

# Tapping Into the Potential of Student Engagement With Universal Design for Learning in Pedagogical Courses

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## Abstract

This paper outlines instructional strategies and course projects that demonstrate multiple means of engagement, representation, action, and expression, the essential principles of the Universal Design for Learning (UDL). The authors first share specific practices and examples related to each of the essential principles of UDL. Next, three projects are presented to demonstrate how these principles, along with technological tools, can be infused into pedagogical courses to prepare preservice elementary teachers in inclusive, online learning environments. This paper explores how teaching strategies and online tools were chosen with purpose, to promote positive learning outcomes and to prepare preservice teachers for the blended and distance learning environments they will likely encounter as they enter into the teaching profession.

## Keywords

universal design for learning, student engagement, technology, teacher preparation integration

The Covid-19 pandemic forced both classroom teachers and teacher educators to reimagine teaching and learning within a matter of days in March of 2020, prompting an immediate shift to online learning with little to no preparation. In the spring and summer of 2020, the authors spent time attending numerous professional development workshops on the topics of technological integration and best practices for online learning in teacher education. As teacher educators at a state university in central New York, the authors teach pedagogical methods courses focused on theory and teaching to support

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preservice teachers' development and practice. In the Fall 2020 semester, as everyone continued to live with uncertainty, it became clear that the tangible tools teachers usually rely on such as index cards, laminated maps and globes, primary sources in protector-sheets, and physical math manipulatives, would no longer be an option. The switch to online teaching poses a daily challenge for teacher educators (DiYanni & Borst, 2020). Educators must rethink their teaching techniques from engaging students in purposeful online discussion to integrating technology in ways that enrich the learning experiences. College students also face a variety of challenges in switching to online learning, such as staying motivated, finding a quiet place to complete online work, balancing home, work, and family responsibilities, facing uncertainty of where to get help with a course, and feeling too physically or emotionally unwell to fully participate (Markowitz, 2020).

As college students report their struggle to stay engaged in web-based courses (Markowitz, 2020; Zydney et al., 2019), the significance of using resources and tools to keep students engaged and motivated for online learning becomes clear. Teacher educators are aware of the power they possess to make pedagogical decisions to alleviate student struggles and to keep students engaged and motivated for online learning. Equipped with timely and ongoing professional development experiences, the authors, both teacher educators, found themselves ready to adapt to blended/hybrid/distance learning modes with competence to provide quality instruction in pedagogical courses. With preparation, research, and challenges in mind, the authors decided to utilize the Universal Design for Learning (UDL) framework, which has been shown to keep learners engaged and motivated (Ableser & Moore, 2018; Haley-Mize, 2018; Navarro et. al., 2016; Katz, 2013; Courey et. al. 2012; Edyburn, 2010; King-Sears, 2009). Universal Design for Learning (UDL) is an approach to instruction that has been shown to promote access, participation, and progress for all learners (CAST, 2018; King-Sears, 2009; Kortering et al., 2008; Jimenez et al., 2007; Rose & Meyer, 2002).

This paper outlines specific strategies and technological tools incorporated into preservice teachers' elementary social studies, mathematics, and field placement methods courses to provide multiple means of engagement, representation, action, and expression for students in an inclusive web-based learning community. These strategies and tools were chosen with purpose, to promote positive learning outcomes and to prepare these students for the blended and distance learning environments they would encounter as they entered the profession as student teachers. This paper demonstrates the value of infusing principles of UDL into blended learning environments for preservice teachers, with a special focus on diverse pedagogical strategies and developing teaching competence.

The outline of this paper is as follows. First, the authors share specific practices and examples to respond to each of the essential principles of the UDL framework. Second, three projects are presented in detail to explain how we infuse these essential UDL principles in our respective courses.

## Universal Design for Learning Principles

### *UDL Principle 1: Multiple Engagement*

The first principle of the Universal Design for Learning assumes that learners' affective domain represents a crucial element to learning and that learners differ markedly in the ways in which they can be engaged or motivated to learn. Katz (2013) reminds teachers that inclusion has two essential components: academic inclusion and social inclusion. The social inclusion in learning requires educators to take into consideration individual learners' cultural backgrounds, personal interests, prior knowledge

and experiences, preference for learning styles, and emotions and feelings of learners at different points in instruction (Koster et al., 2009; Specht & Young, 2010). The switch to web-based teaching poses added challenges for educators including accommodating diverse needs of online learners, making personal connections, and facilitating participation and interaction, while remaining fully aware of additional stressors our students may be facing (Wotherspoon, 2002; Zins & Elias, 2006). In this section, the authors share specific strategies to navigate these challenges, with particular attention on building classroom community, promoting interaction to enhance learning, and increasing academic motivation, aspiration, and achievement.

As the Fall semester of 2020 unfolded, the authors made significant pedagogical changes to engage students in their hybrid/blended/distance learning courses. First, they reminded themselves of the importance of humanity in teaching as a way to build classroom community. Zakrzewski (2015) suggests restoring humanity to the classroom by incorporating mindfulness, building a sense of connection, being compassionate and flexible with due dates, teaching about growth mindset, and acknowledging student strengths. In pedagogical courses, thoughtfully-selected images, video clips, and music/songs were infused into daily instruction to share a sense of mindfulness and positivity. Multiple breaks during instructional time for learners were scheduled so that students could take their eyes off the screen, apply dry-eye-relief drops, have some water, and stretch while listening to relaxing music or watching inspirational videos. Although these changes were small, they promoted self-regulation, utilizing the power of calm, positive emotions to motivate students to learn (CAST, 2018).

In the 21st century, all learners must be able to communicate and collaborate effectively within a community, however, socialization and effective communication have faced many challenges since the start of the pandemic. To build a strong and effective community of learners, the authors created introductory FlipGrid videos and invited preservice teachers to introduce themselves by posting videos and by creating slideshows including written text and images to showcase their identities, interests, and goals. They described hobbies, such as hiking, cooking, and traveling, showed images of their children, siblings, and pets, and revealed their worries and anxieties about the upcoming semester. These videos also encouraged interaction among the students, as they watched and commented on each other's videos and got to know one another. The authors made themselves available during office hours and beyond, encouraging students to meet to review assignments, ask questions, and share ideas. The authors used GroupMe, a mobile group messaging app, to quickly and easily respond to learners' requests, questions, and concerns. Benefits of this group chat also included the ability to share reminders, positive messages, relevant articles, and social media posts related to the material being explored in class. Fostering a sense of community helped sustain student engagement and created a support group where students relied on the instructors as well as each other to tackle academic and personal challenges throughout the semester.

The authors made deliberate and elongated efforts in their pedagogical courses to invite preservice teachers to share their emotions, concerns, and suggestions for their shared learning community. For example, the authors incorporated check-ins during the semester by polling students on Zoom and by using surveys on Google Forms or Survey Monkey. During one check-in, students responded to "I wish my professor knew..." with comments such as "I get nervous when talking in front of anyone but children. I usually shake or stutter which can be a bit embarrassing", "I have a learning disability and it takes me longer to do different assignments", and "I am a very hands-on learner!". These examples foster engagement by encouraging self-reflection and by providing an active way for students to seek emotional or academic support if needed.

Learning goes beyond community-building; learning tasks must be intrinsically interesting, meaningful, and challenging to engage learners. To equip preservice teachers with content and pedagogical knowledge, the authors utilized multiple devices to keep learners “hooked” for online participation. For example, the lesson, entitled “Macaroni for Social Justice”, started with a video clip featuring one of the authors shopping for macaroni in a local grocery store and inviting learners to figure out what macaroni had anything to do with unequal distribution of wealth in the United States (Greenstein, 2019). After the instructor dramatically poured out thousands of macaroni pieces onto a table and asked learners to estimate how many pieces of macaroni there were, students explored that these pieces represent the total sum of wealth of the United States. With the instructor using a Nearpod presentation, students learned to integrate math concepts into a discussion of unequal distribution of wealth and economic injustice. This activity, and others like it, allowed for active participation and exploration which invites students to be engaged by information and activities that are relevant and valuable to their student interests and goals (CAST, 2018).

To meet diverse interests and learning needs of students, the authors provided varied online resources for students to explore areas of interest and to build on prior knowledge and experiences. On Blackboard, the authors created resource folders and labeled them by topic, theme, and concept, so that it was easy for preservice teachers to find the resources they needed for planning lessons to build both content knowledge as well as in-person and online teaching strategies. The resources included relevant age-appropriate children’s books, primary sources, maps, virtual math manipulatives, teaching videos, and online resources. For example, as certain significant holidays approached (Constitution Day, Columbus Day/Indigenous People’s Day, and Thanksgiving Day), the authors provided a collection of resources to use in planning, instruction, and assessment of student learning to support preservice teachers.

An overall goal of incorporating humanity and compassion into teaching was to demonstrate care about students’ frustration and stress, and to acknowledge the challenges of taking part in online courses during a world-wide pandemic. By utilizing these activities and by continually demonstrating care about students’ well-being and mental health, the authors built strong connections with students and strived to help them reach their full potential for academic success. The authors modeled for preservice teachers that good teaching always starts with relationships. The relationship between the instructor and students, and the relationships among students, can either facilitate or hinder learning. To promote interaction that strengthens relationships, the authors provided options for students to work collaboratively to complete course assignments. Research shows that students in both in-person and online learning environments are more successful when they are active participants and they learn better when they interact with their peers (Bresnick, 2020; Bresnick, 2020; Katz et al., 2012; McGuire et al., 2006).

These strategies and examples demonstrate how the authors attended to students’ individual needs as learners to build community, accommodate preferences for learning, and facilitate engagement and participation.

### *UDL Principle 2: Multiple Representations*

The second principle assumes that learners differ in how they perceive and comprehend information that is presented to them. All learners use their senses with different levels of strengths, weaknesses, and preferences. Some learners might have sensory disabilities (e.g., nearsightedness, blindness, or

deafness); learning disabilities (e.g., dyslexia); language or cultural differences (CAST, 2018). Such differences require different ways of approaching content knowledge in math, social studies, and other subject areas. As instructors, the authors modeled this principle for preservice teachers by presenting information through visual or auditory means, apart from using printed text.

During the Fall semester of 2020, the authors redesigned their courses and supported students' learning by sharing materials and links to google documents on Blackboard, which preservice teachers had been familiar with before they took the web-based courses. Blackboard becomes an entry point where they access the link to join our class on Zoom or Webex, where the authors organize all course materials including a syllabus written as a google document, saved also as a word document, and weekly instructional materials in folders. To help students get familiar with the syllabus, the authors invited them on a Syllabus Scavenger Hunt using Google Forms. Links to audio and video recordings using Vocaroo and Flipgrid were also uploaded on Blackboard as alternative ways to communicate with preservice teachers about performance expectations and assignment instructions. We created screencasts using Screencast-o-matic to offer self-paced, asynchronous content and to create video descriptions of major course assignments. Screencast-o-matic has the added benefit of providing closed captioning for viewers. Closed captioning can be valuable for all students by helping with focus and recall of content, and by assisting students who may be in a noisy learning environment or who may have a hearing impairment (Dello Stritto & Linder, 2017). Students reported watching these videos to review important content and assignment requirements. These alternative ways of representing important content supported learners who needed additional time to process information, those who had difficulty remembering information, or those who simply needed an additional method for revisiting content outside of regular class time.

For the methods courses, the authors used textbooks and supplementary reading assignments in a variety of formats, such as printed texts, online articles, and audio-visual versions of content. In social studies, students read "Teaching What Really Happened" by James Loewen (2018) and selected chapters from Howard Zinn's "A people's History of the United States" online. These readings were supplemented by primary sources on the websites of Library of Congress, National Archives and Records Administration, and Reading like a Historian to help preservice teachers understand "sourcing", "contextualization", and "corroboration", which are the key historical reasoning concepts in historiography. In a field placement course, online articles, videos, webinars, and podcasts were utilized often. One example is the use of the website Cult of Pedagogy, which offers the same content in different formats. Students can choose to listen to a podcast or read an accompanying blog post since both convey the same content.

The pandemic made it out of the question for preservice teachers to access their practicum in local elementary schools. Virtual fieldwork became one of the ways preservice teachers could access classroom teaching, collaborate with host teachers, and work with elementary students. To respond to this change, the authors located teaching videos on ATLAS, GoReact, and other websites and posted links to such videos on Blackboard. ATLAS is a video library that provides authentic cases of accomplished teaching practice across a variety of classroom settings. The authors provided templates and graphic organizers for preservice teachers to take notes and document their reflections as they watched these videos. Templates, graphic organizers, and concept maps can support learners' comprehension with the transfer and generalization of new learning by helping students make connections within and among concepts (CAST, 2018).

Preservice teachers also used focused observation protocols around topics such as student engagement and teacher questioning. These tools offered opportunities to observe and reflect on how

teachers interact with children at elementary grade levels, how teachers plan specific learning experiences for concept development in different content areas, and how teachers integrate multiple subjects in project-based learning projects. For example, focusing on the types of questions teachers ask helped preservice teachers understand the power of inquiry and the potential of promoting learners' high order thinking skills. Follow-up discussions allowed students to reflect on what they learned and to consider how they might apply these ideas in their future classrooms.

Activities such as these provide different representations to organize and scaffold information and can benefit students in generalizing and transferring information to new contexts (CAST, 2018). This section highlights the different opportunities for students to access and comprehend content by providing multiple means of representation.

### *UDL Principle 3: Multiple Means of Actions and Expressions*

The third principle shares the basic assumption that learners differ in the ways that they can navigate a learning environment and express their learning. For example, individual learners with significant movement impairments (e.g., cerebral palsy) cannot attend an outdoor "unequal tug-of-war" game to teach about the American Revolution, but they could be observers to share their ideas after the game. Individuals who are English language learners or learners with other language barriers often approach and express learning in different ways. Over the years, the authors have found some preservice teachers who were able to express themselves competently in written text but not in speech, and vice versa. Therefore, multiple means of action and expression provide learners opportunities and ways to express their understandings and misunderstandings. One basic tenet of teaching and learning is that there is not one means of action and expression that would work for all learners.

Early in the Fall semester of 2020, preservice teachers took their first professional journey as they explored *Social Studies and the Young Learner* (SSYL), a journal published quarterly by the National Council for the Social Studies. As preservice teachers are required to demonstrate their competence in professionalism, it is never too early to bring them into the profession by starting to read and hopefully write articles published in SSYL. These articles showcase evidence-based practices using the Inquiry Arc in elementary social studies (Grant, 2013). Using a Google doc, preservice teachers shared their selected SSYL articles, practicing referencing journal articles using APA style and accessing more SSYL articles shared by peers. As they rewrote the inquiry lessons, they became more familiar with the four dimensions of the Inquiry Arc: developing questions for inquiries; applying disciplinary tools and concepts; evaluating evidence and sources; and making conclusions and taking actions (Grant, 2013). The themes in these articles ranged from project-based learning of kindergarteners as they identified ways to reduce food wastes in their communities to sixth graders challenging racial stereotypes in children's literature. A shared Google document became a rich collection of evidence-based practices that inform their learning and teaching. The use of interactive web tools allows students to compose and share ideas while reaching learning goals, which can aid learner's expression and communication skills (CAST, 2018).

Reading and reflecting are essential components of any college course. Instructors often solely rely on students' written responses to express learning. In the method courses, the authors provided preservice teachers with choice in how they could demonstrate learning. For example, they could record their responses to guiding questions using audio or video formats instead of a written response. In one activity, students were asked to reflect on their own math identity considering their strengths,

challenges, and past experiences. They had the option of creating a visual web drawing or diagram, a Google slides presentation, a FlipGrid video recording, or an audio recording to craft their response. In another activity, preservice teachers had the option to select one of the chapters from the textbook to plan a mini-lesson, recording their teaching using Nearpod, PowerPoint Online, Google Slides, Flipgrid, Screencast-o-matic, Pear Deck, etc. While teaching demos are not equivalent to the experience of in-person teaching and interacting with elementary school students, such experiences enabled the students to practice teaching and represent their learning of content and pedagogical strategies. They shared read-aloud versions of children's books using YouTube playlists and the "Draw-It" functions on Nearpod to engage learners to analyze photos, maps, political cartoons, and drawings, and posted thoughtful questions to encourage learners to make inferences using internet-based primary sources. They created asynchronous lessons to engage elementary students in math content and to address topics of social justice.

Incorporating multiple forms of media (text, speech, drawings, illustrations, video, math manipulatives) and interactive web tools using Nearpod and Google, students can access a wide range of options for expression and communication (CAST, 2018). Supporting multiple means of action and expression allowed preservice teachers to show their knowledge, teaching strategies, and creativity, and helped to prepare them for the various learning environments they will likely encounter moving forward.

### **Course Projects that Infuse the Three UDL Principles**

Engaging learners is one of the touchstones in a successful learning experience. Engaging learners in hybrid/blended/distance learning poses extra challenges. Unlike in-person classrooms, teachers can no longer observe students throughout the entire class time using non-verbal cues and check-ins to make sure they attentively stay engaged in class. Nor can teachers approximate physical presence closer to the learners to bring them back to task. The Fall semester in 2020 also witnessed a significant amount of absences due to quarantine resulting from positive tests of the virus and the unprecedented mental stress level. When WiFi connections are not always reliable and ideal, turning off videos during web-based classes made it even harder to connect with students.

Without engaging preservice teachers in the hybrid/blended/distance learning classes, the authors simply could not model effective pedagogical strategies. Such an understanding motivated them to invest time, money, and energy in professional development during the summer in 2020. They subscribed to student engagement platforms such as Nearpod, Screencast-O-Matic, Pear Deck, and Flipgrid. Using web conferencing tools, Zoom and/or Webex, they infused these platforms along with interactive whiteboards, shared Google Docs, YouTube videos, GoReact, and ATLAS to tap into the vast potential of online teaching and learning. In the following sections, the authors share three projects to explain their approaches in engaging preservice teachers, abiding by the three UDL principles: multiple means of engagement, representation, and action and expression. One of the projects is from an Elementary Math Methods course and two from an Elementary Social Studies Methods course. Table 1 outlines how these course projects infuse UDL principles.

Table 1  
*Course Projects Using UDL Principles*

Course Projects	Universal Design for Learning (UDL) Principles		
	Multiple Means of Engagements	Multiple Means of Representation	Multiple Means of Expression and Action
Project 1: Using Children's Literature to Develop Mathematics Understanding and Build Social Consciousness	Options for <b>individual work</b> (exploration of content and creation of One-Pager) and <b>partner work</b> (math read aloud lesson) included.  Incorporated <b>learner interest and choice</b> to aid engagement using webinar and articles to explore based on interest.  <b>Safe, low-risk learning environment</b> where students listened and responded to peer work to interact and make connections to content.	<b>Content presented</b> using <b>varied formats</b> : presentation, read aloud modeling, video, and text.  <b>Synchronous and Asynchronous</b> lectures provided.  <b>Samples of One-Pagers and Math Read Alouds</b> provided with text and illustrations.	One-Pager acted as <b>graphic organizer</b> to demonstrate learning with images, text, and drawings.  <b>Multiple formats for students to demonstrate knowledge</b> (organizer, video explanation, written lesson plan, recorded read aloud and demonstrations).  <b>Options for student response</b> included both written and recorded feedback.
Project 2: Using Flipgrid for Diverse Racial Representation of Characters in Children's Books	Pre-recorded assignment instructions on Flipgrid demonstrating <b>expectations</b> .  Students <b>individually choose</b> two children's books (two at least) as "mirror" or "window" books.  Students in <b>collaborative teams</b> share their selections.	Sharing <b>Twitter #WeNeedDiverseBooks</b> in class.  Various videos & examples shared with students to <b>personalize and contextualize content</b> and <b>recruit interest</b> among learners.  Students are provided with <b>choice and autonomy</b> in course assignments.	Students <b>share choices of books</b> as mirrors and windows on Flipgrid and using Google docs, watch peer videos and provide feedback.  Project <b>increases authenticity and relevance</b> of using children's books in teaching elementary students.

Project 3: Using Online Advertisements and Google Docs to Promote Media Literacy and Gender Justice	Students solve <b>puzzle</b> presented in a <b>video</b> to reflect upon implicit gender bias.	Instructors model the <b>analysis</b> of an International Women’s Day advertisement.	Students’ individual <b>analysis in a Graphic Organizer</b> in a google doc
	Use “Can You Solve the Riddle?” one of the <b>International Women’s Day Advertisements</b> as an example for ad analysis.	Examples of student-created International Women’s Day ads ( <b>digital flyers, posters, PowerPoint, and iMovie or movie trailer</b> ) reflect <b>clear, authentic</b> purpose.	<b>In a team or individually</b> , students created an International Women’s Day Advertisement and use a <b>google doc</b> to share their work.
	Students individually choose an International Women’s Day ad to analyze using <b>Media Literacy</b> concepts and questions.		Students participate in a class <b>reflective discussion</b> on their learning in this project, list themes their ads address, and describe the relevance of this project to elementary students.

### *Project 1: Using Children’s Literature to Develop Mathematics Understanding and Build Social Consciousness*

In this project, the authors describe how preservice teachers successfully integrated mathematics and literacy using children’s literature to develop understanding of mathematical concepts. Picture books can be used to enrich mathematics curriculum, motivating students to learn, stimulating mathematical thinking, promoting math discussion, and helping students to visualize, represent, and connect to different math ideas (Columba et al., 2009; Marston et al., 2013). Picture books create real-world contexts for math content, can be used to reach students who have math anxiety or feel they are weak at math, and can create rich opportunities for different math activities and discussion (Van de Walle et al., 2018).

During class time, preservice teachers explored how to use picture books to engage learners, to reach students who have math anxiety, to connect to math concepts, and to use meaningful contexts in stories to initiate problem solving. As a class, preservice teachers discussed using these books not only to teach math, but to help students make global connections, to spark discussion around difficult topics, and to showcase diverse individuals doing mathematics. One such book explored in class was *Remainder of One* (Pinczes, 2002). This story was used to illustrate multiplication and division concepts using arrays and to analyze the concept of remainder. The story was also used to initiate conversation around bullying and being an upstander (someone who stands up to a bully becoming an ally).

To learn more about using picture books to teach math, preservice teachers watched a one-hour webinar demonstrating the value of utilizing children's literature to connect to and understand the larger world. The webinar presenter modeled using children's literature to enhance social awareness while teaching math concepts and skills. Preservice teachers were provided a variety of online resources for connecting mathematics and children's literature. These were purposefully chosen to offer the choice of exploring different books and topics that might be of interest to the preservice teachers, while including ideas related to inclusion and representation. Preservice teachers used the visual representation of a "one-pager" to demonstrate their learning. In a one-pager, students share their ideas and important take-aways on a single piece of paper. Students demonstrated their thinking with images, text, and drawings in creative ways. According to Potash (2016), "as students create one-pagers, the information they put down becomes more memorable to them as they mix images and information...one-pagers provide variety, a way for them to share what they've learned that goes beyond the usual written options". Preservice teachers showcased their one-pagers on FlipGrid, explaining why they chose to include certain images and ideas as an alternative way to show what they learned. They then responded to each other's FlipGrid posts, providing positive feedback, and making connections to their peers' work. As a culminating activity, the preservice teachers collaborated with partners to design, plan, and teach a math read-aloud incorporating mathematical content and a real-world connection. They recorded their work on FlipGrid or Screencast-O-Matic as an asynchronous lesson to be shared with students attending school remotely.

This project aimed to offer choice in the tools and supports available to students as well as to incorporate more contemporary and flexible media tools for students to express their learning and ideas. This enabled students to utilize their interests, prior knowledge, and experiences to learn about using picture books to teach mathematics content and to incorporate awareness of issues in the larger world. The content was presented through text and video, and orally (by presentation and discussion). Learners had the opportunity to express their ideas and to show their learning in different ways, such as writing, drawing, presenting, responding, and teaching. The visual diagram of the one-pager helped students to organize important ideas and online tools enabled students to make connections and interact with their peers, listening to and responding to each other in a self-paced, low-risk learning environment. Learners' interests and interaction aided engagement in the content, and incorporating choice, various formats to present content, and online tools allowed students to represent and express their learning in different ways.

### *Project 2: Using Flipgrid for Diverse Racial Representation of Characters in Children's Books*

In class, the authors shared hashtag #WeNeedDiverseBooks on Twitter, three YouTube videos respectively featuring Dr. Rudine Sims Bishop, the emeritus professor at Ohio University, Matt de la Pina, an award-winning Hispanic American author, and Grace Lin, the Asian American author, with a clear emphasis on the importance of increasing multiracial, multicultural, and multi-linguistic representations in the classroom. Bishop (1990) advocate for reading to children "mirror" books that they could see themselves and reflect their own identities, and "window" books that they could see new things in a wider and new world. A link to a Flipgrid recording was uploaded to Blackboard to accompany the written assignment instruction for a required course assignment featuring the instructor sharing two children's books, "*Where the Mountain Meets the Moon*" and "*The Great Migration*:"

*Journey to the North*". The first one was presented as a "mirror" book that reflects the ethnic and cultural identities of the instructor. The second one served as a "window" that expanded the readers' vision to understand the experiences of six million African Americans as they left the racially segregated South from 1910 to 1970s for the opportunities of freedom and economic justice in the North, West, and Northwest of the United States. Showcasing these examples on Flipgrid enabled the instructor to personalize and contextualize the content related to this topic. Teachers can recruit interest among learners by tapping into what the learner might find relevant, valuable, and meaningful (CAST, 2018). Using Flipgrid, preservice teachers recorded themselves sharing books of their choice, one as a "mirror" and the other a "window". They embedded a link to their recordings on Flipgrid and described the title, author(s), and illustrator(s) of the book with an audio "read-aloud" version of the book on YouTube, images of the book cover with themes of the book. Their recordings on Flipgrid utilizing metaphors such as "windows" and "mirrors" demonstrated their understanding of cultural identity, privilege, and power in terms of differences in race, gender, class, ethnicity, religion, sexual orientation, and abilities/disabilities (Bishop, 1990).

The process of completing this assignment enables preservice teachers to experience the power of their individual choices and autonomy in course assignments. The mixed use of Blackboard and online tools encouraged authenticity and collaboration among preservice teachers, who took the initiative to view multiple recordings of their peers on Flipgrid. Their comments were the invaluable artifacts and data for instructors to assess learners' creativity and critical thinking. The shared google drive, Flipgrid response and feedback, and the grade center on Blackboard jointly motivated diverse learners to bring out their best learning in the most inclusive and constructive environment. As preservice teachers accessed all titles of children's books, they recognized that their personal choices indicated a lack of diverse representation of racial groups. One preservice teacher wrote in her reading responses that this project "*reveals my racial blindness, power, and privileges.*" Another preservice teacher shared, "*Readers must see themselves in the stories they read. Reading about diverse characters to children brings more fun to my classroom.*" They also reflected upon the process of meeting the goal of recruiting the interests of learners by optimizing individual choice, increasing authenticity and relevance of using children's books in teaching elementary students. Preservice teachers' pedagogical decisions around planning, instructing, and assessing students' learning became an example for their understanding of utilizing multiple actions and expressions.

### *Project 3: Using Online Advertisements and Google Docs to Promote Media Literacy and Gender Justice*

This project features a social studies project that utilized carefully selected advertisements around the world to celebrate International Women's Day (IWD) in the past three years. Instructors devised this project with a firm belief that preservice teachers today live in a digital world where they are exposed to a variety of media forms every day, as do their students in the elementary schools. Even very young children can recognize patterns in the media, notably those that are concerned with women's position and status of marginalized groups in a society. However, children are not usually educated to be critical about such perceptions of social media. Teacher educators can recognize and understand the impact of the technology-based media on preservice teachers' understanding of the world and the use of media to develop elementary students' critical thinking skills, a key 21<sup>st</sup> century education objective (NCSS, 2016).

For this project, preservice teachers examined the definition of media literacy by the National Association for Media Literacy Education (NAMLE). Media literacy is broadly defined as active inquiry and critical thinking about the messages we receive and create to develop informed, reflective, and engaged participants essential to a democratic society, and they challenge all educators with an essential question, “*How do we become critical thinkers, effective communicators, and engaged citizens in today’s world?*” (NAMLE, 2007; 2019). Incorporating media literacy as both a competence and as a teaching strategy for preservice teachers encourages critical evaluation of media information and relevant, real-world instruction for future students.

This inquiry was guided by the essential question: *How do the ads around the world celebrate International Women’s Day and help promote gender equity?* Preservice teachers completed an analysis chart, responding to “Key Questions When Analyzing Media Messages” recommended by “Project Look Sharp”, an independent project that works collaboratively with the National Association for Media Literacy Education (Project Look Sharp, 2020). They also conducted the following series of activities, including 1) viewing and analyzing IWD ads to identify messages to examine gender issues in multiple global settings; 2) creating an IWD ad for 2021; and 3) reflecting upon the process of their media message construction, understanding and promotion of gender justice.

Using a Nearpod-based lesson, instructors played an IWD ad, “*Can You Solve the Riddle?*” and asked preservice teachers to analyze it in breakout rooms using a downloadable analysis chart, which also acts as a graphic organizer, to analyze any media messages and capture key media literacy concepts. Preservice teachers analyzed in groups then shared their responses to the key questions with the whole group. Next, using the Nearpod polling function, the instructor learned that while most preservice teachers were aware of March as the Women’s History Month, very few of them knew that March 8 is the International Women’s Day celebrated around the world. To develop global awareness, preservice teachers used a shared google doc to access, select, and analyze one IWD ad among the 89 ads on the website of the Creative Advertising Community (Creative Advertising Community, 2020). This website provides preservice teachers a variety of IWD ads to explore gender issues around the world. Questions on the analysis graphic organizer help them identify media messages in the ads designed by multiple businesses from various countries to establish the images of their companies through promoting gender justice for the annual International Women’s Day. The digital experience of preservice teachers concluded with their creation of an IWD ad, our project-based learning task. Preservice teachers have the option of using PowerPoint, Prezi, Nearpod, iMovie, Google Slides, and Pear Deck to create an IWD ad and share the link to their media products in the same google doc.

As preservice teachers reflected on the process and viewed each other’s work, they demonstrated understanding and advocacy for gender justice. Preservice teachers identified the following themes: gender inequality in the workplace, negative language about and images of women, gender bias, violence on women, women’s role and power, beauty and self-esteem, women in sports, women in STEM, women’s accomplishment, women’s rights, and women’s fight for gender equity and social justice.

One way to promote engagement is to design activities so that learning outcomes are authentic, communicate to real audiences, and reflect a clear purpose (CAST, 2018). Findings from the project revealed that preservice teachers’ recognition of the need to understand the intricacies of media and how it can empower, mislead, or even harm users and audiences. Preservice teachers recognized the value of using media, advertisements in particular, to help children understand the gender issues and to fight for equity and social justice for women. Such interactive, authentic, and meaningful teaching practices spark engagement and help future teachers develop informed and reflective intellectual habits

to teach elementary students who are essential to a democratic society in our increasingly diverse, interconnected, complex, and digital world.

In this project, we meet the goal of engaging learners by modeling teaching using multimedia images and promoting media literacy, providing resources, and encouraging learners to optimize adequate challenges for different learners.

## Conclusion

As we navigate these challenging and unique times, the decisions made by educators impact student learning and engagement. The preparation of our future teachers depends on our commitment to incorporating platforms and tools to successfully transfer content and teaching strategies to an online environment. We have shared how we incorporated UDL practices into an integrative curriculum across math, literacy, and social studies, providing specific strategies and examples to illustrate the benefits of UDL principles in hybrid learning environments. Our goal was to promote positive learning outcomes for preservice teachers and to develop preservice teachers' pedagogical strategies while accounting for the diverse learning needs of students (Popescu & Badea, 2020; Markowitz, 2020; Sadaf et al., 2016; Dwyer, 2016). This paper discusses both the integration of technological tools, while keeping learners engaged and preparing them to incorporate effective and inclusive teaching practices in elementary classrooms. We do not take lightly the dignity of the calling as teacher educators. At this critical moment in human history, we continue to model for "digital-native" preservice teachers the purposeful use of internet-based platforms and online learning tools to incorporate various pedagogical strategies, with a special focus on issues of equitable representation and social justice.

Teaching should always be an experience filled with love, humanity, and hope. As John Dewey stated (1897), "*it is impossible to prepare the child for the civilization that will be twenty years from now. Hence it is impossible to prepare the child for any precise set of conditions*" (Dewey, 1897)". An enduring lesson of this pandemic is that the best we can do is to give students command of their own powers, to help them develop full and ready use of all their capacities, including the multiple means of engagement, representation, and action and expression in learning. With or without Covid-19, we cannot return to "normal". The integration of new technologies into instruction and assessment that focus on student engagement and learning leads us, both teacher educators and preservice teachers, to a hopeful future of education that is delivered to all learners in a variety of formats and modes. The collective digital journey of the instructors and the learners is not to be reversed.

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