher Moments. Teacher Mo-

ments is a web-based environment that provides pre and in-service teachers' opportunities to author and engage with text-based scenarios that simulate real-life teaching dilemmas related to issues of equity.

Teacher Education Simulation Environments

There are a variety of approaches to using simulations in teacher education from simulated conversations through role-play in the classroom (Kilgour, Reynaud, Northcote, & Shields, 2015) to digital approaches that can become as complex as products like Mursion which use virtual reality (Hudson, Voytecki, & Zhang, 2018; Peterson-Ahmad, Pemberton, & Hovey, 2018). We distinguish Teacher Moments as an open source, online authoring platform for digital clinical simulations (DCS) which are defined as opportunities for improvisational interaction with scripted character(s). Participants interact through text and audio with the online system. Teacher moments simulations follow a simple linear path meaning all participants go through the same set of interactions in the same sequential order. While this positions the story of the simulation as lower in terms of complexity it is a strength in that it makes authoring the simulation similarly straightforward (Hillaire et al., 2020).

Simulations authored in Teacher Moments[1] provide teacher candidates with opportunities to practice predictable high-stakes interactions in a low-stakes setting. The simulations provide pre-service teachers the opportunity to think through and respond to situations they may encounter in the classroom, and therefore, develop a deeper knowledge of the demands of teaching as a practice (Grossman, et al., 2009). Teacher Moments is currently supporting the COVID-19 pivot to online teaching and we used the system in a spring, 2020 pre-service teacher education class that moved from face-to-face to an online presentation in a matter of days. The scenario featured in this study was created by the first and second authors. The simulation focuses on supporting a student affected by trauma, a scenario for which teachers require practice to handle appropriately; specifically, teachers need to be prepared to identify and respond to signs of trauma in their students, in part to avoid pathologizing trauma and perpetuating class- and race-driven oppressions (Dutro, 2017). Addressing issues of childhood trauma is high stakes as they are linked with neurocognitive impacts including memory and processing issues as well as interfering with a child's ability to self-regulate (Zilberstein, 2013).

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[1]   Teacher Moments project description - https://tsl.mit.edu/project/teacher-moments

Process

Teacher Moments is both an authoring and a simulation environment, teacher educators can set-up accounts within the system that allow them to author a scenario (Figure 1); or they can select an existing scenario with which their pre-service students can engage (Figure 2). In this report, we describe the process of working with an existing scenario. Scenarios are provided textually and they are designed to first provide the classroom *context* in which the simulated interactions unfold, participants are then asked to *anticipate* potential interactions and situations that might arise as a result of the context. Next participants enter the simulation and *enact* their own responses by recording an audio answer in the system (Figure 3). Then participants *reflect* on the experience. After these activities, students engage in a research survey, and finally they reply to a series of questions that are posed as a "debrief" of the experience (Figure 4).
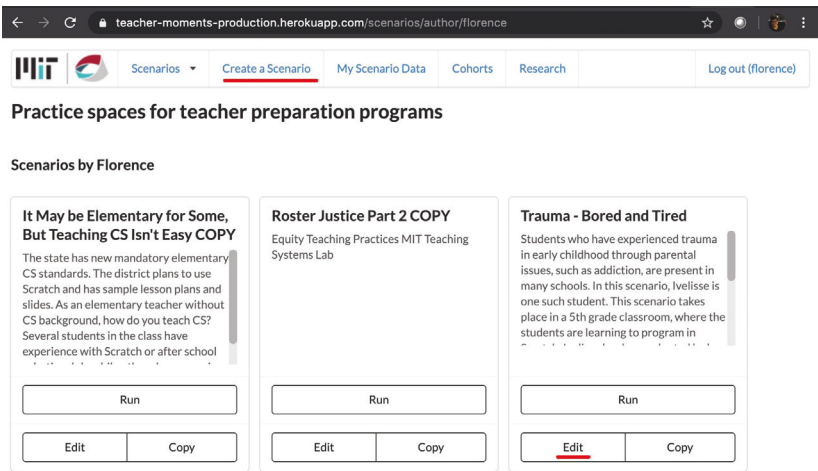

Figure 1. Teacher Moments' Authoring Interface Splash Page.
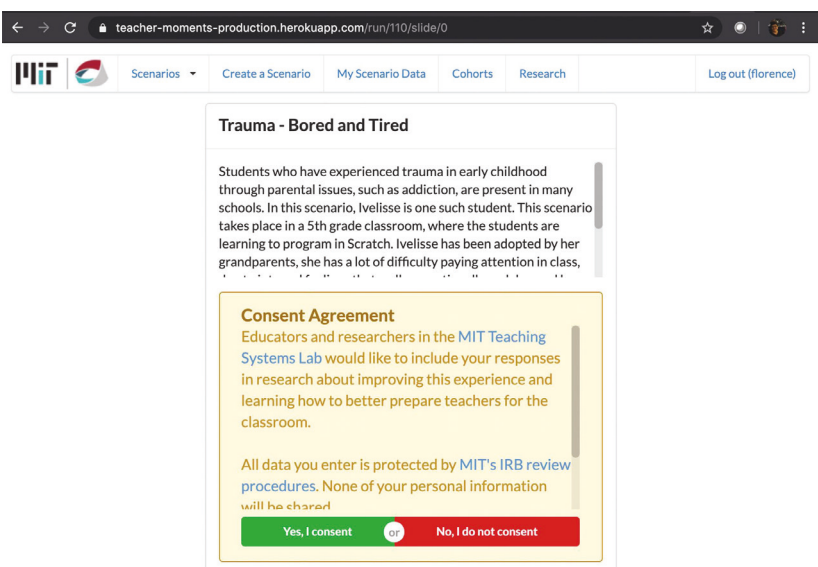
Figure 2. Teacher Moments Selected Scenario Start Page.

An important affordance of the system is that the audio answers students record are automatically transcribed and the teacher educator is able to access participant answers immediately. This functionality allows the teacher educator to scaffold a discussion based on participant answers, and in particular their debrief replies. Breaking decisions down as designed in the debrief section will help a teacher educator evaluate the underlying assumptions of participants' action (Robinson et al., 2018). This, in turn, supports facilitated equity discussions. In this way, the simulation offers a personalized learning experience for each student that may then be shared with others, such that challenges the students faced in developing a reply to the situation presented in the *enact* pages can be collaboratively discussed by the other participants and knowledgeably addressed by the teacher educator.

Figure 3. An Enact Screen in the Teacher Moments System.

Figure 4. Teacher Moments' Simulation Debrief Form.

Recently, 12 teacher educators authored Teacher Moments simulations for use in their classrooms (Hillaire et al., 2020). We authored "Trauma - Bored and Tired," in which the user practices managing a classroom containing a student affected by trauma. This simulation focuses on the experiences of two pairs of fifth grade students: Ivelisse and Naomi; Jason and Sean. These students are learning to use the computational animation program, Scratch, in their English Language Arts class. Users of the simulation are informed in the context pages that Ivelisse suffers from post-traumatic stress disorder due to early childhood trauma. In the simulation, the participants are provided with scenarios unfolding with both pairs of students and they are asked how they would respond to the various situations of the two pairs. One of the scenarios includes Ivelisse putting her head down on her desk and disengaging from the activity.

Our research questions are as follows: RQ1: To what extent do participants respond to Ivelisse when she puts her head on the desk? RQ2: What reasons do participants use to determine to whom they should respond? We piloted the "Trauma - Bored and Tired" simulation in a service learning graduate course that focused on teaching computational thinking to middle school students in an after school setting using robotics and other computational manipulatives. There were seven students enrolled in the course. The simulation was scheduled for the 8th week of the course, by that time, the course had been moved online by the instructor due to the COVID-19 stay-at-home guidance. Six out of seven participants (n=6) completed the scenario of which three (n=3) answered the debrief questions. The scenario takes between 45 – 60 minutes to complete and can easily be implemented during a regular teacher education class period.

Results

To answer our first research question, we present responses to the third Enact prompt. In this prompt, Ivelisse has laid her head on the desk, disengaging from the activity, and Sean has wandered away from Jason to chat with other students. The participants were asked which group they would speak to first, and then what they would say to that pair. Five of the six participants indicated they would speak to Naomi and Ivelisse first. In Table 1 we present the transcribed response of three of the six participants, due to space limitations. As can be seen in the responses, each participant has a different perspective on the students and the classroom situation.

Table 1

Participant (N=6) Responses to Enact Prompt 3 -
Ivelisse Puts Her Head on the Desk

Participant	Address	Response
3	Jason & Sean	um I think I would go over to um [PAUSE] Sean and ask him to go over to his seat to show me their program and [PAUSE] and just maybe explain it to me [PAUSE] and [PAUSE] so than obviously, Jason will be working on his own activity and I would say to them oh are you both already finished with your activity and he says ya I'll just ask him okay would you go on and show it to me please and then I would say okay so who did what part what did you do together that kind of idea and then if Jason says oh I did all the programming I'd say and Sean did you understand what you were doing um and then maybe get him to explain a part of it and then if I find out he doesn't understand I'll explain to Jason you know what Jason the reason we're trying to work in pairs [PAUSE] we're not having you just be the only one programming is like I said at the beginning when I spoke to you, Sean would be able to learn so yeah you might know more you have more experience with Scratch that's great thanks you can show Sean what to do um [PAUSE] that's what I would say
5	Ivelisse & Naomi	you know what I'm going to quickly talk to Ivelisse and Naomi here [PAUSE] because… I can see Ivelisse putting her arms on the table…because … she has completed her tasks [PAUSE] and she has no other tasks anymore because Naomi is building the program and [PAUSE] she [PAUSE] she doesn't understand the concept of laptop and all that possibly and so…that explains her posture and then I go to that pair and … I would talk to [PAUSE] Naomi directly and then I'm going to say can you… read aloud as you are programming on Scratch so [PAUSE] um [PAUSE] Ivelisse can understand what's happening you know [PAUSE] I understand this is a complex task because [PAUSE] um [PAUSE] Naomi is doing a task that involves …[PAUSE] converting [PAUSE] elements [PAUSE] from a human level into a computer level and then she is in that phase of [PAUSE] converting material in her mind right now [PAUSE] and its [PAUSE] preoccupied in the sense that juices are already flowing in her mind and it is like really tight [PAUSE] so she's busy she's involved she's focused in whatever she's doing [PAUSE] and [PAUSE] because of that she was unable to communicate [PAUSE] or talk at least to Ivelisse and so Ivelisse [PAUSE] has that push her which totally makes sense a very human thing to do but now I go to Naomi and ask her hey can you just… narrate as you [PAUSE] drag drop each of these quote blocks on to the canvas [PAUSE] Scratch web site and then I'm going to ask Ivelisse to [PAUSE] listen to her and when she listens to her I'm probably going to stay there for just a few minutes because I know Jason and Sean are already engaged in the activity even though they're not together at this moment [PAUSE] they are with other people that's totally fine but they are into whatever they're doing [PAUSE] but um I'm always trying to attend to a student that is… about to get into boredom you know I'm trying to get them back into the activity make them focus again. I would ask Naomi again to quickly narrate what's what she's doing and then have Ivelisse look at it and then…if it also permits I don't know I'm going to switch places and have Ivelisse look at the computer [PAUSE] in a sense do the programming and [PAUSE] since she's not as computer savvy as Naomi is I'll still do it but I'd have Ivelisse do the mouse movements and all that [PAUSE] while Naomi is dictating what to do [PAUSE] you know [PAUSE] Naomi says move this um so now you move this here, can you do it [PAUSE] and Ivelisse drags drops that into place and then she says oh you did it I'm going to be right behind them I will really appreciate what they did to get there I think that's going to add up um to build some confidence and to give some confidence to Ivelisse that she can also do it [PAUSE] which is a big deal for me
6	Ivelisse & Naomi	sorry [PAUSE] sorry I really don't know how to figure out this situation [PAUSE] what I think I will [PAUSE] care about is Ivelisse [PAUSE] because um of her um health situation [PAUSE] so I will care about her emotional feel [PAUSE] her emotional feeling [PAUSE] otherwise, I really don't know sorry

To answer our second research question, we present the debrief responses (Table 2). Three participants completed the three debrief questions (detailed in figure 4).

Table 2
Participant (N=3) Responses to Debrief Questions

Participant	Notice	Interpret	Intervene
3	There were two sets of students who probably needed attention.	I tried to see which situation was more of a priority.	I tried to deal with the pair I thought needed immediate attention, and which could afford to wait a minute or two.
5	That this really involves deep-thinking	I looked at the simulation very personally. I did not want to make the child sad in any manner and so I really put thought into understanding the situation.	Several times, actually. I spoke to the girl pair several times - by appreciating each of their work, sitting with them and working along with them, and by spending more time with them.
6	Some situations are very complex and challenging for inexperienced teachers	I really struggle with and don't know how to respond to some situations in this system.	Try to provide the equal environment for every student.

The goal of the simulation work is to help pre-service teachers practice how they would handle equity-related situations that might arise in their classrooms. In this simulation, the students had the chance to think about how to work with a Latina student who suffers from PTSD. As can be seen through the debrief data, some students were at a loss for how to respond, while others sought to work with students by appreciating their work and working more closely with them. Interestingly, one student remarked that they would like to create an equal environment for students. This last response would be a very important one to follow up on - especially as regards the distinction between treating people equally (giving all students the same thing), versus treating them equitably (giving each student what they need) (Espinoza, 2007). This is a perfect example of how debrief questions can break down decisions to support conversations about equity in the classroom (Robinson et al., 2018).

Implications and Future Research

Teacher Moments simulations provide concrete opportunities for teacher candidates to think deeply about teaching practice. As can be seen in the tables, participant responses reveal student perspectives in unique ways. Because each student has the chance to work through the simulation on their own, both the student and the teacher can reflect on the state of a given students' knowledge and confidence in a given simulation. These simulative experiences are powerful teaching and learning aids that can improve teacher education and the pre-service teacher's learning experience. This is especially true for discussing challenging issues related to equity and diversity

in the classroom. Participant anticipate, enact, and reflect responses coupled with their debrief replies, create a strong picture of participant thinking. Making this thinking visible provides the teacher educator the opportunity to support students in developing as teachers.

Future research will continue to focus on how the system can support pre-service teacher learning through simulating improvisational responses to real world classroom scenarios. We are particularly interested in how the system can be used to meaningfully support discussions of diversity and equity in teaching and public education. For example, what sorts of anticipate, enact, and reflect prompts stimulate participant thinking about issues of race that may arise in a teaching situation? These discussions are particularly important for addressing historical wrongs that continue to reverberate today, as well as for creating classroom environments that honor and reflect the diverse backgrounds of today's K12 public education students.

Teacher educators interested in authoring context- and content-relevant simulations to help teacher candidates prepare for challenges related to COVID-19 and/or other classroom challenges can benefit from using Teacher Moments. The Teacher Moments project page[2] provides authoring and facilitation guidelines with templates, scaffolds, and supports (see Figure 5) to get started authoring (see Figure 6) for both face-to-face and remote instruction.
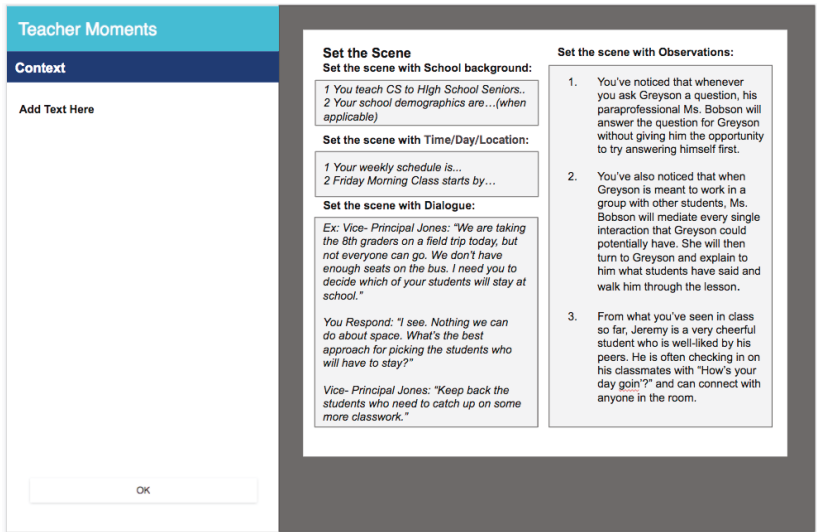

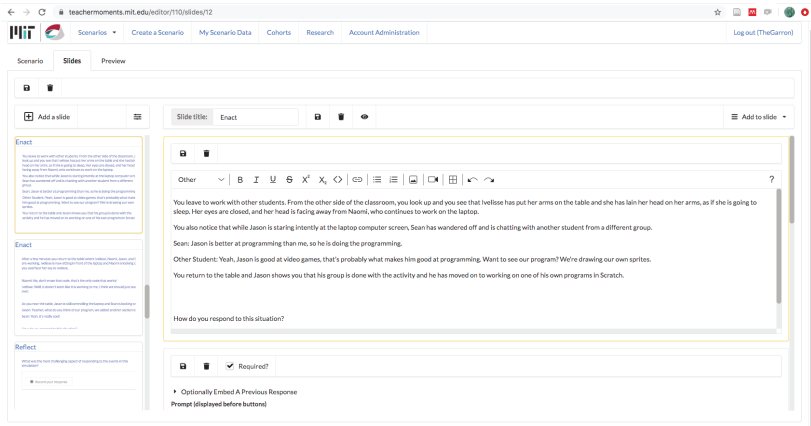**Figure 5.** Example of Teacher Moments Authoring Supports.

Figure 6. Example of Teacher Moments Authoring Interface.

References

Dutro, E. (2017) Let's start with heartbreak: The perilous potential of trauma in literacy. *Language Arts, 94*(5), 326-337.

Espinoza, M. (2009). Solving the equity-equality conceptual dilemma: a new model for analysis of the educational process. *Educational Research, 49*(4), 343-363, DOI 10.1080/00131880701717198.

Grossman, P., Compton, C., Igra, D., Ronfeldt, M., Shahan, E., & Williamson, P.W. (2009). Teaching practice: A cross-professional perspective. *Teachers College Record, 111*(9), 2055-2100.

Hillaire, G., Larke, L., & Reich, J. (2020). Digital storytelling through authoring simulations with teacher moments. *Society for Information Technology & Teacher Education International Conference*, 1736–1745. https://www.learntechlib.org/p/215950/

Hudson, M. E., Voytecki, K. S., & Zhang, G. (2018). Mixed-reality teaching experiences improve preservice special education students' perceptions of their ability to manage a classroom. *Journal of Virtual Worlds Research, 11*(2), 1–16.

Kilgour, P. W., Reynaud, D., Northcote, M. T., & Shields, M. (2015). Role-playing as a tool to facilitate learning, self reflection and social awareness in teacher education. *International Journal of Innovative Interdisciplinary Research, 2*(2), 8–20. Retrieved from http://www.auamii.com/jiir/Vol-02/issue04/2Kilgour.pdf

Peterson-Ahmad, M. B., Pemberton, J., & Hovey, K. A. (2018). Virtual learning environments for teacher preparation. *Kappa Delta Pi Record, 54*(4), 165–169. https://doi.org/10.1080/00228958.2018.1515544

Reich, J., Buttimer, C.J., Fang, A., Hillaire, G., Hirsch, K., Larke, L., Littenberg-Tobias, J., Madoff Moiussapour, R., Napier, A., Thompson, M., & Slama, R. (2020). Remote learning guidance from state education agencies during the COVID-19 pandemic: a first look. Retrieved from osf.io/k6zxy/.

Robinson, K., Jahanian, K., & Reich, J. (2018). Using Online Practice Spaces to Investigate Challenges in Enacting Principles of Equitable Computer Science Teaching. *SIGCSE '18: Proceedings of the 49th ACM Technical Symposium on Computer Science Education*, 882–887. https://doi.org/10.1145/3159450.3159503

Zilberstein, K. (2013). Neurocognitive considerations in the treatment of attachment and complex trauma in children. *Clinical Child Psychology and Psychiatry, 19*(3), 336-354. https://doi.org/10.1177/1359104513486998

Author Note