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Technology as Technocracy: Educators' Conscientious Use of Technology for Authentic Family Engagement

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Pre-service and in-service teachers nationwide are asking the following questions: Could we have been more prepared? COVID-19 has made public and transparent the digital inequalities of today's schools, particularly for culturally and linguistically diverse (i.e., CLD) students and their families. How can technology be used in a proactive way regardless of context to identify and document both the technological needs and assets of students and their families beyond the question of who is or is not connected? This chapter encourages educators to shift their current technological pedagogical practices by exploring possible solutions that pull-in family biographies rather than follow prescribed virtual platforms and learning programs. Adopting a Freirean perspective, this chapter posits that pre-service teachers as well as in-service teachers should view the use of technology as a tool that serves as the equalizer between home and school if used in ways that are agentive and transformational.

Keywords: technology, family engagement, COVID-19, culturally and linguistically diverse, equity, teacher preparation programs.

INTRODUCTION

Nationally, schools have tended to assume that technology is the answer to reaching and teaching students amid the Covid-19 crisis, regardless of students' socioeconomic status, culture, home language, and grade level. Equally unexpected, has been the emergent reality that most pre-service teachers as well as in-service teachers are ill-prepared to: (a) proactively manage the transition from face-to-face to online instruction; (b) convert to curricula and instruction technologically suited to that transition (see CAEP and ISTE standards); and (c) develop alternate, especially formative assessments for the converted instruction of all students who should be participating. Especially vulnerable to this lack of readiness are culturally and linguistically diverse (CLD) populations, particularly English learners (EL), whose caregivers may not have the resources, skills, or educational experiences that are assumed by the school system in managing the crisis. This qualitative research project examined pre-service teachers' as well as in-service teachers' self-reported preparedness for such a crisis using a Freirian (1968) theoretical lens emphasizing critical consciousness, humanism, engagement, and collaboration.

INNOVATION

It has become evident that teacher preparation programs and professional development efforts are in dire need of a paradigm shift (Barr & Tagg, 1995). Our efforts toward preparing pre-service teachers and supporting in-service teachers

in the utilization of technology should be designed to embrace a learning paradigm deeply rooted in equity and inclusion. It is imperative that educators know how to create authentic relationships with the families they serve in order to equate equity with access when using technology (Herrera, Porter, & Barko-Alva, 2020). A formulaic approach to the use of technology in the classroom has never worked for vulnerable populations and certainly not in the crisis we find ourselves. Our efforts and preliminary data have indicated that we must be reflective on how to use technology through a conscientious lens (Freire, 1968) in order to move beyond our self-imposed pedagogical assumptions and limitations.

Using a thematic analysis (Braun & Clarke, 2006), these overarching themes have been identified in response to the authors' efforts to create equitable and sustainable practices that support students, families, pre-service and in-service teachers. Preliminary data were derived from 32 virtual professional development sessions and ongoing multilingual tutoring consultations serving approximately 15 families. Both initiatives were designed to increase the ongoing dialogue of conscientious pedagogy (Freire, 1968) as teachers transitioned to an online learning platform and homework packets.

With the best of intentions, challenges of limited access for the effective utilization of technology was identified across the nation, administrators and teachers' only recourse was to prepare pencil and paper packets of activities in order to ensure the most basic level of participation. Technology as defined by school districts was limited to tablets and computers. Few of these districts moved beyond technocratic one-size fits all strategies in order to broaden the possibilities of how technology could be defined when exploring at-home learning.

During the implementation of professional development sessions, it quickly became apparent that one-size fits all strategies failed to account for the diversity of the populations served in classrooms across the country. The discourse surrounding digital equity has shifted over the years. It is not so much about being connected, rather it is about the inequalities that exist for connected users (DiMaggio & Hargittai, 2001; Talaei & Noroozi, 2019; Vakil, 2018; Warschaur, 2006). In response, committees of literacy coaches, administrators and teachers came together to quickly prepare continuous learning activities for students in homes where technology was not accessible. Unintentionally, the learning of CLD students was relegated to rote memorization and non-cognitively demanding exercises. Additionally, no thought was given to families in the process of acquiring English. If students were not identified as ELs, there was no consideration for families' linguistic backgrounds; therefore, monolingual learning packets widened the equity gap by creating new challenges.

As COVID-19 and instructional responses became the norm, a faculty member and pre-service teachers entered into critical conversations that foster deeper understanding of how the sociocultural and linguistic needs of CLD families and students must be addressed during this time. As such, one of the authors created a *critical space* wherein multilingual pre-service teachers were able to ignite their own consciousness by reflecting on how to move beyond colonized or hegemonic notions of technology in order to transform learning practices that are equitable for all learners and families.

When CLD students and families were sent home with learning packets designed using language that was unfamiliar, a faculty member raised the consciousness of multilingual pre-service teachers by inviting them to become participatory agents in making content accessible to families. Through previously established community connections, pre-service teachers and a faculty member were able to identify what technology CLD families had access to. It became apparent that smartphones were their primary technological tool in order to access the internet and receive school information. CLD families would take pictures of specific pages, found in the learning packets, that were unclear (i.e., place value, number lines, fractions, homophones, making predictions and summarizing) to send to the tutor (i.e., multilingual pre-service teachers and one faculty member). The tutors, using the pictures sent by parents, worked to scaffold the academic activities for parents. Once parents understood the academic demands, they were able to teach the concepts to their children. Each tutor set up weekly office hours and parents called in, sent pictures, and worked with the tutor on reading, science, and math activities. When the learning packet required manipulatives or technology not found at home, the tutors would make every effort to identify available tools families already possessed in order to negotiate learning. This type of assistance could not have happened with a particular platform or program rather the conscientious effort to connect with families and individualize what type of support was needed while redefining what is considered a technological learning tool, (i.e., the smartphone), and how it was used to enhance interactional learning.

RESULTS

As we reach into the future, the intersectionality of teacher preparation, professional development efforts, the use of technology, and family engagement must be reconceptualized. Based on preliminary results, pre-service teachers and

in-service teachers became culturally and linguistically responsive to the dynamics of families, reconstructed the use of technology, and identified the type of technology families had access to in order to provide sustainable learning practices. These educators pointed out that this connection goes beyond creating lesson plans and instructional materials. Their support was anchored in the assets CLD families featured. The use of technology, while important, became the medium through which our pre-service teachers were able to identify what resources families were already negotiating. From PD sessions to tutoring sessions, we have learned the following:

Table 1
Preparing and Supporting Pre-service Teachers and In-service teachers

Issues	Implementation
Know your families	<p>Educators should be able to identify which households have access to internet connection, nature and number of electronic devices.</p> <p>Educators should be able to create and have access to a biography driven as well as (Herrera, 2016) a family technology profile.</p> <p>Educators should be aware of current and up-to-date family information (i.e., current phone numbers and emails). Schools may not always have access to a viable contact number.</p>
Technology Literacy	<p>Educators should be aware that they need a holistic understanding of how parents are able to support their children when using technology. Throughout the year, multilingual workshops should have been set-up to scaffold and increase families' technology literacy.</p>
Negotiating at-home-support	<p>Educators should be able to identify resources they bring to their teacher preparation program and classrooms (i.e., multilingualism).</p>

IMPLICATIONS

The nation's schools have responded to this current crisis in a technocratic manner of deferring to apps and links and/or creating packets for those without technology. The school system has missed the point thereby furthering fossilized practices (Herrera et al., 2020). Pathways for transformation must be anchored in the needs of the populations we serve. Yet, as COVID-19 has revealed, the disconnect between schools and families is vast. It is time to recognize that the educational system has, despite good intentions, failed families, particularly CLD families and vulnerable populations, in creating authentic, humble, and equitable partnerships. Much like the phrase *digital divide*, *family engagement* is a term that is often over-simplified and not given adequate attention in the development of each child. Professional development efforts should be purposely tailored to support in-service teachers as they address these inequities.

Teacher preparation programs have approached family engagement in a fragmented manner, at best. Often pre-service teachers' first exposure to families is when they are preparing for their first Back-to-School night or parent-teacher conference. This needs to change. The heightened consciousness and prioritization of family engagement must begin with pre-service teacher preparation programs. Due to this crisis and the times in which we live, online learning will only continue to grow. For these pre-service teachers, who participated in the consultations, a shift occurred that provided more intention in how relationships must navigate the usage of technology. Further, it challenged traditional notions of what is technology beyond a computer or tablet emphasizing the possibilities of a phone. Yet, the phone wasn't used to simply gain access to apps or programs. Rather, this piece of "technology" became the conduit for communication, collaboration and meaningful learning.

FUTURE RESEARCH

The preliminary findings of this research study indicate that the current crisis has exposed uncritically analyzed assumptions about students, technology, and families. In particular, future research should not assume that face-to-face to online conversions are solely an issue of transcending the digital divide. Additionally, it should be expanded to include families, especially those that are CLD, and deeper explorations into factors that aid those families in face-to-face to online transitions and maximizing the latter. Research involving teachers, on the other hand, should explore promising ways to better prepare pre-service teachers and in-service teachers for closer and more purposive collaborations with CLD families, especially amid crisis, such as COVID-19.

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