



Implementation of a Foundational Online Resident-As-Teacher Program for All First-Year Residents

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Indiana University School of Medicine (IUSM)

IUSM is the largest school of medicine in the nation

UME ~1450 medical students

GME ~1300 residents and fellows

~ 400 PGY1s per year

GME programs

112 accredited

79 non-accredited



The Need

The Liaison Committee of Medical Education (LCME) requires residents to participate in the clinical teaching of medical students, however, very few are prepared to do so upon entering their post-graduate training programs.

Our Goal

To implement a school-wide **foundational** Resident-as-Teacher (RasT) curriculum for ALL incoming PGY1s to provide them with the requisite pedagogical skills and self-confidence and comfort teaching in the clinical learning environment.

The curriculum needed to be delivered **asynchronously and on-demand** to avoid having to schedule numerous in-person training activities across our multiple teaching hospitals and disciplines.



How we did it...

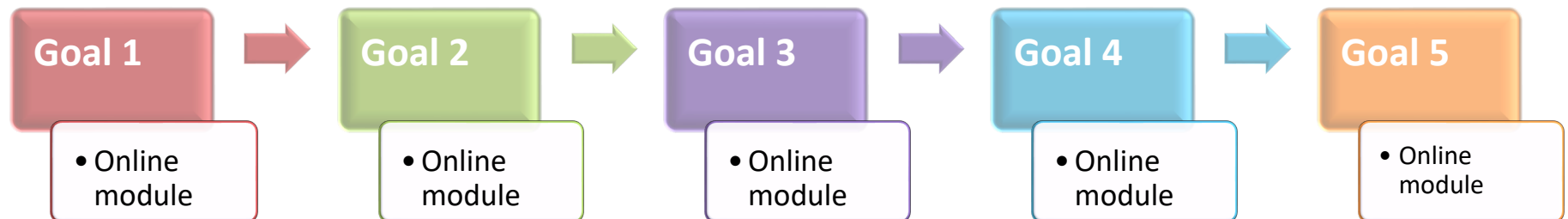
An **Advisory Panel** of faculty educators, medical students, residents & fellows was tasked w/developing a RasT curriculum

We followed **Kern's six-step approach** for curriculum development:

- Identify the problem,
- Conduct a needs assessment,
- Define goals and objectives,
- Determine an educational strategy,
- Implement the curriculum, and
- Evaluate the outcomes

Used the **A3 structured problem-solving process** to create the **"Online Modular RasT curriculum"**:

- Consisted of five curricular goals and associated curricular content
- Each of the five curricular goals had a separate online module
- The entire curriculum (all 5 modules) could be completed asynchronously at the resident's convenience in 2-3 hours



The Online Modular Resident-as-Teacher Curriculum at IUSM, 2017-2021

Module 1: Build/construct a safe learning environment

- Communicate clear expectations
- Treat all learners fairly and respectfully
- Project a friendly and approachable demeanor

Module 2: Develop clinical learning environment teaching strategies

- Develop a working knowledge of multiple teaching strategies (SNAPPS, Just-in-Time, One-Minute Preceptor)
- Seek out and recognize opportunities for clinical teaching
- Tailor clinical teaching to learner-identified needs

Module 3: Act as a positive role model in all clinical settings

- Recognize that every interaction with and seen by a learner is an opportunity for role modeling
- Discuss with learners and model methods of effective communication
- Demonstrate respect, empathy, and professionalism in all interactions

Module 4: Assess the student's performance and provide feedback

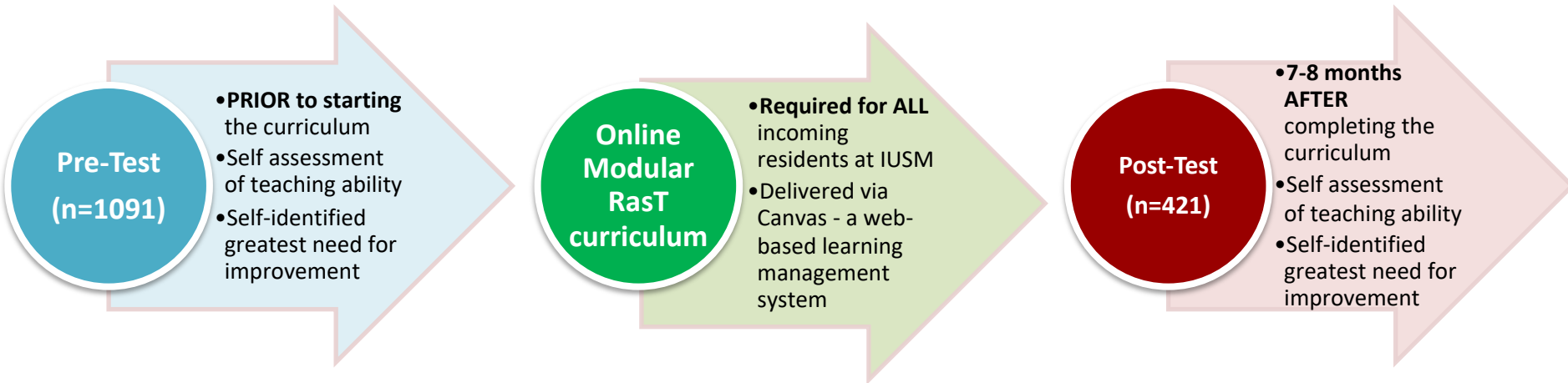
- Assess learners based upon their clerkship performance in accordance with defined learning objectives
- Provide ongoing formative feedback to the learners

Module 5: Enhance your professional development as a clinical teacher

- Solicit feedback on teaching from learners, peers, and supervisors
- Receive feedback without defensiveness
- Reflect upon feedback received and develop a self-improvement plan



Our Process...

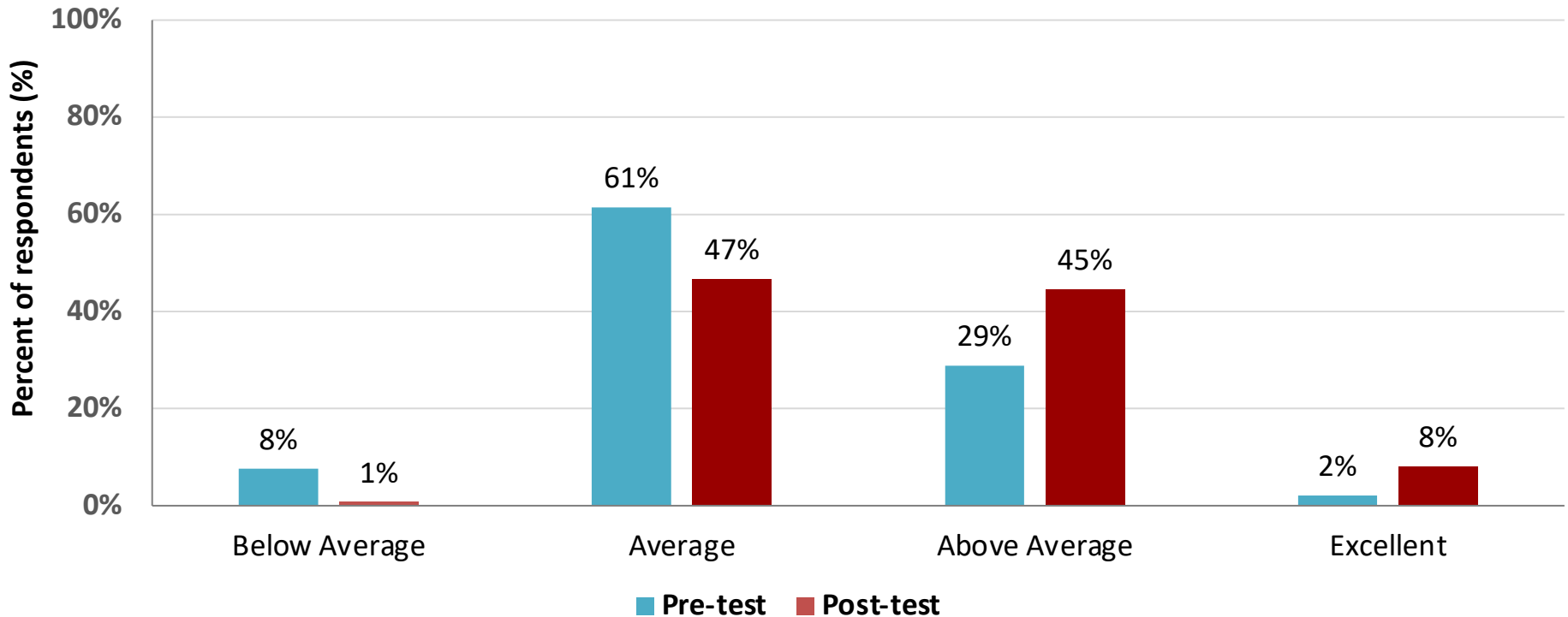


Data were analyzed for respondents who completed BOTH the pre-test and post-test (39%)



Results of Pre-test and Post-test Survey

I rate my teaching ability in the clinical learning environment as...

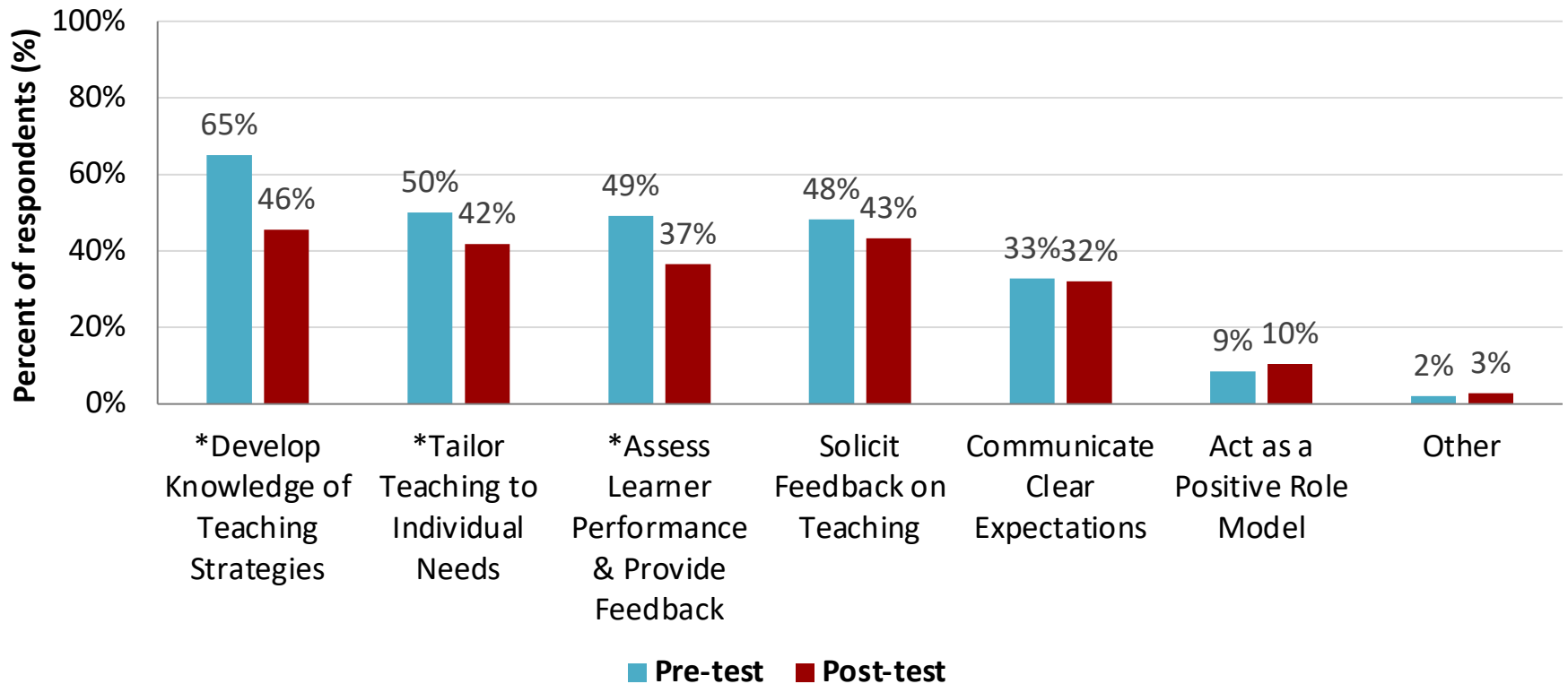


*Analysis of paired data of 421 first-year residents at IUSM, 2017-2021.
(McNemar-Bowker test, $p < 0.001$).*



Results of Pre-test and Post-test Survey, Contd.

I feel my greatest needs for improvement as a teacher are...



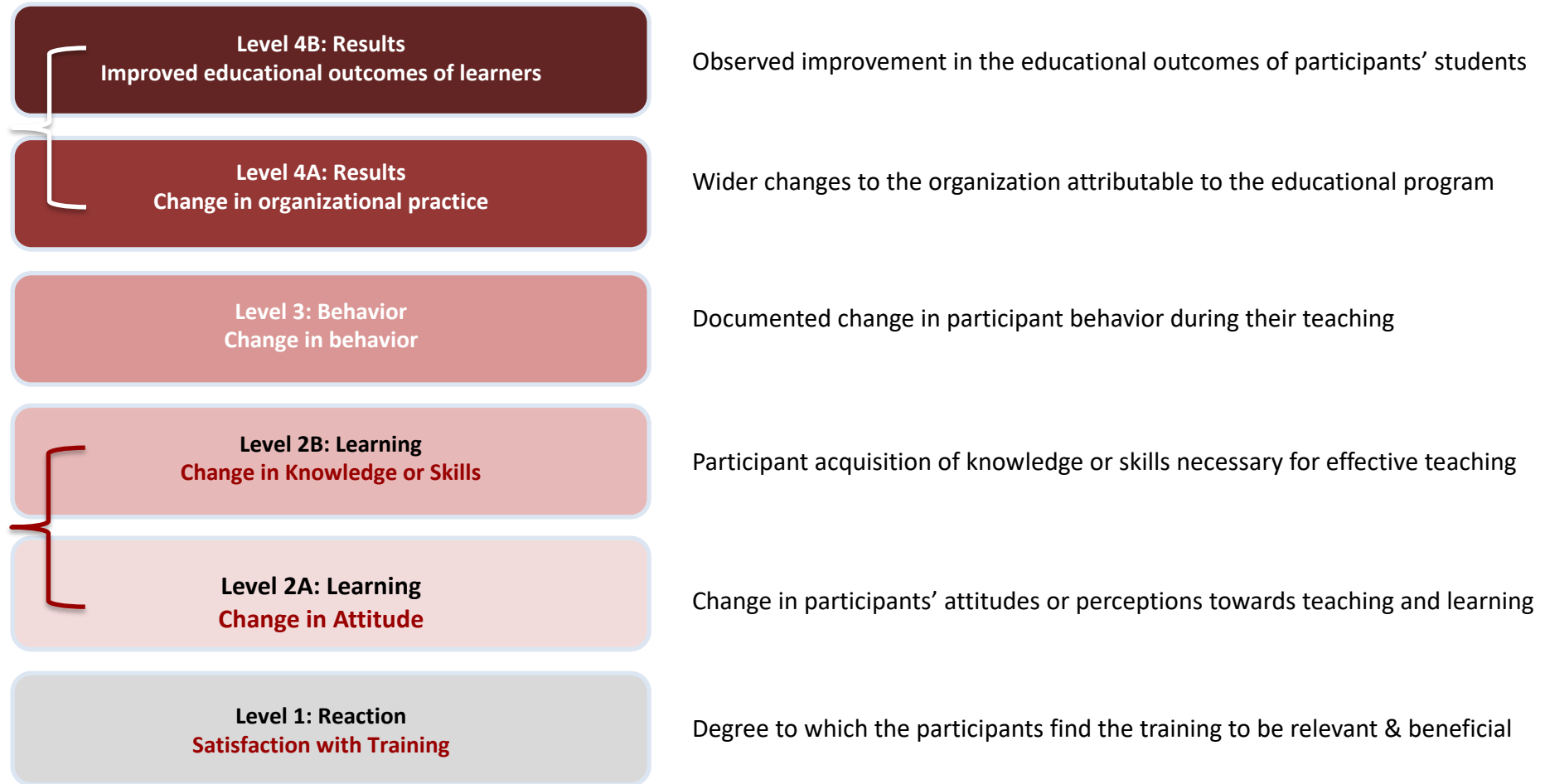
Analysis of paired data of 421 first-year residents at IUSM, 2017-2021.

*Statistically significant reduction from pre-test to post-test (McNemar test, $p < 0.01$).



Kirkpatrick's Model for Evaluating Educational Outcomes (1994)

Modified by Freeth et al. (2003) and Steinert et al. (2006)



Limitations

A significant challenge in evaluating any RasT curriculum is measuring *actual* improvement in teaching ability.

The chief limitation of using self-reported data is the inability to demonstrate higher-order benefits (like behavioral change or performance improvement) *directly* attributable to the intervention (Kirkpatrick Levels 3 and 4).

Another limitation is the fact that we were only able to assess the impact of the curriculum on those residents who completed *both* the pre-test and the post-test (39%).



Conclusions

Despite these limitations, we believe our online RasT curriculum has successfully met its goal of improving the PGY1s' self-confidence and comfort teaching in the clinical learning environment.

Our online RasT curriculum provided an efficient and cost-effective alternative to in-person RasT training:

- Easy to administer
- Learning was asynchronous:
 - Not limited by lecture time or faculty involvement
 - Convenient for the resident's schedule
- Meets the LCME requirements



Future plans

1. To incorporate important learning opportunities related to health equity and anti-racism in our revised online RasT curriculum.
2. To examine ways to assess residents' actual teaching ability in the clinical learning environment.

