



Evidence-Based Professional Learning

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Introduction

Adult education teachers face new challenges as they begin adapting to the increased rigor of new College and Career Readiness Standards. Aligning adult education with new standards, assessments, and accountability measures means teachers will have to shift to more student-centered and evidence-based instruction. Instead of choosing goals and setting strategies for professional development based on teachers' interests and estimated areas of need, higher standards demand targeted professional development based on a wide variety of student and programmatic data.

According to the Survey of Adult Skills (Programme for the International Assessment of Adult Competencies) from the Organisation for Economic Co-operation and Development (2013), one in six U.S. adults—more than the average across countries—has low literacy skills, and one in three has low numeracy skills. More than ever, economic and demographic shifts mean that the number of low-skill jobs is shrinking, even while many employers struggle to find qualified workers to fill their mid- and high-level jobs (Carnevale, Smith, & Strohl, 2010). These high stakes for adult learners demand instructional practice carefully aligned with the diverse needs of their students. Unfortunately, training for adult education teachers is often not carefully aligned with specific student-learning needs. In addition, expectations and anticipated teacher outcomes are often not explicitly defined. This problem can be addressed through intentional, student-focused professional development that strategically analyzes student data to pinpoint where teachers need support in addressing the unique needs of their students.

This evidence-based approach is called “results-based professional learning,” and teachers in some places are now being trained to take it on.

Analysis of results-based professional learning produces evidence that student learning and achievement have increased directly as a result of applying strategies, skills, and knowledge gained during professional development. These types of evidence are sometimes called third-level results (Mizell, 2010).¹

This brief covers the common features of research related to results-based professional learning and offers a guide for implementation. Common features include using data to inform instruction, backwards planning, and collaborative approaches to teaching and learning.

Using Data to Inform Instruction and Professional Learning

There are a few central ways that student data can be used to help inform teaching and address student learning needs. The first uses “a set of student outcomes measures to describe areas of instruction that need to be improved across a broad group of teachers”; the second uses data as the basis for differentiated training and support for professional development (Torgesen, Meadows, & Howard, 2006, p. 1).

Student data can be used to identify areas of support needed for particular teachers in specific areas. “Professional development and support efforts, such as coaching, required attendance at special training sessions, supervisory visits, close review of lesson plans, might then

¹ According to Mizell (2010), second-level results are “the evidence that educators’ application of what they learned in professional development has enabled them to improve their instruction and more effectively address student learning problems,” and first-level results are “the evidence that as a result of the professional development, educators learned what is necessary for them to more effectively address student learning problems” (p. 22, Emphasis added).

be provided on a differentiated basis to teachers who have the greatest need for improved instructional practices” (Torgesen et al., 2006, p. 2). There are many types of data to draw upon, though the challenge, particularly in adult education, is collecting strong, consistent, and reliable data at the classroom level in addition to the program level. The driver of professional development focus may be National Reporting System data, classroom-level data, or data gathered through local research. Once set in place, new strategies based on these data can dictate additional data collection.

To address the limited scope of currently available adult education data and increase transparency, collaboration, and successful transformation of professional development, all programs across Pennsylvania enter goals and minutes from quarterly meetings between program administrators and

teachers into a database accessible to adult educators and administrators across the state.

As the education reform movement gathers momentum, data will play an increasingly important role in shaping curriculum development, lesson planning, professional development, and directing the implementation of accountability frameworks. Measurements of teaching effectiveness increasingly include student outcome data. Using assessments as a window into the evolving needs of each student provides direction for each teacher’s development.

Assessment tools and their resulting data provide a unique means to develop a concrete, evidence-based, and actionable understanding of student challenges and strengths. As shown in Table 1, the appropriate use of data requires attention to both the content they describe and their scope.

Table 1. Data Content and Scope

Content	Scope
<p>Valid and reliable data are crucial.² Data must be collected in ways that are unbiased and relevant to the questions posed. An assessment that measures reading comprehension, for example, should not be used as the sole indicator of a student’s knowledge of vocabulary or grammar, and certainly not as an indicator of overall success (Torgesen et al., 2006). Employing multiple performance measures provides a broad, nuanced view of areas that require targeted attention.</p>	<p>Growth measures rather than static measures of student performance should be used to identify areas of student need and areas that require focused attention by the instructor. “Students assigned to a very effective, hardworking teacher might actually achieve lower results on an end-of-year test than students from a less effective teacher, if students of the harder working and more skillful teacher began the year with substantially lower reading or language skills. Rather than indicating the need for more professional development or closer supervision, the lower results of the first teacher might actually indicate the need for more classroom support....” (Torgesen et al., 2006, p. 2).</p>

When student-learning outcomes, measured in part by formal standards-based standardized assessments, define the content and skills that students are expected to know, “teachers must understand how to teach... content in ways that model how students will be expected to demonstrate their learning in school and beyond” (Killion & Kennedy, 2012, p. 14). In part, this means familiarizing students with the organization, framing of questions,

and general format of the standardized assessments they will encounter, which ensures that they are comfortable with the likely range of questions, content, and expected latitude of responses. Tests, however, must not drive instruction, but rather be one in a collection of evaluative tools that support an iterative process of assessment and instructional adjustments that respond to individual student-learning needs.

² “Context, process, and content are the three key elements in designing effective professional development (National Staff Development Council, 2001). The context for professional development must be conducive to learning, which may be achieved through the creation of learning communities under the guidance of effective leaders who can appropriately deploy critical resources. The process of training should focus on data use and learning outcomes, including an evaluation of training effectiveness. The content of training should be scientifically based, current, and responsive to the needs of stakeholders (i.e., test coordinators, teachers, related service providers, and administrators). The National Staff Development Council (2001) provides standards for each of these elements to guide staff development personnel in designing professional development experiences” (American Institutes for Research, 2005, p. 1).

Backwards Planning in the Classroom and in Professional Learning

Evidence shows that identifying precise student-learning needs and adapting teacher education to meet those needs is the most direct method for improving student outcomes. It is critical, writes Richard DuFour (2004), “not simply to ensure that students are taught but to ensure that they learn. This simple shift—from a focus on teaching to a focus on learning—has profound implications.” Many professional development programs have begun to rethink their approaches based on this idea. According to Killion and Kennedy (2012), “The core content of professional learning is the intersection of what educators need to learn

and do and what students need to learn and do” (p. 14). To use a mathematics class metaphor, traditional professional development is like using the guess-and-check method when working backwards gets the job done faster and more accurately.

Backwards planning (backwards mapping or backwards design) is an evidence-based professional development model that begins by identifying student learning needs and works backwards to meet those needs. The model can be divided into seven phases. Though there are slight variations in the literature (Killion & Kennedy, 2012; Tobia, 2007; U.S. Department of Education, 2006), Table 2 reflects the most important aspects of each phase.

Table 2. Phases of Backwards Planning

<p>Phase 1</p> <p>Determine student learning needs by analyzing data and reviewing standards.</p>	<ul style="list-style-type: none"> ■ What do we want students to know and be able to do? ■ How do the standards fit within a scope and sequence of the organization/program curriculum? ■ How are the standards for a grade or course assessed on state and local tests? ■ What concepts and skills do students need to meet the expectations in the standards? Where are the gaps in their learning? ■ Which students are most affected?
<p>Phase 2</p> <p>Develop improvement goals and identify specific student outcomes desired based on the data.</p>	<ul style="list-style-type: none"> ■ What do teachers need to know and be able to do to support student-learning goals? ■ What are the improvement goals for students, educators, and organization/program? ■ What are the critical benchmarks for progress?
<p>Phase 3</p> <p>Determine educators’ knowledge, skills, and behaviors based on student learning needs. Identify important characteristics of community, institution, school, department, and staff.</p>	<ul style="list-style-type: none"> ■ What knowledge, attitudes, skills, aspirations, and behaviors do educators need to meet the improvement goals? ■ What are the unique characteristics of this learning community that will influence how to implement successful professional learning? ■ Are there external perspectives that can be sought from other constituents such as families, citizens, or educators working outside the immediate environment? (Vescio, Ross, & Adams, 2008, p. 89)

<p>Phase 4</p> <p>Study and analyze the available research on professional development interventions, strategies, and professional learning programs.</p>	<ul style="list-style-type: none"> ■ What are the characteristics of interventions that have successfully achieved student learning goals? ■ Does the research being used represent a breadth of perspectives (e.g., educational, sociological, and/or anthropological research)? ■ Where have they been successful? ■ Under what conditions have they worked?
<p>Phase 5</p> <p>Select and plan a professional development intervention and evaluation.</p>	<ul style="list-style-type: none"> ■ What are the effective research-based strategies and appropriate resources that will be used to support learning that is aligned to student learning needs and standards? ■ What are the appropriate assessment techniques that will be used to provide evidence of student learning? ■ What evidence of student learning will be collected? ■ Who will be responsible for implementing the program? ■ What is the timeline for implementation? ■ What resources are necessary for success? ■ What are the critical benchmarks for progress? ■ How will teachers receive coaching and feedback? ■ How will we support ongoing implementation?
<p>Phase 6</p> <p>Implement a professional development intervention and evaluation.</p>	<ul style="list-style-type: none"> ■ Deliver instructional interventions and strategies, and use tools as planned in the specified time period. ■ Record results, noting where students struggled and where instruction did not achieve expected outcomes. ■ Collect the agreed-upon evidence of student learning to take back for analysis.
<p>Phase 7</p> <p>Analyze and evaluate the professional development intervention and provide ongoing support.</p>	<ul style="list-style-type: none"> ■ Have teachers revisited and familiarized themselves with the standards before analyzing student work? ■ What evidence of student learning is found based on the analysis of student work? ■ Have students met the expectations outlined in the standards? ■ What inferences can be made about the strengths, weaknesses, and implications of instruction? ■ What knowledge have students demonstrated and what skills need to be strengthened in future lessons? ■ What alternative instructional strategies or modifications to the original instructional strategy may be better suited to promoting student learning?

Unless otherwise noted, the sources for the content in this table are as follows: Killion and Kennedy (2012), Tobia (2007), and U.S. Department of Education (2006)

Collaborative Approaches for Results-Based Professional Learning

Professional learning communities (PLC) and communities of practice (CoP)³ are collaborative approaches to support teachers in developing and implementing evidence-based practices including applying assessment and data and backwards planning. These terms—PLC and CoP—denote distinct ways to organize intentional professional collaboration, and their structures greatly influence the types of student learning results they can aspire to and how they might be achieved.⁴

A PLC is typically organized within a school, center, or institution. The community of educators is “committed to working collaboratively with one another in ongoing processes of collective inquiry and action-research to achieve better results for the students they serve” (DuFour, Eaker, & Many, 2010). Sharing the same students, teachers jointly analyze the work of particular learners to identify the standards that are behind learning challenges and set student learning goals. Communication and collaboration are used to address specific challenges at the granular level. Shared familiarity with individual students allows teachers to

easily determine whether learners have met goals and how instructional practice should adapt to each student’s distinct needs. Much of the literature on PLCs emphasizes “the cultural shift that must occur if schools intend to become learning communities” (Blankenship & Ruona, 2007, p. 3).

According to Etienne Wenger (n.d.), “communities of practice are groups of people who share a concern or passion for something they do and learn how to do it better as they interact regularly” (p. 1). Members come from a variety of programs to participate in training sessions in which teachers learn, share, and provide feedback to one another. Because CoP members come from programs and institutions with different organizational structures, dialogue is enriched by a diversity of approaches. Though problem-solving is not focused on one group of students with specific needs and learning goals, the experiences of educators with different students and under different circumstances encourage creative thinking and innovative interventions.

Table 3 summarizes the distinctive characteristics of PLC and CoP models.

Table 3. Characteristics of PLC and CoP Models

Professional Learning Communities*	Communities of Practice**
Definition: A PLC is a focus on and a commitment to the learning of each student where educators embrace high levels of learning for all students as both the reason the organization exists and the fundamental responsibility of those who work within.	Definition: CoPs “are formed by people who engage in a process of collective learning in a shared domain of human endeavor ... [They] share a concern or passion for something they do and learn how to do it better as they interact regularly.”
Characteristics	Characteristics
Focus on learning: High levels of learning are the reason that the organization exists and the fundamental responsibility of those who work within it.	Domain: “It has an identity defined by a shared domain of interest. Membership ... implies a commitment to the domain and therefore a shared competence that distinguishes members from other people”

³ Educational theorist and practitioner Etienne Wenger and anthropologist Jean Lave coined this term while studying apprenticeship as a learning model. Wenger (n.d.) writes, “The term ‘community of practice’ was coined to refer to the community that acts as a living curriculum for the apprentice” (p. 4).

⁴ The Powerful Learning Practice Network (2012) offers the following definitions: PLCs: “Local. Purposeful, face-to-face connections among members of a committed group (team or school wide).” CoPs: “Bounded. A committed and often global group of individuals who have overlapping interests and recognize a need for connections that go deeper than the personal learning network or the professional learning community can provide. Conversations are systemic and of wide-reaching issues.” Professional Learning Networks (PLN): “Global. Individually chosen, online connections with a diverse collection of people (collectives) and resources from around the world.”

Characteristics	Characteristics
Collaborative culture: The culture is composed of collaborative teams engaged in a systematic process in which members work interdependently to achieve common goals that impact their classroom practice linked to the purpose of learning for all.	Community: “Members engage in joint activities and discussions, help each other, and share information. They build relationships that enable them to learn from each other.... [They] do not necessarily work together on a daily basis,” but they interact and learn together.
Collective inquiry: Teams engage in collective inquiry into best practices in teaching and best practices in learning. This approach enables them to develop new skills and capabilities leading to new experiences and awareness.	Practice: “Members ... are practitioners. They develop a shared repertoire of resources: experiences, stories, tools, ways of addressing recurring problems—, in short, a shared practice.”
Action orientation: PLCs understand that the most powerful learning occurs in a context of taking action and value engagement and experience as the most effective teachers (i.e., learning by doing).	Activities: CoPs develop their practice through a variety of activities such as joint problem solving, requests for information, seeking experience, reusing assets, coordination and synergy, discussing developments, documentation projects, visits, mapping knowledge, and identifying gaps.
Commitment to continuous improvement: PLCs gather evidence of current levels of student learning, develop strategies to build on strengths and address weaknesses, implement strategies, analyze the impact of changes, and apply new knowledge in the next cycle.	Organizational design: CoPs enable practitioners to take collective responsibility for managing the knowledge they need, create a direct link between learning and performance, and address the tacit and dynamic aspects of knowledge creation and sharing. CoPs are not limited by formal structures and create connections among people across organizational and geographic boundaries.
Results orientation: PLCs realize that all efforts in the previously mentioned areas must be assessed on the basis of results rather than intentions.	Benefits: Benefits include individual/help with challenges, access to expertise, confidence, meaningful work, personal development, reputation, professional identity, networking, marketability, organization/problem solving, time saving, knowledge sharing, synergy across units, reuse of resources, keeping abreast, innovation, retention of talents, and new strategies.
Best Context for Implementation	Best Context for Implementation
With teachers within a school or program who share the same groups of students, can analyze shared student work together, and who are in relatively close physical proximity.	With teachers from other locations/ programs/ organizations who have a general shared teaching experience and can learn from the diverse experiences of their peers.

* Sources: DuFour et al. (2010) and DuFour (2004)

** Source: Wenger (n.d.)

The terms PLC and CoP have “been used so ubiquitously that [they] are in danger of losing all meaning” (DuFour, 2004, as quoted in Vescio et al., 2008, p. 82). Wenger (n.d.) cautions, “a website in itself is not a community of practice. Having the same job or the same title does not make for a community of practice unless members interact and learn together” (p. 2). Further, DuFour (2004)

notes, “all combinations of individuals with any interest in schools” are not by virtue of that fact a professional learning community. Ed Tobia in “The Professional Teaching and Learning Cycle” (2007) emphasizes the importance of guidance and leadership sustained beyond the initial start-up phase of a PLC. Tobia observes that even when PLCs were structured around a book or

workshop “almost none of the work teachers were doing when they met as a ‘PLC’ resulted in any real, sustained change in what happened in classrooms.”

PLCs and CoPs are structured, intentional, and “honor both the knowledge and experience of teachers and knowledge and theory generated by other researchers” (Vescio et al., 2008, p. 89). In a PLC, “educators continually reflect on the ways they are working to embed student learning and teacher collaboration into the culture of the schools. . . . [They] critically examine the results of their efforts in terms of student achievement. . . [and are] able to articulate their outcomes in terms of data that indicate changed teaching practices and improved student learning” (DuFour, 2004, as paraphrased in Vescio et al., 2008). The combination of inside, direct practitioner experience and outside scholarly research helps safeguard against what can often be the limited view and scope of each. Both spheres have the potential to be self-referential and restricted by entrenched “paradigms of thinking” and “horizons of observation” that hinder teachers’ ability to discover creative and effective solutions to improve their practice (Little, 2003, as paraphrased in Vescio et al., 2008, p. 89).

Research

Vescio et al. (2008) provide an extensive review of the research on the effectiveness of participation in PLCs to change teaching practice.⁵ They find that while overall research suggests that participation in these communities leads to changed instructional practice and measureable impact on student achievement, the data for the latter is limited, and evidence for the former relies mainly on teachers’ self-reported perceptions about changes in their practice and “fail to describe specific changes in pedagogy” (Vescio et al., 2008, p. 84). However, changes in the teaching culture as a result of participation in a PLC are widely observed by researchers across the literature. “Change in the professional culture of a school is a significant finding” according to Vescio et al. (2008), “because it demonstrates that establishing a PLC contributes to a fundamental shift in the habits of mind that teachers bring to their daily work in the classroom” (p. 84). The changes include improved attitude toward student learning and an increase in student-centered instructional

methods. Vescio et al. (2008) cite eight studies that examined the relationship between teachers’ participation in a community of practice and student performance outcomes and found that measurable student achievement improved.

In the 2009–10 school year, groups of teachers sponsored by the Silicon Valley Mathematics Initiative and participated in a study on the impact of CoPs. The Lesson Study Project examined a CoP model in which teams of three to ten members collaborated with partner teams from various locations to compare implementation of the same classroom lesson. Teams met multiple times over the course of a semester to participate in a “lesson study cycle of inquiry.” This involved setting “learning goals for students, plann[ing] lessons to meet those learning goals, observ[ing] student[s] interacting with those lessons, reflect[ing] on student work, and revis[ing] lessons to more fully meet student learning goals” (Waterman, 2011, p. 17). Correlated with teachers’ participation in lesson study, a statistically significant impact was found in most areas of student knowledge as indicated by student test scores. In addition, researchers observed that “through the exchange process, diverse educator perspectives were brought together to reflect upon and refine lessons. Because teachers with a wide variety of experience and proficiencies thoughtfully analyzed student interactions with the lessons, the resulting refined lessons were better able to meet student needs in relation to the learning goals” (Waterman, 2011, p. 17).

Conditions for effective implementation include the following (Tobia, 2007):

- Sustain strong and consistent leadership.
- “Create an atmosphere and context for change.”
- “Develop and communicate a shared vision for change.”
- “Plan and provide resources.”
- Share and discuss evidence-based and standards-based research and tools.
- “Invest in professional development.”
- “Check progress.”
- “Give continuous assistance.”

⁵ The review by Vescio et al. (2008) selected key literature from an initial search returning 55 books, papers, and articles. Only 11 of these fit their rigorous criteria for empirical studies and are highlighted in depth—including data—in their literature review. See Vescio et al. (2008), Parameters for the Review of Research, p. 82.

Conclusion

As articulated in this brief, adult learners need student-centered, evidence-based instruction to be prepared for participation in a global economy that demands higher skills and flexible, creative thinking more than any time before. Toward this end, instruction should be aligned with the new standards and informed by assessments and accountability measures to help educators understand exactly what students are learning and where they need more support. This approach requires a paradigm shift for much of the adult education field, both in the classroom and in their approaches to professional learning.

High-quality, evidence-based professional development is an ongoing and iterative process grounded in student data. The only real goal of professional learning is to build educator knowledge and skills that will directly impact student learning: their strengths, goals, and instructional needs. Using assessment in both formative and summative ways, and using backwards design in planning informs standards-aligned instruction so

that educators can help their learners progress and transition successfully to career preparation or postsecondary education. Given the complexity of the paradigm shift, it is not surprising that many of the approaches to professional learning described in this brief involve a significant degree of collaboration among educators. Whether considering PLCs of educators in a single adult school or in CoPs across districts or states, both models are rooted in the belief that multiple perspectives and sustained, focused work together are needed to help address as complex an issue as enabling adult literacy students to become college and career ready. Collaborative approaches such as PLCs and CoPs provide a professional environment where educators with diverse experiences and common goals can share and learn from one another. “Because there are disparate experience levels and use of practice among educators, professional learning can foster collaborative inquiry and learning that enhances individual and collective performance” (Learning Forward, 2011, p. 3). Collaboration around student data and student needs provides an invaluable forum for nuanced and directed professional learning to increase student learning outcomes for each individual.

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