STELLA ONLINE: TRANSLATING A MODEL OF TEACHER PROFESSIONAL DEVELOPMENT TO AN ONLINE ENVIRONMENT

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OVERVIEW

The purpose of this study was to design and test a fully online version of the highly effective in-person STeLLA PD program.

- Rationale: In-person STeLLA, while effective, has limited reach and is too costly for many teachers and districts.
- Study: The study compared the **teacher practice, teacher learning, and student learning** results of the two programs.
- Program: Both programs had the same total hours (88.5) over the course of the year focused on the same pedagogical and science content learning goals.
- Challenges: In-person STeLLA relies on building a strong community to engage teachers in rich video-based analysis of practice and challenging science content learning. We anticipated both emphases could be difficult in an online setting.

ITERATIVE DESIGN DEVELOPMENT

The online version was designed using a Design-Based Iterative Research process and attended to four of the STeLLA design principles that we anticipated would be more challenging to translate into an online setting: video-based analysis of practice, PD leader knowledge and decision-making, collaborative learning, and shared science content and curriculum.

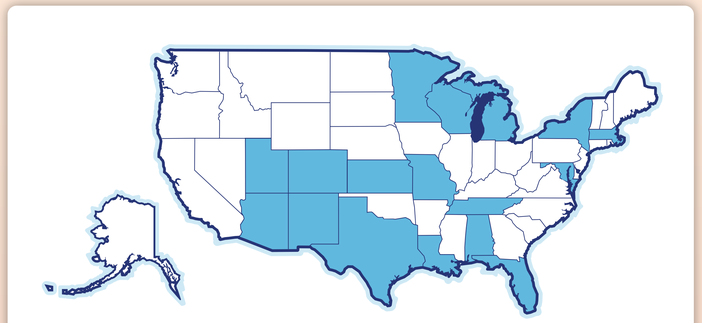
RESEARCH METHODS

This study (2020-2022) collected new data from teachers who participated in the online version of STeLLA PD and their students. For comparison, we used data collected from an earlier (2011-2015) cluster randomized trial comparing (1) in-person STeLLA PD with a (2) in-person content-deepening PD of equivalent duration.*

SIMILAR IMPACT, GREATER ACCESS

Comparing in-person STeLLA with online STeLLA:

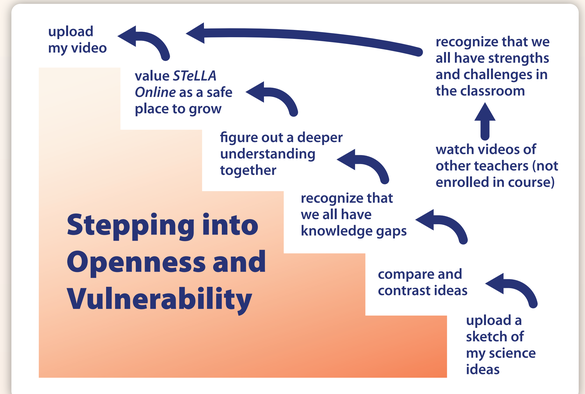
- **There was no significant difference in teacher practice & content outcomes** in the online and the in-person environments.
- **There was no significant difference in student achievement** between students taught by teachers who experienced in-person STeLLA and teachers who experienced online STeLLA (p = .162 and p = .523, controlling for demographics).



- Earlier in-person STeLLA programs reached single districts or small areas within a single state. **Online STeLLA engaged teacher participants from 18 states, many from more diverse communities and rural areas.**
- **Online STeLLA was found to be more accessible, less costly, and reached a wider audience** than in-person STeLLA.

PLEASANT SURPRISES/OTHER FINDINGS

- Effective teacher learning communities were built through careful attention to building trust and vulnerability within small groups. This made for rich and rigorous synchronous and asynchronous discussions.
- New leaders were effectively developed for online facilitation.
- The study unexpectedly took place during the school years most heavily impacted by COVID. Despite this we had low teacher attrition and strong student learning gains.



FUTURE IMPLICATIONS

There is a great need for effective, accessible teacher PD across the country. This study showed that the need can be met at lower cost with greater reach than localized in-person programs. With careful attention to program structure, use of online tools, and strong facilitation, online PL can be an important option for accessible teacher learning.

PILOT ROUND 1

- Determined content for synchronous and asynchronous course elements
- Designed consistent asynchronous module structure

PILOT ROUND 2

- Standardized duration of asynchronous work
- Identified limited set of online tools that best supported learning goals and community building

PILOT ROUND 3

- Added key "crux questions" to focus participant discussions
- Honed participant communicatio n and reminder systems

STUDY ROUND 1

- Led by BSCS facilitators
- Co-led by STeLLA facilitators-in-training
- Included analysis of participant videos and student data collection
- 2020-2021 academic year

STUDY ROUND 2

- Led primarily by Round 1 co-facilitators
- Developed new co-facilitators
- Included analysis of participant videos
- 2021-2022 School Year

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*Taylor, J. A., Roth, K., Wilson, C. D., Stuhlsatz, M. A., & Tipton, E. (2017). The effect of an analysis-of-practice, videocase-based, teacher professional development program on elementary students' science achievement. Journal of Research on Educational Effectiveness, 10(2), 241-271.