



Less is More Math Professional Learning

Series: Train the Trainer (Part 4 of 4)



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Time Frame 115

Essential Question(s)

How can I intentionally incorporate movement into my math lessons to deepen students' understanding, engagement, and problem-solving skills?

How can we effectively communicate the 'why' behind movement-based math to empower our colleagues to adopt these strategies in their own classrooms?

Summary

This professional learning session is the fourth in a four-part series. In this professional learning session, participants begin shifting from the role of a classroom teacher into the role of a professional learning facilitator. Educators dive into how physical movement changed their teaching practice. They collectively look at the strategies they have participated in as learners.

Learning Goals

Standards

InTASC Model Core Teaching Standards (K-12th)

7a: The teacher individually and collaboratively selects and creates learning experiences that are appropriate for curriculum goals and content standards, and are relevant to learners.

7b: The teacher plans how to achieve each student's learning goals, choosing appropriate strategies and accommodations, resources, and materials to differentiate instruction for individuals and groups of learners.

8a: The teacher uses appropriate strategies and resources to adapt instruction to the needs of individuals and groups of learners.

8e: The teacher provides multiple models and representations of concepts and skills with opportunities for learners to demonstrate their knowledge through a variety of products and performances.

10b: The teacher works with other school professionals to plan and jointly facilitate learning on how to meet diverse needs of learners.

10f: The teacher engages in professional learning, contributes to the knowledge and skill of others, and works collaboratively to advance professional practice

Attachments

- [30 Second Activity Slides—Train the Trainer.pptx](#)
- [Components of Andragogy—Train the Trainer.docx](#)
- [Components of Andragogy—Train the Trainer.pdf](#)
- [Less is More Math Professional Learning Series- Implementation \(Part 1 of 4\).pdf](#)
- [Less is More Math Professional Learning Series- Implementation \(Part 2 of 4\).pdf](#)
- [Less is More Math Professional Learning Series- Peer Coaching \(Part 3 of 4\).pdf](#)
- [Presentation Slides—Train the Trainer.pptx](#)

Materials

- Presentation Slides (attached)
- Components of Andragogy handout (attached; one per participant)
- Less is More: Implementation handout (attached; see preparation note)
- Less is More: Analyzing Implementation handout (attached; see preparation note)
- Less is More: Peer Coaching handout (attached; see preparation note)
- 30 Second Activity slides (attached)
- Pen/ paper
- Highlighters (at least 2 different colors per participant)
- Chart posters
- Red yarn
- Tape
- Scissors
- Beach balls (one per group)

15 minutes

Engage

Use the attached **Presentation Slides** to guide the session. Welcome participants. Display **slide 2** and introduce yourself and the session. Transition through **slides 3-4** to introduce the essential question and the session objectives for the professional learning activities.

Move to **slide 5** and introduce participants to the [Beach Ball Talk and Toss](#) strategy. Invite participants to stand and create small groups. Provide one ball per group. Have participants take turns tossing the beach ball to others in their group. When a participant catches the ball, whichever color the participant's right thumb lands on determines the question they answer. After the participant answers the question, they toss the ball to another participant and repeat the process. When everyone is ready, move to **slide 6** with the provided prompts:

Red: Share a time you rewrote a lesson based on your understanding of how students process content with movement.

Yellow: Describe a time where students engaging with a physical activity helped their understanding better than a traditional worksheet.

White: How has using movement changed your approach to classroom management?

Green: How comfortable were you initially with the noise and unpredictability of a moving classroom, and where are you now?

Blue: How has your physical classroom setup evolved to accommodate movement?

Orange: How has incorporating movement changed your own energy levels by the end of the school day?

Give participants enough time so that at least everyone has had at least one chance to share.

Facilitator Note: Activity Modifications

- Grouping: Your groups will depend on the number of participants and the space available. Adjust materials and instructions accordingly.
- Colored prompts: The provided color-coded prompts may differ depending on the type of ball you use. Make sure to adjust the slide accordingly.

25 minutes

Explore

Transition to **slide 7**. Divide participants into three equal groups and assign each group one of the previous Professional Learning (PL) sessions in this 4-Part Less is More series. Pass out the corresponding narrative handouts:

- **Less is More: Implementation**
- **Less is More: Analyzing Implementation**
- **Less is More: Peer Coaching**

Each group should have one PL narrative for each member. As they read, invite each participant to highlight the narrative silently for the following, adding notes about the intended purpose behind each action using the [Categorical Highlighting](#) strategy:

Facilitator Actions- Blue

Participant Actions- Yellow

After participants finish highlighting their PL, have them share with their group their findings to check their understanding.

Next, move to **slide 8** and introduce the [jigsaw](#) strategy. Have participants reorganize into a new group with two other participants, who each read a different professional learning narrative. In the new group, have participants share their notes/ annotations with the others.

35 minutes

Explain

Move to **slide 9**. Pass out the **Components of Andragogy** handout to every participant. Explain to participants that professional learning is designed with the learner in mind. Adults need specific components to create success and meaning for learning for them. These components are called andragogy.

Participants should still be in their second Jigsaw group. Display **slide 10** and assign each group an adult learning element to create an [Anchor Chart](#) about how this fits into the professional learnings they examined. Explain that each group should divide their anchor chart into three sections: Implementation, Analyzing Implementation, and Peer Coaching. Next, assign each group a component of andragogy (it's okay if there are multiple groups per element): Autonomy & Choice, Practical Application, Honoring Experience, and Relevance.

Facilitator Note: Sample Responses

Autonomy/ Choice- PL 3 during the Extend section, participants draft a new lesson where movement is the primary method of learning. They have autonomy and choice over what strategies and which lessons they want to use to incorporate movement. They are in control of what level of risk taking they want to try in their classrooms.

Practical Application- PL 1 during the Explain section, participants are asked to apply new strategies to math scenarios they will encounter in their classrooms. These are strategies they can begin to immediately apply to their classrooms with scenarios and math concepts that are familiar.

Honoring Experience- PL 2 during the Engage section, participants share their past experiences and opinions about how movement has worked in their classroom before interacting with the new material for the professional learning session. This allows adult learners to give a chance to share what they already know and honoring the experiences from their classroom into the professional development.

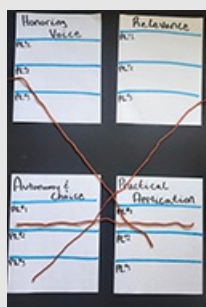
Relevance- PL 1 during the Extend section, participants are asked a series of questions about why movement is relevant, how it helps students process content, and how it supports the learning process. This portion of the PL invites participants to synthesize their learning from the sections and make it relevant to why they should be using these strategies in the classroom as an educator.

On their poster, participants should map out the specific adult learning principle reflected in each PL by providing evidence from the PL including the action the facilitator does. Inform participants to leave room for a red string for the upcoming detective board strategy.

After participants finish, hang up posters as if they were on a crime board (see "Sample Detective Board" note below). Move to **slide 11** and introduce participants to the [Detective Board](#) strategy. Each group should examine the different posters. When they discover something in common among the posters, they connect the ideas with yarn. Once groups finish making connections, ask for volunteers to share out the patterns they see. Take pictures of posters to share with participants afterwards.

Facilitator Note: Sample Detective Board

Here is a sample end result of what these boards can look like. If you have multiple groups assigned to each component, then you will have more boards.



30 minutes

Extend

Transition to **slide 12**. Explain to participants that as they move out of this professional learning series, they are now movement ambassadors. They are encouraged to help build the knowledge of their peers and increase the enthusiasm for risk taking inside of classrooms at their schools or with fellow math educators.

Facilitator Note: Optional 30 Second Activity Slides

If you prepared a copy of the provided 30 Second Activity slidedeck, share it with your participants using hidden **slide 13**. If you are allowing participants to make their own slide deck, be prepared to help them navigate common presentation platforms:

- [Google slides](#)
- [Canva](#)

Display **slide 14**. To begin shifting into a professional learning facilitator role, ask participants to brainstorm one physical movement lesson they implemented in which they felt confident. Introduce participants to the [30 Second Spotlight](#) strategy. Explain that each participant will create a single slide about a physical movement they did in their classroom as if they were going to create a professional learning around that strategy.

Invite participants to view that strategy, not from a teacher's lens, but as a professional learning facilitator. They need to include the following topics as they connect to the chosen strategy on their slide:

- Autonomy & Choice
- Practical Application
- Honoring Voice
- Relevance

Allow participants time to work. After participants finish, display **slide 15** and invite them to present their slide to their group/table in only 30 seconds. After each presentation, the group offers positive feedback around the strengths and potential areas of improvement of the professional learning idea.

10 minutes

Evaluate

Move to **slide 16**. Invite participants to use the [3-2-1](#) strategy to reflect on the professional learning series as a whole. Pose the following questions verbally to participants:

- What are three things you learned from the professional learning series and the physical movement lessons in your classroom?
- What are two questions you still have?
- What is one thing you found interesting?

Ask for volunteers to share out.

Research Rationale

Physical movement incorporated into existing math lessons can increase student motivation, engagement, retention, and cooperation skills. Rather than focusing solely on knowledge retention, PAL (Physically active learning) emphasizes the learning process, creating opportunities for students to explore, experience, and interact with mathematical concepts through movement (Mandelid et al., 2023). Research shows that the pedagogical approach of combining physical activity and academic learning creates a cognitive bonding process that allows for enhanced comprehension and retention (González-Pérez et al, 2025).

Both González-Pérez et al. (2025) and Norris et al. (2018) also found that adolescents, particularly secondary students, tend to spend a majority of their school day on sedentary behaviors, but provide hope that schools can provide a structure to integrate physical movement into academics, increasing students' activity and attention. Mandelid et al. (2023) argue teachers play a central role in designing activities that connect movement with clear mathematical goals, structuring tasks, and guiding reflection so that students understand the purpose behind the activity.

By purposefully integrating kinesthetic learning into math, educators design opportunities for students to shift their perceptions of math ultimately creating classrooms that increase student's concentration, motivation, and increase academic performance.

Resources

- González-Pérez, M., Grao-Cruces, A., Bandera-Campos, F. J., Chalkley, A., Camiletti-Moirón, D., & Sánchez-Oliva, D. (2025). Less is more: Qualitative insights into physically active learning in secondary math education. *PLOS ONE*, 20(11), e0336641. <https://doi.org/10.1371/journal.pone.0336641>
- K20 Center. (n.d.). 3-2-1. Strategies. <https://learn.k20center.ou.edu/strategy/117>
- K20 Center. (n.d.). 30 second spotlight. Strategies. <https://learn.k20center.ou.edu/strategy/3748>
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- Mandelid, M. B., Thurston, M., Reinboth, M., Resaland, G. K., & Tjomsland, H. E. (2023). “Just because it’s fun, it’s not without purpose”: Exploring the blurred lines of physically active learning. *Teaching and Teacher Education*, 133(1):1-8. [10.1016/j.tate.2023.104297](https://doi.org/10.1016/j.tate.2023.104297)
- Norris, E., Dunsmuir, S., Duke-Williams, O., Stamatakis, E., & Shelton, N. (2018). Physically active lessons improve lesson activity and on-task behavior: A cluster-randomized controlled trial of the “Virtual Traveller” intervention. *Health Education & Behavior*, 45(6), 945–956. <https://doi.org/10.1177/1090198118762106>