



A Scaffolded Model of Responsive Instructional Coaching for Managing Teacher Technological Instructional Overhead

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Audience: Instructional coaches wanting to support teachers in integration

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Research Connections: TIO (Technology Instructional Overhead) and instructional coaching

Context: 6th -12th grade STEM Classes

Problem of Practice Addressed: Teachers tend to experience highly variable levels of buy-in when it comes to technology integration within their classrooms. Whether teachers adopt technology into their teaching can be influenced by many factors such as familiarity with the technology, available class time to teach children how to use a technology, and the costs associated with a technology. Additionally, the technology must serve an instructional purpose that the teacher values. Often teachers ask themselves, “Does this technology let students learn something new, experience learning in a new way, or facilitate learning faster than what I do right now?”

All of these considerations lead teachers to make decisions about if, how, and when they bring technology into their classrooms. This variability of technology adoption by teachers comes down to a series of factors collectively referred to as technological instructional overhead (TIO; Tofel-Grehl et al, in press). TIO creates interesting challenges and opportunities for instructional coaches who wish to support teachers in adopting technology in their classrooms. Coaches must find ways to lower the threshold to technology adoption. This brief seeks to offer instructional coaches a model for how to support teachers in adopting technology in their classrooms through a faded scaffolding model of coaching technology adoption.

Background: Teaching is a highly taxing activity that requires focused attention on many elements of the learning environment, including lesson goals and logistics, student needs and classroom behaviors, and the dynamic adaptations that unanticipated events may require. Attempting to process all of this information can be overwhelming, especially for novice teachers, so when mastery of existing teaching tools and techniques is obtained, appeals to change a successful approach are likely to fall on deaf ears. When such changes are viewed as extraneous to a teacher’s classroom and instructional goals, they are even less desirable because they add to an already high level of cognitive load without perceived benefit. For a teacher to engage in effortful change, they must perceive sufficient utility and expectancy for successful implementation to warrant the necessary cognitive investment (Eccles & Wigfield, 2002).

Instructional coaches are an important support schools and districts often provide teachers to ensure that practice is meaningful, evidence-based, and of value. The use of a coaching cycle modeled after Jim Knight’s impact cycle provides the appropriate levels of support to scaffold teachers in successfully adopting technology in their classrooms. The cycle positions collaborating teachers as the ultimate



decision-makers in a process that leads to powerful improvements in student learning and well-being. (Knight, 2018)

How the Research Explores This: TIO describes the reflective process teachers tend to engage in privately to decide whether to use technology in their classrooms. Teachers tend to look at how much work they must put in to learn a technology sufficiently enough to teach it (i.e., the time to learn). Then teachers evaluate what they must do to teach the technology to their students given their specific students and classroom context (i.e., time to teach). Finally, teachers must evaluate if the technology provides something new or better that makes the instructional load of learning and teaching the technology worthwhile.

These potential benefits are what makes it worthwhile for a teacher to engage in the time to learn and the time to teach a technology. For example, smart boards were readily adopted by many teachers because teachers found them easy to use and highly worthwhile for managing information and tasks within the classroom (Martin et al., 2014). The relative TIO for the smart board was seen as low because teachers could adopt the technology easily with a high payoff.

Activity: As coaches, our effort begins from a place of learning from our teacher partners. In order to develop and map out a faded scaffold coaching cycle, we first must develop common definitions for our effort. In this context specifically, we define scaffolds as instructional supports that can be utilized by the instructional coach to help extend, improve, and expand a teacher's technology use and integration within their classroom, and manage teacher technological instructional overhead. If we can make technology both more manageable for teachers to use and more useful to their instructional goals, we will reduce the instructional overhead and raise the instructional value. We begin from a space of needing to know what teachers are able and willing to do independent of their coach's support. We map out the coaching cycle that instructional coaches can enact to scaffold teachers' successful adoption of technology.

Coaching Cycle	Description
1. Introductory Coach provides lesson plan	During this coaching cycle, the instructional coach provides the teacher with a lesson plan in their content area that includes technology integration. Together, they review the lesson and make any modifications necessary to support the teacher. For example, the coach provides a lesson plan where use of technology results in high value for students and low effort for teachers.
2. Beginner Coach modifies teacher lesson plan	The teacher presents the coach with a lesson plan in their content area that does not include technology integration. The coach models for the teacher how to determine if integrating technology adds value to the lesson and how to modify the lesson to ensure an authentic learning experience. At this level, coaches and teachers must continue to ensure that the value of the technology integration is high and teacher effort is

	low to moderate. The coach introduces the SAMR (Substitution, Augmentation, Modification, Redefinition) model for technology integration.
3. Intermediate Teacher modifies coach lesson plan	The educator is given a lesson plan in their content area that includes technology integration. The teacher independently makes modifications to the lesson. For example, the teacher may decide to use Microsoft Excel instead of Google Sheets, or iPads instead of Chromebooks. The modifications should fit their classroom management style and be completed in collaboration with the coach. Use of the SAMR model may also be implemented here.
4. Advanced Teacher co-plans a lesson	The coach and teacher co-plan a lesson with technology integration based upon a standard in their content area. The teacher chooses a teaching standard and provides the learning objectives. The teacher uses the SAMR model to determine how to integrate technology. The coach models for the teacher what to evaluate when making a decision.
5. Master Teacher independently creates lesson	The teacher, with no support from the coach, creates a lesson plan with technology integration. The coach may review the lesson and offer feedback and or assistance in the classroom with implementing the lesson.
6. Professional Teacher supports another teacher with creating/modifying a lesson plan.	The teacher co-plans with another teacher to modify or create a new lesson plan with technology integration. The coach can provide support by reviewing the lesson plan or supporting with lesson delivery.

Implications: By engaging in a scaffolded model of instructional coaching, instructional coaches can engage teachers in meaningful and manageable technology integration. Through careful scaffolding, instructional coaches can help teachers manage TIO to achieve greater success using technology in the classroom. When teachers are at the core of managing and receiving value from technology integration, students immediately reap the benefits. The school receives these benefits in the form of increased test scores, which also benefits the district.

References:

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