

Basic Research on Instructor Practice: What do We Want to Know? ...and How?

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There now exist resources (e.g., text- and video-based case activities) for use in the professional development of novice college mathematics instructors. We do not yet know much about the characteristics of effective use of those resources. Even less is known about what facilitators need to know to use the resources successfully. A newly funded project is building meta-materials to help providers use resources. These Provider Packages are a virtual facilitation partner, taking on some of the cognitive load of facilitation (e.g., audio tracks that can be turned on and off, notes from a more experienced peer that are virtual whispers in the ear). The project will examine use of the facilitation support tools in the Provider Packages to identify characteristics of effective facilitation of activities. At the poster, we will seek conversations about research designs that can leverage the opportunities of the Provider Packages.

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To create high-quality learning opportunities for undergraduate mathematics students we need to provide opportunities for novice college mathematics instructors to learn knowledge and skills for teaching. Those learning opportunities often occur during teaching seminars led by faculty. Certainly, activities are available for these *Providers* of professional development and some are accompanied by guidance to help Providers use the activities effectively (e.g., Friedberg et al., 2001; Hauk, Speer, Kung, Tsay, & Hsu, 2013). However, from our experience, utilizing Provider guides and facilitating an activity for the first time can be very challenging.

Facilitation requires bringing to mind and coordinating several streams of information. We are creating digital *Provider Packages* to serve as a virtual facilitation partner, taking on some of the cognitive load of organization and orchestration (Figure 1). Just-in-time facilitation expertise is available with

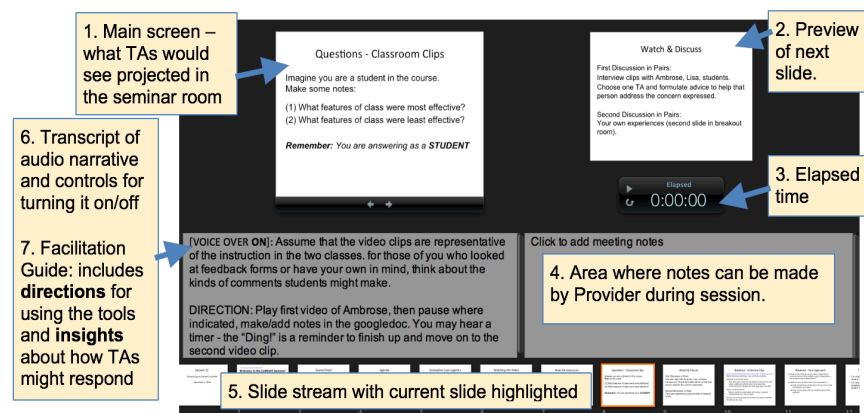


Figure 1. Potential Provider Package view.

options to turn on (or off) various scaffolds. For example, with all supports “on” a novice Provider allows the built-in audio of an expert facilitator to lead the session. Or, by selecting only visual supports, a more experienced Provider uses the Package as its lead facilitator. We are developing *Provider Packages* for several publicly-available, case-based activities. The poster will have images from sample *Provider Packages* to illustrate the types of supports provided.

As part of this work, we will do research to explore what faculty need to implement such professional development activities. To that end, we seek input from the RUME community about research designs and questions we might use in the context of this project, data that might be most valuable to gather, and ideas for future expansions of the project.

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