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Introduction

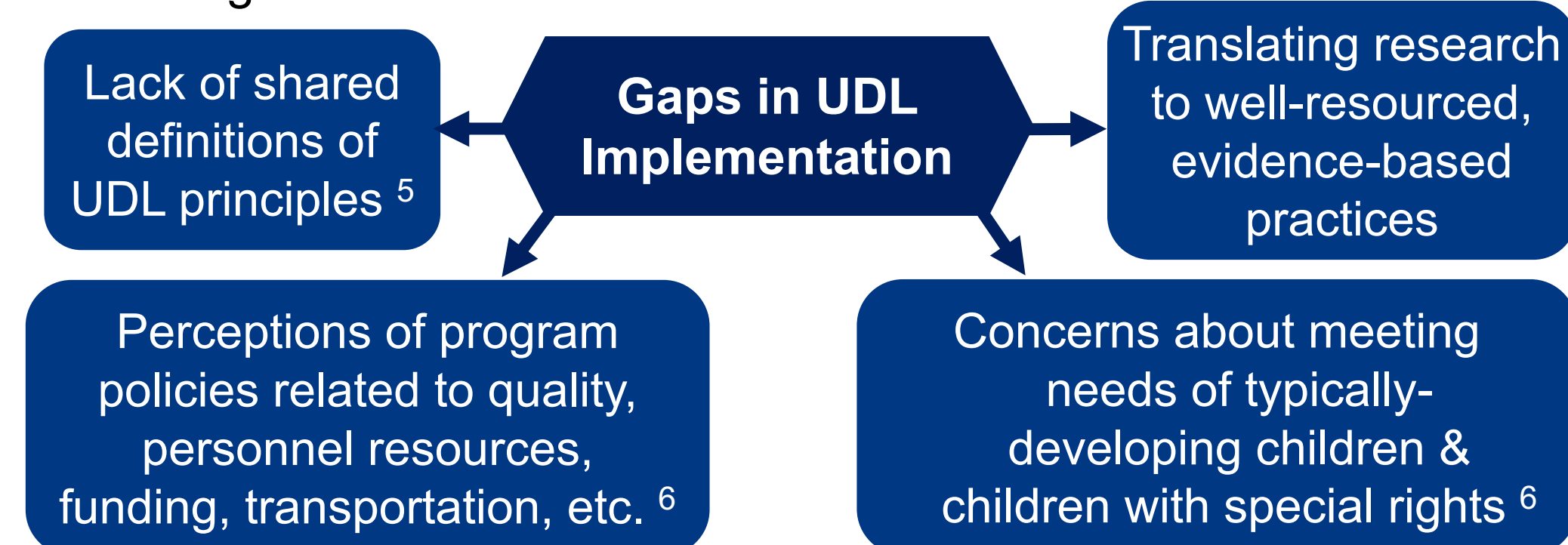


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Universal Design for Learning (UDL) is an evidence-based framework for teaching & learning that guides educators in meeting diverse needs of students.¹ All individuals, regardless of ability status, experience **improved accessibility & opportunities for participation & performance** in contexts where UDL is applied

Inclusive programming respects & honors the diversity of learners, their identities, & experiences to actively include, engage, & appropriately challenge all students^{2,3}

Universal Design for Learning & Inclusion (UDLI) extends the framework of UDL to include specific principles & practices for cultivating inclusion



Eliot-Pearson Children's School (EPCS) at Tufts University (Medford, MA): early childhood education program for children ages 2.9 - 7 years old⁴

- Participants:** Head Teachers (HT), Assistant Teachers (AT), & Eliot-Pearson (EP) Fellows across 4 classrooms

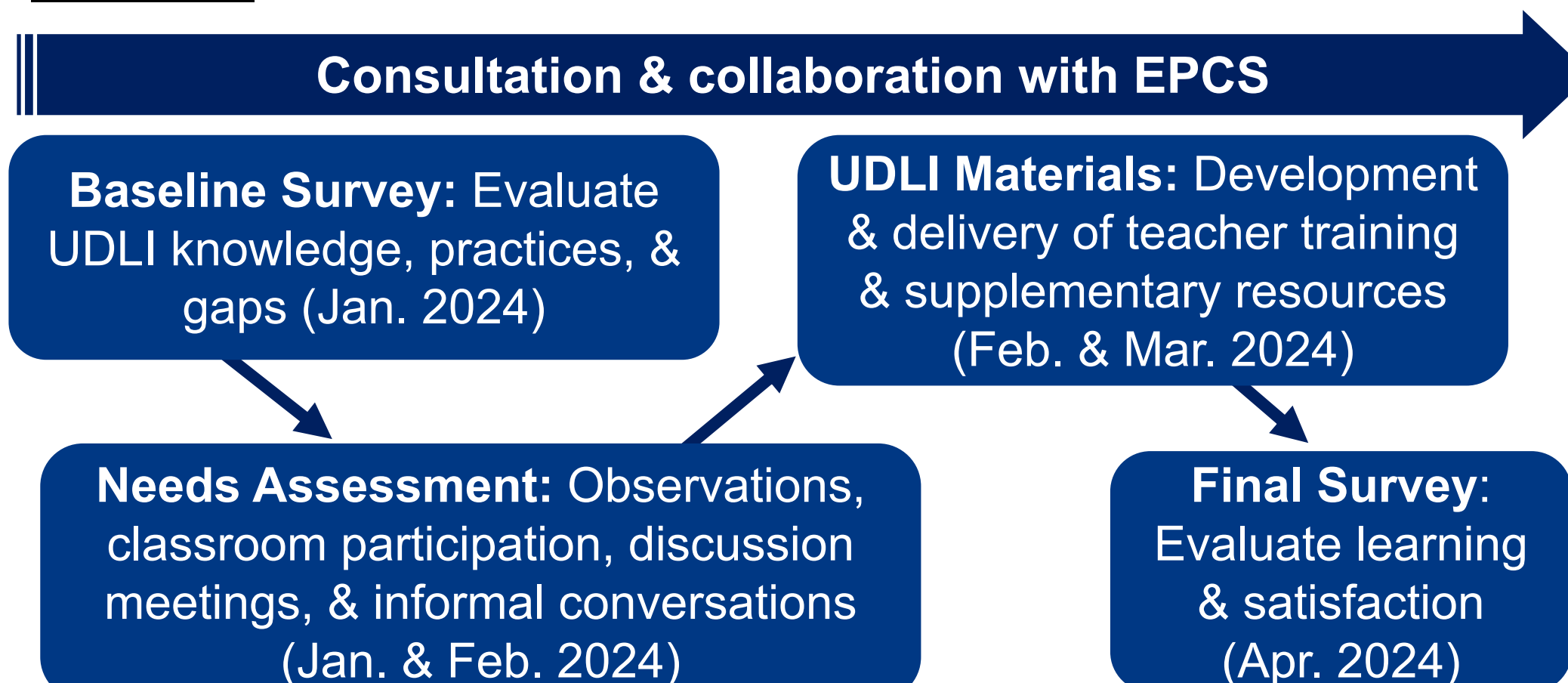
Purpose, Aims, & Methods

Purpose: Develop and deliver a training & supplementary materials based on current knowledge & implementation of UDL amongst a specific sample of EPCS teachers, ultimately supporting deeper understanding of UDL & more inclusive learning environments

Aims:

- Assess knowledge & implementation of UDL at EPCS
- Develop & deliver Teacher Training & supplementary materials to promote deeper understanding of UDL & facilitate implementation in EPCS classrooms
- Evaluate teacher learning & satisfaction with UDL materials

Methods:



Results

January 2024: Baseline survey (16 participants: 4 HT, 3 AT, 9 EP Fellows)

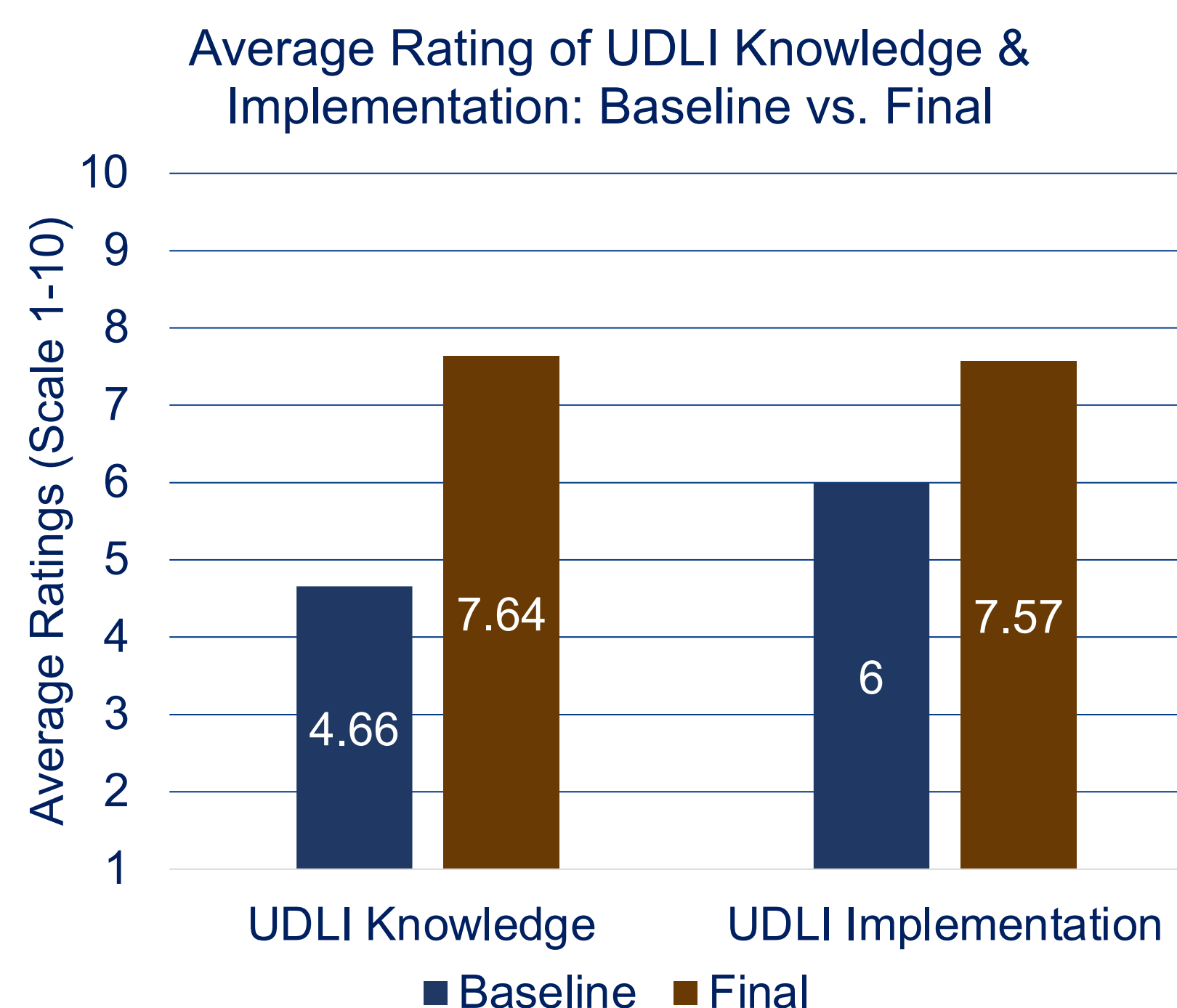
- Open-ended responses** identified perceived **gaps in knowledge & application** of UDLI principles (Engagement, Representation, Action and Expression, & Inclusion)
- Perceived barriers** to implementing UDLI principles & practices in EPCS classrooms:
 - Different levels of understanding & experience with UDLI
 - Lack of concrete knowledge
 - Time to intentionally plan UDLI in classrooms / curricula
 - Available resources
 - Supporting children in understanding differing peer needs
 - Changing classroom dynamics
- Average baseline ratings of knowledge & implementation (see figure)

March 2024: Delivery of UDLI Teacher Training & Supplementary Materials to EPCS

Deliverables	Key Features
Universal Design for Learning & Inclusion (UDLI) Teacher Training	<ul style="list-style-type: none"> 75-minute Training Session Overview of UDLI definitions & examples Images of current classroom examples Embedded choice for workshop activities Discussion opportunity
UDLI Fact Sheets	<ul style="list-style-type: none"> Overview of UDLI <ul style="list-style-type: none"> Multiple Means of Engagement Multiple Means of Representation Multiple Means of Action & Expression Inclusion Principles UDLI & Transitions 'Grown-ups' Resource & Recorded Information Session (for parents &/or guardians)
Supplementary Materials for Continued Education	<ul style="list-style-type: none"> UDLI Toolkit⁷ Supplementary resources (e.g., videos, teacher supports)

April 2024: Final, follow-up survey (14 participants: 4 HT, 3 AT, & 7 EP Fellows)

- Open-ended responses accurately identified** of current classroom examples of UDLI
- Participants **re-rated knowledge** of UDLI on a scale of 1-10 (1 = none; 10 = knowledgeable)
- Participants **re-rated implementation** of UDLI in classrooms on a scale of 1-10 (1 = uncomfortable / not confident; 10 = comfortable / confident)
 - Figure:** results of **unpaired t-test analysis** and **effect size calculations** between average ratings for knowledge & implementation at baseline & final



UDLI Knowledge: Statistically significant **increase*** from baseline ($M = 4.66, SD = 2.21$) after the training & supplementary materials ($M = 7.64, SD = 1.15$), $t(28) = 4.54, p < 0.0001$. **Large effect size** ($d = 1.69$).

UDLI Implementation: Statistically significant **increase*** from baseline ($M = 6.00, SD = 2.31$) after the training & supplementary materials ($M = 7.57, SD = 1.28$), $t(28) = 2.26, p = 0.032$. **Large effect size** ($d = 0.841$).

*Amongst participating EPCS teachers

Discussion

- Amongst this specific sample of EPCS teachers, qualitative data & open-ended responses indicated **UDLI training & supplementary materials supported understanding & implementation** of UDLI
 - Additional reported supports:** conversations with grown-ups (i.e., parents, guardians) to better understand needs of children; collaboration within & across teaching teams

UDLI Training & Supplementary Materials: Strengths

- Overview** of UDLI framework followed by **concrete examples** (e.g., EPCS classroom images)
- Opportunities for **choice** in workshop activity
- Repetition** of UDLI content (e.g., teacher training, supplementary materials, surveys) across school year
- Clear & concise **"Fact Sheets"**
- Emphasis on **mindfulness & intentionality** behind UDLI practices

UDLI Training & Supplementary Materials: Growth Areas

- Additional concrete examples
- Need for **more sharing of & conversation about** UDLI examples in classrooms to expand learning & implementation
- Exploration of **inclusion** as distinct addition to UDL framework
- Strategies for working with specific children (e.g., "children with learning differences", "children with Autism")
- Identify **action & follow-up steps** to implement UDLI

Future Directions at EPCS

- Continued implementation** of UDLI at EPCS
 - Essential to identify ways to practice **flexibility** in application of UDLI principles based on unique classroom profiles
- Applications of UDLI deliverables for **introductory training to orient new staff** (i.e., start of school year) &/or for **professional development**
 - Opportunities for new and experienced teachers to reflect on UDLI & develop **mentoring relationships** within & across teaching teams
- Further engaging **EPCS families** to foster meaningful connections between home & school environments around applications of UDLI
- Expand UDLI deliverables to focus on **inclusion**
- Future OT doctoral projects to further increase collaboration between EPCS & Tufts Department of Occupational Therapy
 - Social skills groups focused on self-regulation & social thinking

Future Directions Beyond EPCS

- Opportunities for **sharing UDLI deliverables**
- Importance of **interdisciplinary collaboration** in educational settings
 - Occupational therapy (OT) practitioners can support through **strengths-based, participation-focused approach**
- Advocacy** for OT role in assessing & implementing UDLI in classrooms (e.g., attention to environmental barriers & supports, activity analysis, etc.)

Contact & Acknowledgements

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References & Additional Materials

