



Embedding Mindfulness in Teacher Preparation: A Pathway to Understanding Universal Design for Learning and Differentiated Instruction

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ABSTRACT

Background: Teacher candidates in higher education face significant levels of stress, burnout, and emotional exhaustion. Despite growing evidence linking educator wellness to instructional quality, self-care and mindfulness practices remain largely absent from teacher preparation curricula. This study examined how Mindful Moments—brief, structured mindfulness practices—function as both a wellness intervention and a pedagogical bridge for Universal Design for Learning (UDL) and Differentiated Instruction (DI).

Methods: A qualitative action research design was employed across three California teacher preparation programs from 2018 to 2024. Data were collected over six years using exit ticket reflections, Padlet responses, course evaluations, midterm review sessions, and classroom observations. An inductive thematic analysis approach was applied during a second cycle of analysis that examined the existing dataset through the specific lens of inclusive pedagogical development.

Results: Three themes emerged from the data: (1) increased self-awareness and bias recognition, (2) improved emotional regulation and focus, and (3) enhanced ability to design inclusive and differentiated lessons. Findings demonstrated that Mindful Moments evolved from a stress-reduction tool into a catalyst for inclusive instructional thinking, with teacher candidates spontaneously applying mindfulness insights to their understanding of UDL and DI frameworks.

Conclusions: Mindfulness functions as both a self-care strategy and a pedagogical framework within teacher preparation. When intentionally embedded in coursework, Mindful Moments support educator resilience and deepen candidates' capacity to design equitable learning environments. Recommendations include integrating Mindful Moments into all teacher preparation courses, providing faculty training on facilitation, and embedding self-care competencies into Teaching Performance Expectations as a professional standard.

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Introduction

Integrating mindfulness into teacher preparation offers a vital pathway for bridging educator wellness with inclusive instructional design. Mindfulness serves as both a cognitive and emotional foundation for developing the self-awareness educators need to recognize and respond to the diverse needs of all learners. Through mindful reflection, teacher candidates learn to suspend implicit biases and preconceived notions that may otherwise restrict equitable access to learning. In this way, mindfulness becomes a catalyst for embodying the principles of Universal Design for Learning (UDL) and Differentiated Instruction (DI)—frameworks that promote learner variability, engagement, and agency [1,2].

The conceptual foundation of this approach mirrors the familiar

airplane safety reminder to secure one's own oxygen mask before assisting others. Similarly, educators must cultivate mindfulness and emotional regulation before they can effectively support students. When teacher candidates are attuned to their own thoughts and biases, they are better equipped to create inclusive learning environments that honor diversity and foster equity. Grounded in UDL and DI, these environments ensure that all learners—regardless of background or ability—have authentic opportunities to succeed [3].

"Mindful Moments", brief reflective practices embedded within coursework, were developed to address teacher candidate burnout and cognitive overload. These intentional pauses help candidates ground themselves, regulate emotions, and reconnect with learning. Over time, such practices not only

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reduce stress but also model how mindfulness can serve as a pedagogical tool to identify and remove learning barriers [4]. Equitable teaching begins with a mindful educator who is present, reflective, and responsive to every learner's needs. This study documents how Mindful Moments evolved from a wellness intervention into a pedagogical bridge connecting self-awareness, inclusive theory, and classroom practice.

Literature Review

A focused literature review examined four interconnected themes—mindfulness in educator preparation, burnout syndrome, teacher shortages, and Teaching Performance Expectations (TPEs)—to establish the theoretical and contextual rationale for integrating Mindful Moments as both a wellness practice and a pedagogical bridge for UDL and DI.

Mindfulness

Mindfulness—rooted in Buddhist traditions and popularized in Western psychology [5,6]—is defined as the practice of cultivating present-moment awareness without judgment. Within teacher preparation, mindfulness serves a dual purpose: promoting educator wellness and strengthening instructional readiness. Honsky et al. found that brief mindfulness sessions in university courses significantly improved students' self-regulation and focus while reducing perceived stress [4]. In this study's context, Mindful Moments functioned as brief, guided exercises designed to bridge personal grounding with professional learning, aligning naturally with the responsiveness and empathy demands of UDL and DI.

Burnout Syndrome

Teacher burnout, first conceptualized by Freudenberger [7], manifests as chronic emotional exhaustion, depersonalization, and diminished personal accomplishment [8,9]. The COVID-19 pandemic exacerbated this condition, thrusting educators into virtual environments with limited training or support [10]. Research reveals that teacher candidates—many of whom are career changers balancing work and family—face comparable psychological strain to practicing teachers [11]. Mindfulness provides a preventative framework by cultivating awareness, regulation, and compassion, reframing self-care as a professional competency rather than a personal indulgence.

Teacher Shortages

Teacher shortages in the United States continue to reflect systemic burnout and declining retention [12]. While teacher preparation programs cannot directly alter staffing ratios or systemic inequities, they can equip candidates with wellness-centered tools. Embedding Mindful Moments into program structures creates a preventative support mechanism that counteracts the early onset of burnout and, when introduced alongside UDL and DI instruction, reinforces a holistic vision of teaching that honors both educator and learner humanity.

Teaching Performance Expectations

Teacher preparation programs in California are governed by the Teaching Performance Expectations (TPEs) established by the California Commission on Teacher Credentialing [13]. These standards define credentialing competencies but omit explicit reference to self-care, mindfulness, or wellness—despite

evidence linking educator well-being to instructional quality and retention [14]. Integrating mindfulness into TPE 6: Developing as a Professional Educator would align credentialing standards with broader frameworks of culturally responsive pedagogy and social-emotional learning.

Universal Design for Learning

Universal Design for Learning (UDL), developed by CAST and grounded in neuroscience, provides a blueprint for designing instruction that accommodates learner variability through three principles: Multiple Means of Engagement, Representation, and Action & Expression [15]. Many teacher candidates perceive UDL as an additional burden rather than a liberating framework. Integrating Mindful Moments prior to UDL lessons grounds candidates in reflective awareness, helping them approach the framework as an ethical practice rather than an external requirement.

Differentiated Instruction

Differentiated Instruction (DI) operationalizes the UDL philosophy by guiding teachers in adapting content, process, product, and learning environment to meet individual needs [16]. Research underscores the alignment between DI and UDL—both emphasize flexibility, learner choice, and varied modalities [17]. Mindfulness enhances this alignment by fostering the emotional regulation and attentiveness needed to recognize when instructional adjustments are necessary.

Integrating the Triad: Mindfulness, UDL, and DI

The synthesis of Mindfulness, UDL, and DI represents a transformative paradigm for teacher preparation. Each framework contributes a vital dimension:

- **Mindfulness** cultivates the self-awareness and emotional regulation necessary for teaching with presence.
- **UDL** provides the theoretical architecture for anticipating learner variability and designing for access.
- **DI** operationalizes inclusivity through targeted instructional strategies that adapt to diverse needs.

Together, these frameworks create a holistic, sustainable model for teacher education. Mindfulness is not an addition to UDL and DI—it is the connective tissue that makes both possible in practice.

Materials and Methods

Research Design

This study represents the second cycle of a longitudinal action research inquiry extending the foundational analysis conducted by Bartholomew in 2025 [18]. Rather than drawing on a new dataset, this continuation applied a secondary analytical lens to the same six-year qualitative dataset collected across three California teacher preparation programs from 2018 to 2024. While the first study examined Mindful Moments primarily through the lens of self-care and burnout prevention, the impetus for this second cycle emerged in real time during instruction. During a Brain Dump exercise, a teacher candidate named Joy spontaneously connected her own experience of cognitive overload to the question of how her future students might feel when burdened by the same—and what that should mean for how educators design learning environments. That

single, unprompted moment of transfer represented a mindset shift: the candidate moved, without explicit instruction, from personal self-awareness to inclusive pedagogical thinking. This pattern recurred across courses and programs, prompting a deliberate re-examination of the existing data specifically coding for language related to empathy, learner variability, instructional flexibility, and inclusive thinking. This second-cycle analysis is consistent with the iterative, reflective nature of action research methodology [19].

A qualitative action research approach was selected to capture the lived experiences of teacher candidates engaging in Mindful Moments. The study incorporated technical, collaborative, and critical forms of action research to ensure findings reflected both researcher and participant perspectives. Data collection instruments included exit reflections, midterm reviews, course evaluations, classroom discussions, observations, Padlet reflections, surveys, and one-on-one advising sessions, guided by Creswell's qualitative framework [20].

Data Collection Procedures

Data collection followed the Action Research Methodology framework [19], which includes four cyclical phases: Planning, Acting, Observing, and Reflecting. Each phase involved distinct actions and deliverables, summarized in Tables 1 and 2.

Table 1: Action Research Steps.

#	Action Areas	Action Steps
1	Planning	Identifying, Informing, Organizing
2	Acting	Trialing, Collecting, Questioning
3	Observing	Analyzing, Reporting, & Sharing
4	Reflecting	Evaluating, Implementing, Revisiting

a Interaction Design Foundation and IxDF [19].

Table 2: Research Steps.

#	Action Areas	Actions Completed
1	Planning	Teacher candidates shared concerns of feeling overwhelmed, stressed, and burned out during Exit Ticket Reflections and In-Class Discussions. A teaching team discussion identified mindfulness integration as a response. The researcher created Mindful Moments as a structured solution.
2	Acting	Mindful Moments were implemented at the beginning of each class session prior to instructional delivery. Structure and duration varied to align with instructional context and participants' needs.
3	Observing	In-class observations and discussions were utilized along with Exit Ticket Reflections. Candidates provided additional feedback during Midterm Review Sessions, Course Feedback Surveys, and course evaluations.
4	Reflecting	Data were analyzed to determine continued implementation and identify practices demonstrating greatest effectiveness. Findings informed dissemination of strategies to colleagues.

Data Processing and Analysis

Data were analyzed manually using an inductive thematic

analysis approach. Data were collected across six years from both semester and quarter-based programs. Manual coding focused on identifying recurring statements, keywords, and emotional tone within participant responses. Themes emerged around stress reduction, focus enhancement, sense of belonging, and transference of mindfulness practices into professional settings. Table 3 shows the Teacher Preparation Program Models.

Table 3: Teacher Preparation Program Models.

#	Program	Type	Courses	Sessions	Candidates Per Course
1	P1	Residency Model	1	9	80–90
2	P2	Residency Model	4	6–12	50–60
3	P3	Traditional	5	14	6–40

a Type describes the program model for the Teacher Preparation Program.

Larger courses were divided into smaller sections to allow for individualized instruction and extended time for mindfulness engagement, supporting more meaningful participation and observation of immediate effects on student readiness.

Results

Results demonstrated how Mindful Moments, initially designed as a wellness intervention, evolved into a pedagogical tool for introducing and reinforcing the theoretical frameworks of UDL and DI. When Mindful Moments were intentionally aligned with course content, they not only supported teacher candidate wellness but also facilitated deeper understanding of how UDL and DI could be authentically applied within diverse instructional settings. Thematic analysis of qualitative data yielded three prominent themes.

Theme 1: Increased Self-Awareness and Bias Recognition

The first theme, increased self-awareness and bias recognition, was among the most consistently documented outcomes across all three programs. Teacher candidates repeatedly demonstrated that Mindful Moments created the reflective conditions necessary for examining their own assumptions and connecting those assumptions to their future instructional decisions. During a Differentiated Instruction module, one participant, identified as James, reflected on his results from the Harvard Implicit Association Test:

I didn't think I had biases toward students with disabilities, but my results showed a slight preference for students without disabilities. It made me wonder—what if my upbringing has shaped not just how I see myself, but also how I see my students?

Similarly, a candidate identified as Maria noted the cultural dimensions of self-reflection: "In my culture, we are taught to be humble. Talking about yourself, especially positively, can come off as arrogant. I was always told to focus on the collective, not the individual". These responses illustrate how Mindful Moments surfaced not only personal bias but culturally situated frameworks for self-perception—both of which directly shape how educators design learning environments for diverse students. The shift from self-awareness to pedagogical awareness was not instructed; it emerged organically from the reflective space that mindfulness created.

Theme 2: Improved Emotional Regulation and Focus

The second theme, improved emotional regulation and focus during instruction, reflected candidates' growing capacity to manage cognitive and emotional load before engaging in complex learning tasks. During the Brain Dump exercise, a candidate identified as Joy reflected that the activity helped her consider "how learners might feel when burdened by cognitive overload or emotional distraction"—a statement that simultaneously demonstrated emotional regulation and empathic transfer to her future students. A candidate identified as Leilani described how discarding her writing "ultimately brought an unexpected sense of freedom", while a candidate identified as Jonathan acknowledged that the same exercise intensified his anxiety as an over thinker.

Rather than treating Jonathan's response as a failure of the intervention, the class used it as evidence that learners experience the same activity differently—a live, embodied demonstration of the learner variability that UDL is designed to address. This range of responses became one of the most generative teaching moments in the dataset, revealing that emotional regulation is not a uniform outcome but a personalized process—precisely the kind of insight candidates needed to internalize before designing inclusive instruction.

Theme 3: Enhanced Ability to Design Inclusive and Differentiated Lessons

The third theme, enhanced ability to design inclusive and differentiated lessons, represented the most direct evidence of Mindful Moments functioning as a pedagogical bridge between wellness and instructional practice. As candidates developed greater self-awareness and emotional regulation through repeated mindfulness engagement, their language in exit reflections and Padlet responses shifted from personal descriptions of stress relief toward explicitly pedagogical thinking. Candidates described feeling "more open to creative solutions", "less rigid in thinking", and "better able to see how learning barriers can be reduced before instruction even begins". These were not prompts given to them; they were the words candidates reached for independently.

Importantly, this theme also surfaced in candidates' field practice. Teacher candidates began embedding short reflective breaks in their own student teaching, adapting sensory-regulation strategies for K-12 learners, and designing choice-based learning tasks that reflected UDL and DI principles. As one candidate summarized: "Mindfulness taught me how to teach with empathy. UDL and DI are just the structures that make that empathy visible". This statement encapsulates the central finding—that mindfulness does not replace inclusive

pedagogical frameworks; it activates them.

Cross-Theme Analysis

A comparative review of both study cycles underscores the transformation of Mindful Moments from a wellness strategy to a pedagogical scaffold. In the original research, mindfulness primarily functioned as a preventative measure against burnout. In this continuation, mindfulness evolved into a reflective and instructional bridge, enabling candidates to connect wellness to pedagogy. The emotional safety created by Mindful Moments contributed to a stronger sense of community, with participants describing mindfulness activities as "centering", "comforting", and "connecting", lowering affective filters and improving willingness to engage in difficult discussions about bias, equity, and access.

Discussion

Implications for Higher Education

This research extends the original study by situating Mindful Moments as both a wellness practice and a pedagogical model for inclusive instruction. The findings suggest that higher education institutions, particularly those preparing future educators, must move beyond theoretical discourse and embed mindfulness and self-care practices into the operational framework of teaching and learning. In an era of increasing teacher burnout, declining retention, and growing mental health concerns, the integration of mindfulness within coursework represents not just innovation but necessity.

Academic leadership must acknowledge that faculty and students alike cannot sustain meaningful engagement without intentional attention to wellness. Integrating Mindful Moments into coursework requires minimal resources yet yields significant outcomes in focus, empathy, and community building.

Impact on Teacher Preparation

Within teacher preparation programs, the incorporation of Mindful Moments functions as both a self-care practice and a model of UDL and DI in action. By engaging in mindfulness activities that precede instruction, teacher candidates experience firsthand how emotional readiness enhances learning engagement. Faculty who model these practices in real time demonstrate that inclusion and differentiation are not merely theoretical constructs—they are lived, embodied experiences. Through the mindful integration of these frameworks, candidates learn that self-care is not separate from instructional practice; it is what enables sustained, responsive, and equitable teaching.

Table 4: Recommendations for Practice.

#	For	Recommendations
1	Higher Education Institutions	Conduct institutional reviews of self-care practices; provide professional development on mindfulness; integrate Mindful Moments into course design; and train faculty on implementation and evaluation.
2	Teacher Preparation Programs	Embed Mindful Moments throughout coursework; train faculty on facilitation; and model UDL and DI through mindful practice.
3	Future Research	Conduct longitudinal studies on the sustained impact of mindfulness on teacher retention; develop legislation adding mindfulness competencies to Teaching Performance Expectations; and pilot statewide models for national replication.

Institutional Change and Policy Considerations

The findings underscore the urgent need for systemic transformation within higher education policy and accreditation frameworks. Teaching Performance Expectations and similar professional standards should explicitly include self-care and mindfulness competencies as essential dimensions of teacher readiness. Table 4 outlines key recommendations.

Advancing UDL, DI, and Mindfulness Integration

This study reinforces the symbiotic relationship between mindfulness, UDL, and DI. Mindfulness cultivates the presence and empathy needed to design instruction that honors variability; UDL provides the structural framework for equitable access; and DI operationalizes those principles through flexible instructional methods. By embedding mindfulness into the pedagogical core, teacher preparation programs create the conditions for authentic inclusion. The findings reveal that mindfulness is not ancillary to UDL and DI—it is the catalyst that allows these frameworks to be internalized and sustained.

Conclusion

This study affirms that mindfulness is far more than a wellness intervention—it is a pedagogical and cultural shift within teacher preparation. The integration of Mindful Moments has proven effective not only in reducing burnout and supporting educator wellness but also in transforming how teacher candidates internalize and apply inclusive teaching frameworks such as UDL and DI.

The results demonstrate that mindfulness creates the cognitive and emotional space necessary for reflective practice. Through structured moments of awareness and regulation, teacher candidates developed deeper empathy, flexibility, and responsiveness to learner variability. What began as a strategy to support teacher wellness evolved into a bridge that connects educator self-awareness with equitable instructional design.

Embedding mindfulness into program standards such as the TPEs could mark a critical step toward institutionalizing self-care as a professional responsibility. To secure the future of equitable learning, higher education must commit to modeling the very practices it espouses—creating mindful, inclusive, and sustainable spaces for both educators and learners.

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