

Instructional Improvement through Professional Development

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Abstract:

An abundance of professional development (PD) opportunities exist for educators and administrators at all educational levels. Despite the availability of PD, many such workshops are unsuccessful (Fullan, 2001; Gordon, 2004). Increased accountability at the district and state or provincial levels requires that PD opportunities enhance teaching and lead to improved student learning. Presented here are three scholarly teaching models representing the steps involved with planning and executing effective instruction. The Instructional Process Model involves 12 steps that lead instructors through a circular process beginning with an assessment of an institution's PD needs and improvement plans and continuing through a reassessment of that institution's PD as part of a lifelong learning process. The Seven-Step Instructional Learning Orbit (SILO) involves a process that begins with an evaluation of students' needs that aligns instructional goals with students' abilities and learning styles and ends with a process of reflection that leads to the development of new goals and objectives. The Professional Development for Instructional Improvement (PDI) model places PD at the heart of the improvement process. The educational leader is an essential component in this model and acts as a catalyst in the improvement cycle by creating a capacity for change. The three models are offered as frameworks of scholarly teaching practice that educational leaders may consider when developing their own educational plans.

Key Words:

Instruction, Professional Development, Instructional Process Model, Seven-Step Instructional Learning Orbit, Professional Development for Instructional Improvement.

Introduction

An increased need for accountability and improved student learning has dramatically shifted the way policy makers at the national, state, and local levels view learning and instruction (Garet, Porter, Desimone, Birman, & Kwang, 2001). Given the current political climate of fiscal restraint, getting the best bang for the buck is an important consideration in any instructional improvement plan. Because teachers work directly with students, they are in a position to significantly influence student learning through the decisions they make, the planning they undertake, and the assessment strategies they adopt (Hunt, Touzel, & Wiseman, 1999). Scholarly teaching is one means by which teachers at all educational levels can enhance teaching through improved practice. Scholarly teaching involves a research-based approach which entails selecting the most effective teaching methods and utilizes observation and evaluation, peer involvement, and self-reflection (Richlin & Cox, 2004).

Critical to this process is educational leadership that promotes student learning through professional development (PD) that empowers teachers, cultivates a climate for learning, and fosters collaboration (Fullan, 2001). While effective PD provides teachers with the knowledge, skills, and dispositions necessary to improve learning opportunities for all learners, many PD opportunities fall short of this goal (Fullan, 2001; Gordon, 2004). PD, to be effective, must focus on the core elements of curriculum, instruction, and assessment; develop pedagogical practice based on learning theory, motivation, and classroom management; and promote a capacity for learning for all stakeholders.

Three instructional planning models are offered here as representations of the steps associated with planning and delivering instruction. Each is research-based and applicable in a real-world educational leadership setting. All three models follow the scholarly process suggested by Richlin (2001) that includes the teaching-learning connection and scholarly teaching which contributes to the scholarship of teaching. Our models are proposed as a starting point to offer a model for teachers to explore through practice followed by reflection and discussion in their specific context. Educational leaders may benefit from a review of each of these three models with consideration for application in their institutions and with their teaching professionals. Each model is useful on its own or may be integrated into the development of a new model.

Model 1: The Instructional Process Model (IPM)

The Instructional Process Model (IPM) is a twelve-step continuous circular process depicted as such because learning is an ongoing process (see Figure 1). The twelve steps are sequential and are grounded in the literature. Darling-Hammond (2005), Gersten and Dimino (2001), and Van Horn (2006) have noted the critical importance of educators having ongoing opportunities to discuss the impact of new practices—i.e., instructional strategies—on student learning in a supportive, collaborative atmosphere achievable through ongoing PD programs (PDP). Scholarly teaching, a critical process

in elevating teaching to the next level, involves observing a learning problem, establishing a baseline, studying the research, selecting the best teaching strategy for the particular problem and justifying that selection, collecting and evaluating data, reflecting on the results, and employing peer review (Richlin, 2001). Each of these steps is represented in the IPM. While substantial literature supports the inclusion of each step in the planning process, for the sake of brevity, only the most salient points have been included.

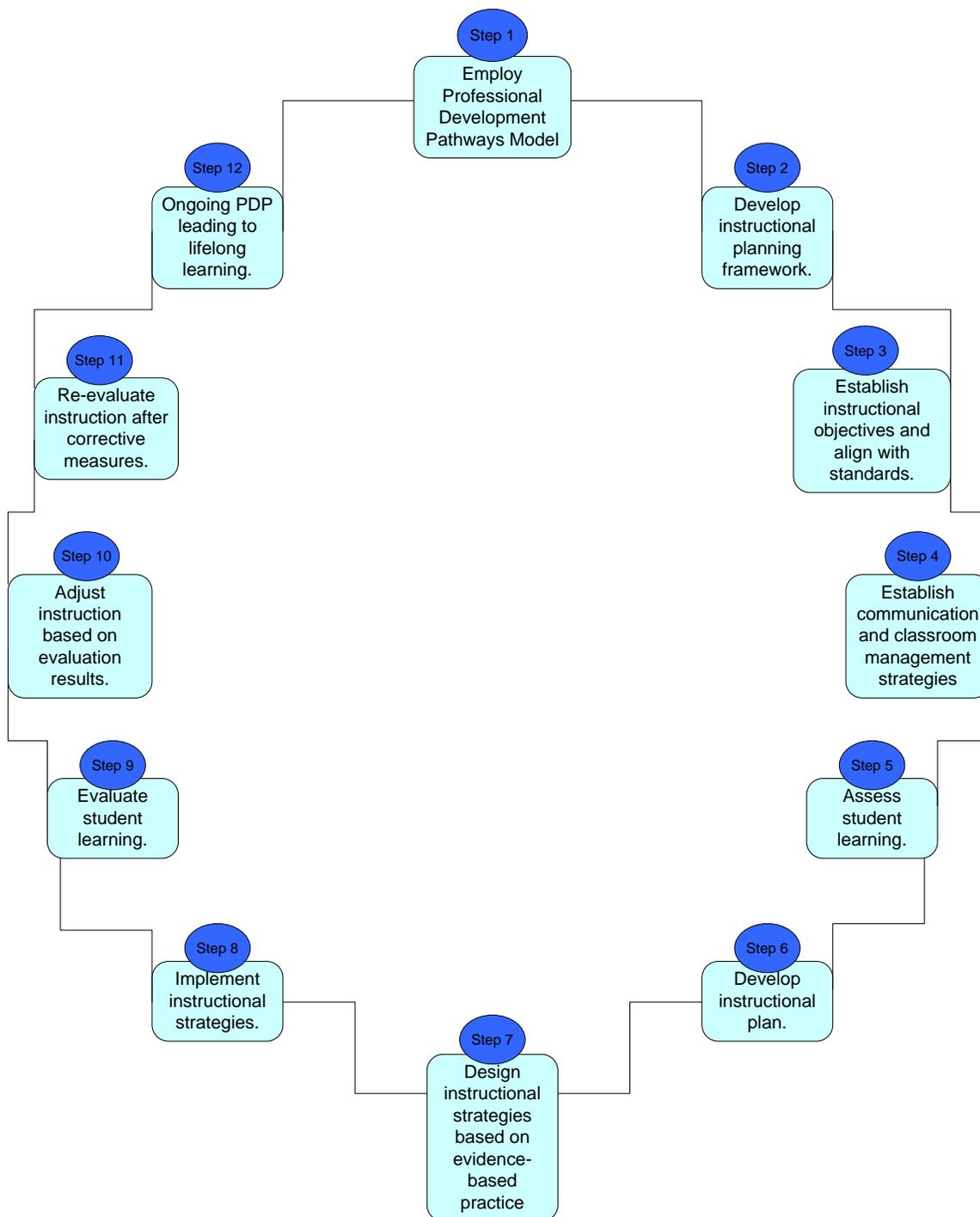


Figure 1. Instructional process model (IPM).

PD for instructional improvement.

The Professional Development Pathways Model (PDPM) is a flexible model that includes four steps: assessing needs, determining appropriate pathways, reflecting on PD and learning, and revisiting school improvement plans (SIP) (Lieberman & Wilkins, 2006, p. 127). To implement efficient programs for PD, leaders must identify the priority needs and objectives of the teachers (Opre & Opre, 2006). The development of questionnaires or surveys for teacher input assists in determining priority-learning needs. The needs assessment filters through three lenses: adult learning theory, teacher development levels, and state certification requirements (Lieberman & Wilkins, 2006). As the focus area is instructional improvement methods, pathways are selected to individualize learning needs. The role of reflection enables educators to review instructional practice to improve the teaching-learning process (Lieberman & Wilkins, 2006). The final step, revisiting school improvements plans (SIP), allows for reflection on strategies for improving instruction in conjunction with the larger needs of the school (Lieberman & Wilkins, 2006). Once this step is completed, the cycle begins again in a continuous process.

Development of a framework.

Critical to the instructional process is the development of a framework, which serves to bridge research, practice, and decision-making (Reyes, 1990; Schunk, 2004). Hunter's Model advises teachers what they should know and consider before deciding what to do (Davidson & O'Leary, 1990; Hunter, 1994). Hunter's model "incorporates psychological principles, cognitive research on brain functioning, and provides an organizational model for planning, implementing, and analyzing decisions affecting teaching and learning" (Hunter, 1994, p. 2).

Establish instructional objectives and align with standards.

Instructional objectives indicate the intended learning and student behavior that depict student achievement (Hunter, 1994) and are "the cornerstone of planning for effective instruction" (Shank, 2006, p. 4). Teaching to an objective "adds rigor to instruction but does not impose rigidity on teaching" (Hunter, 1994, p. 77). The use of objectives in teaching gives direction to the students and eliminates surprises in terms of what is expected (Hunt et al., 1999). Careful planning provides educators with a roadmap that takes students from where they are to where they need to be.

Establish communication and classroom management strategies.

Establishing rapport with students, having knowledge of subject matter, and using effective program delivery methods ensure student learning (Catt, Miller, & Schallenkamp, 2007). To teach effectively, educators must demonstrate expertise in planning and organization, maximize time on task, and handle overlapping learning activities (Hunt et al., 1999). A positive learning climate must be maintained and students must be held accountable for learning (Hunt et al., 1999). Student learning is optimized when teachers have highly developed communication skills and classroom management strategies.

Assess student learning.

Since classrooms consist of students of varying abilities, interests, motivation, and learning styles, a challenge exists for educators to develop activities that test students with differing needs (Hunt et al., 1999). Strong foundations of learning principles, growth, and development are necessary to enable educators to make sound decisions when selecting instructional strategies (Hunt et al., 1999). Designing assessments after establishing objectives enable educators to identify appropriate assessment methods and provide cues as to content and activities (Shank, 2006). Classroom assessment techniques (CATs) aid teachers in assessing student learning (Angelo & Cross, 1993).

Develop instructional plan.

Planning instruction is a complex process requiring knowledge of planning components (Hunt et al., 1999). Hunter (1994) considered expertise in planning to be one of the most influential factors of successful teaching. Planning involves consideration of any influences (physical, emotional, psychological, and social) that may affect student learning. Components of planning also involve deciding what to teach, how to teach, and how well the students should know the content after the lesson (Hunt et al., 1999). Additionally, researchers identified that students learn at a higher rate when an understanding exists of how concepts, facts, and principles are interrelated (Hunt et al., 1999).

Design instructional strategies based on evidence-based practice.

Best practices are individualized, evidence-based, and include research to optimize outcomes (Philipsen, 2004). Strategy design is based on desired outcomes and objectives (Hunt et al., 1999). Because students have varying levels of ability, different learning styles, and multiple intelligences, developing numerous strategies allows educators to create a toolbox of strategies (Mehigan, 2005). The use of direct methods, such as lecture, demonstration, and teacher-led discussions, and indirect methods, such as guided inquiry, panel discussions, and instructional games will aid learners in achieving expected outcomes (Hunt et al., 1999). Differentiated instruction, cooperative learning, inquiry, cause and effect, field trips, concept development, or memory models can assist in meeting a variety of learner needs (Gunter, Estes, & Schwab, 2003).

Implementation of instructional strategies.

Educators need knowledge of current research to implement evidence-based practices to facilitate effective instruction (Friedman, Harwell, & Schnepel, 2006; Hunt et al., 1999). The Review, Overview, Presentation, Exercise, and Summary (ROPES) format can assist educators in implementing instruction because of its flexibility. Review begins with attention-grabbing exercises, while overview introduces the content and real-world application. Presentation includes showing, telling, and doing activities (Hunt et al., 1999). Implementation involves a variety of strategies to maintain interest and motivation (Hunt et al., 1999). Exercise includes application of the learning and feedback, while summaries provide closure and ensure that key points are reinforced (Hunt et al., 1999).

Evaluation of student learning.

Evaluation is a tool based on expected learning that provides feedback and correlates to instructional objectives (Hunt et al., 1999). Formative and summative assessments enable the teacher to evaluate learning. Utilization of formative assessments is accomplished through assessing prior knowledge (through CATs), feedback strategies, and teaching for transfer of learning (Shepard, 2006). Summative assessments can include the use of portfolios, rubrics, tests, or a grading system that support learning to identify learning outcomes (Andrade, 2000; Shepard, 2006).

Adjust instruction based on evaluation results.

The instructor interprets the results, prepares a response, and presents the information to the student (Angelo & Cross, 1993). Friedman et al. (2006) contended that promptness in correcting student inadequacies is essential. Advising students promptly on errors is necessary to avoid repeated mistakes which could lead to student failure. The most effective corrective instruction is one-to-one tutoring because guidance is essential in the performance of corrective tasks (Friedman et al., 2006).

Re-evaluate instruction after corrective measures.

Assessment following the conclusion of learning tasks allows educators to identify what the student has learned and what they still need to learn (Hunt et al., 1999). Bloom (1976) noted this type of feedback-corrective procedure to be one of the most powerful determinants of learning. Supplementary testing, scaffolding, and additional remediation as necessary should follow based on evidence of need (Friedman et al., 2006). Ensuring that students have a satisfactory level of understanding before moving on is essential for continuous learning.

Ongoing PD leading to lifelong learning.

Instructional improvement describes opportunities that enable educators to advance performances in the classrooms (Arp, Woodard, & Walter, 2006, p. 213). Focusing on teaching skills, feedback on teaching and discussing issues related to the teaching-learning process are also a necessary element of the instructional improvement (Arp et al., 2006). Through the process of reflection, educators can determine their strengths and identify their weaknesses. By capitalizing on strengths and weaknesses, teachers ensure improvement in their skills. To be effective as educators, a lifelong need exists to seek additional knowledge and experiences that will enhance the teaching-learning process (Van Horn, 2006).

Model 2: Seven-Step Instructional Learning Orbit (SILO)

Instructional planning is not restricted to what instructors do before instruction, but instead is a constant process (Schunk, 2004, p. 262). Classroom educators engage in regular assessment throughout the teaching of each course, to ensure material is covered effectively and students are grasping and processing the material. SILO is intended to serve as a cyclical model of instructional planning and delivery (see Figure 2) to be employed with PD for instructional improvement. Just as a silo is used to store bulk food products to nurture animals, so is SILO a means of producing learning and storing knowledge that can cultivate lifelong learning.

SILO: Seven-Step Instructional Learning Orbit

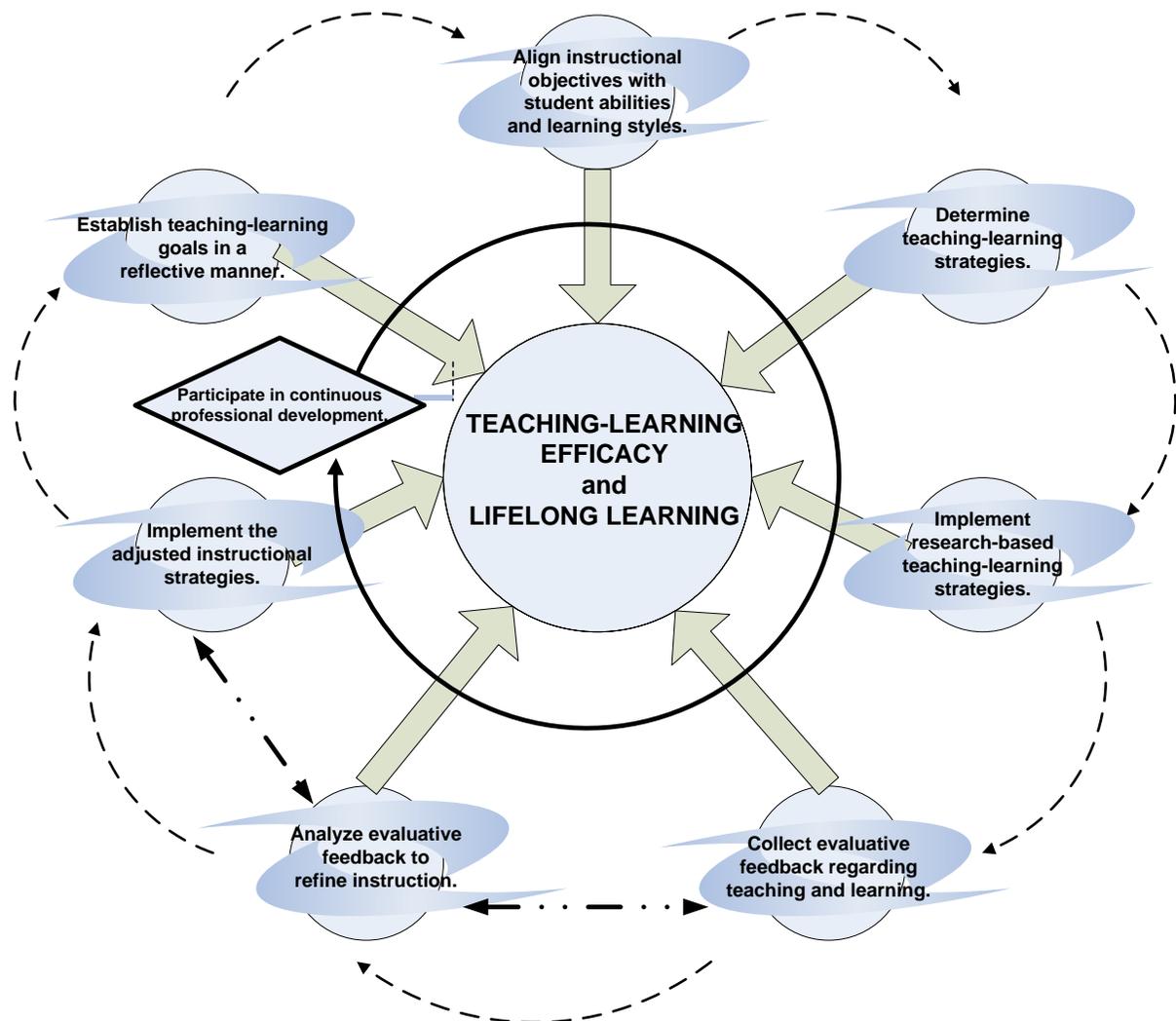


Figure 2. SILO: Seven-step instructional learning orbit: A PD effort for instructional improvement.

SILO Components Explanation

SILO's cyclical process is a comprehensive presentation of instructional planning and delivery bolstered by PD. The dotted arrows represent movement from one step to another and are not solid because the process is fluid. The solid arrows linking each step to the center of the model demonstrate the relationship between each of the seven steps, effective instruction, and lifelong learning. The solid arrow moving around the orbit represents continuous, meaningful PD. Each step symbolizes the orbit of learning, ultimately leading to educational efficacy and lifelong learning.

To ensure understanding and application of this model, teachers engage in PD guided by the flexible PD Pathways Model (PDDM) (Lieberman & Wilkins, 2006) integrated with learning communities (Niesz, 2007). PDDM involves needs assessment, determination of appropriate pathways for development and alignment with the school improvement plan (SIP), reflection, and revisiting of the PDDM and SIP (Lieberman & Wilkins, 2006). PDDM is especially appropriate in allowing educational leaders and teachers to address improvement specific to their school (Birman, Desimone, Porter, & Garet, 2000; Lieberman & Wilkins, 2006), making the PD more place-based (Meichtry & Smith, 2007), thus relevant.

SILO provides educational leaders and instructors with a strategy for PD rooted in scholarly teaching. Scholarly efforts must involve the establishment of clear goals; sufficient, appropriate objectives; suitable approaches; substantial, meaningful outcomes; effective presentation; and reflective critique (Glassick, Huber, & Maeroff, 1997). SILO aids the scholarly process by outlining such steps or factors. SILO guides educators in improving scholarly teaching while it also contributes to existing knowledge and findings in the field of education. Richlin (2001) suggested the latter contribution is the scholarship of teaching.

Teaching-learning goals aligned with student readiness.

The initial SILO step, establish teaching-learning goals in a reflective manner, is supported by research (Friedman et al., 2006; Gredler, 2005; Gunter et al., 2003; Hunt et al., 1999; Oliva, 2005; Schunk, 2004; Van Horn, 2006; Wiles & Bondi, 2007). Instructors must review the intended curriculum, determine objectives, and coordinate content to identify the most appropriate instructional goals, while exercising reflection (Schunk, 2004; Wiles & Bondi, 2007); teachers should do the same with PDP efforts, but relative to school goals and needs (Lieberman & Wilkins, 2006; Van Horn, 2006). A reflective, student-centered model, SILO dictates the significance of focusing on students' readiness and learning styles (Bastable, 2003; De Young, 2008; Guild & Garger, 1998; Hunt et al., 1999; Phillips, 2005; Vygotsky, 1998) and engaging in continuous PD to enhance instructional efforts (Birman et al., 2000; Gordon, 2004; Gunter et al., 2003, p. 352; Huang & Behara, 2007; Hunt et al., 1999; Lieberman & Wilkins, 2006; Muir & Beswick, 2007; Ragland, 2007).

Aligning PDP with the SIP is critical to teacher development (Lieberman & Wilkins, 2006), just like aligning instruction and student readiness, whereby teachers engage learners ensuring: active participation in learning, decision making about how students will learn, provision of clear learning goals, construction of new knowledge and skills based on existing knowledge and skills (Gagne, 1977), prompts for self-assessment (Griffiths, Oates, & Lockyer, 2007), and objectives based on students' prior knowledge (Gunter et al., 2003, p. 354; Hunt et al., 1999, p. 116; Lebrun, 2007). These efforts increase academic achievement and prompt students' self-reliance (Griffiths et al., 2007; Passman, 2001). When educators work in this manner, they are choosing particular approaches intentionally rather than implicitly, thus making the process scholarly rather than simply experience-based. Richlin (2001) indicated that explicit decisions about teaching approaches are scholarly, whereas implicit decisions are not. Research-based instructional strategies are most appropriate to scholarly teaching efforts and to employing the SILO model.

Research-based strategies and evaluation.

One research-based strategy for satisfying all learners' needs (Wiles & Bondi, 2007) by considering content and learners simultaneously (McTighe & Brown, 2005) is differentiated instruction (DI) (Brimijoin, Marquissee, & Tomlinson, 2003; Edwards, Carr, & Siegel, 2006; Levy, 2008; McTighe & Brown, 2005; Rock, Gregg, Ellis, & Gable, 2008; Tomlinson, 2005). Cooperative, constructivist, active, problem-based, and service learning are additional worthwhile instructional strategies (Gunter et al., 2003; Hunt et al., 1999; Oliva, 2005; Schunk, 2004; Wiles & Bondi, 2007). Other considerations include the time needed for strategy and lesson implementation, available resources, associated costs (Hunt et al., 1999; Shroyer, Yahnke, Bennett, & Dunn, 2007), and PD (Shroyer et al., 2007). Such considerations are also necessary to meaningfully and continuously employ PDP (Darling-Hammond, 2005; Lieberman & Wilkins, 2006).

To promote use of research-based instructional strategies, educational leaders should encourage teachers' research efforts, reflection, and PD (Lebrun, 2007; Muir & Beswick, 2007; Oliva, 2005, p. 555; Ragland, 2007; Van Horn, 2006). According to Richlin (2001), many institutions of higher education are already employing programs that encourage teaching scholarship. Instructors may implement strategic innovations evidenced to advance learning and satisfy environmental criteria (Guskey, 2003; Oliva, 2005, p. 555; Surry & Ensminger, 2004). Effective instruction is driven by continuous formative and summative assessments (Angelo & Cross, 1993; Diamond, 1998; Fearn & Farnan, 2007) and learning communities where teachers collaborate, discuss, and reflect on experiences (Birman et al., 2000; Van Horn, 2006). Teachers wanting to ensure success will employ formative assessment for instructional improvement (Angelo & Cross, 1993; Gordon, 2004) and summative assessment for final instruction results (Angelo & Cross, 1993; Guskey, 2005). Numerous valuable Classroom Assessment Techniques (CATs) exist for gathering data to improve instruction (Angelo & Cross, 1993; Wiggins, 1993).

CATs results are used to assess, reteach, and reinforce student learning (Angelo & Cross, 1993). Evaluative feedback is analyzed based on learning measurement standards (Diamond, 1998, p. 57). While not all students learn at the same pace, teachers must endeavor to maximize use of assessment results (Guskey, 2008; Schunk, 2004) and modify instructional practices to optimize student learning potential (Diamond, 1998, p. 58; Lebrun, 2007). Thus, resulting CATs recommendations should include a summary of appropriate actions to adapt instruction and a timeline for accomplishing these adjustments (Diamond, 1998, p. 151). Following the outlined time frame, instructors implement appropriate instructional modifications to improve student learning. Teachers can learn CATs via PD.

Analysis and refinement.

When instructional adjustments are executed, educators proceed once more through the remaining SILO steps. At times, teachers will need to revisit the evaluative stage as well as the analysis stage before repeating the remaining SILO steps. To advance teacher development and school improvement, educational leaders need to follow the PDPM steps with the final step involving revisiting the process (Lieberman & Wilkins, 2006). For PDPM and SILO to be effective, school districts must invest the necessary

time and other resources for teachers to engage in meaningful PD (Birman et al., 2000; Shroyer et al., 2007), including collaborative research initiatives (Darling-Hammond, 2005). Such initiatives will advance scholarly teaching as well as the scholarship of teaching, both of which will contribute to PD, lifelong learning, enhanced instruction, and overall educational improvement. SILO is one model developed for the purpose of promoting these educational improvement goals.

Model 3: PD for Instructional Improvement (PDI)

The ultimate goal of PD is to improve learning opportunities for all students by providing teachers with best practices research and opportunities to engage in ongoing meaningful collaboration and to develop pedagogical skills that will enable them to successfully deal with diversity (Hunt, et al, 1999). Model 3 is adapted from a model by Gordon (2004) and indicates that PD is at the heart of the educational improvement process. A brief explanation of the model follows.

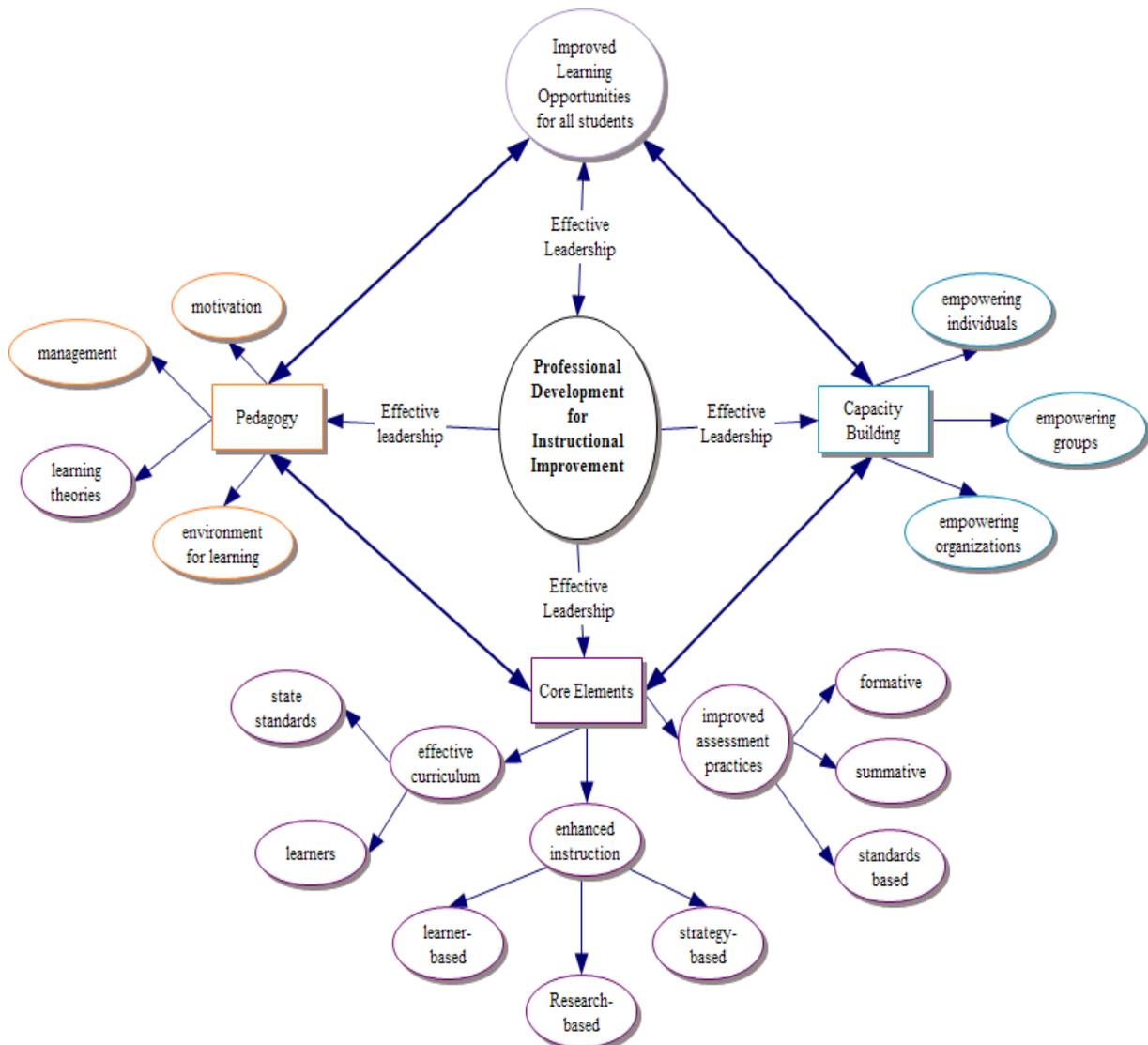


Figure 3. PD for instructional improvement model (PDI).

No particular order or sequence is suggested by this model. Instead the focus is on the inter-relationship between the facets of empowerment through capacity building, the core elements of curriculum, instruction, and assessment, and pedagogical practices based on learning theories, classroom management practices, motivational theories, and an effective learning environment. The school leader, through a transformational leadership model, enables the development of each facet by helping to create a collaborative culture, encouraging teacher development, and promoting a problem-solving approach (Gordon, 2004). Effective transformational leaders not only are the principal instructional models, they also are the principal learners in the process (Gordon, 2004). According to Moolenaar, Daly, & Slegers (2010), transformational leaders are a positive influence on a school's innovative climate. The better the relationship between principals and teachers, and the more sought after the principals for advice, the more likely it is that teachers will invest energy in change and attempt new teaching practices (Moolenaar et al., 2010).

Building capacity.

Capacity building indirectly affects student learning by increasing the potential of teachers as individuals or groups to improve learning opportunities (Gordon, 2004). The school capacity ensures that PD will lead to change that is sustained over time, will become institutionalized, and part of the school's culture (Garet et al., 2001). Newman and Wehlage (1995) defined school capacity as: a) teachers' knowledge, skills, and dispositions, b) the educational community, c) organizational integration and coherence of programs, d) resources such as materials, time, and access to experts or support personnel, and e) principal leadership (p. 145). Each aspect of school capacity is critical to the others (Fullan, 2001). The role of the principal is to ensure that the other factors continue to develop (Elmore, 2004). Capacity building involves the formation of a positive school culture where open channels of communication, trust, collegiality and collaboration, and a readiness for change flourish (Gordon, 2004).

Core elements.

An effectual curriculum based on state or local standards and the needs of the learners, effective instructional methods, and improved assessment practices (Gordon, 2004) comprise the core elements. Teachers must not only know and understand the curriculum, they must also be able to identify instructional goals and develop appropriate instructional objectives based on the needs of the learners (Hunter, 1994). The curriculum is enacted by the decisions teachers make in terms of instructional delivery, teaching strategies, and assessment methods (Hunt et al., 1999; Hunter, 1994). Instructional decisions must involve the readiness levels of the learners, their abilities, learning styles, and interests (Hunt et al., 1999; Hunter, 1994). Research shows that learners actively construct meaning and learning is achieved in different ways (McTighe & Brown, 2005). Learning is impacted by "the influence of intelligence, the power of prior achievement, the existence of a range of specific learning styles, personality, peer group influences, and the impact of home life and social context" (George, 2005). By differentiating instruction teachers can best meet the needs of all learners (Carolan & Guinn, 2007). Differentiation involves flexibility in terms of content,

process, and product (Levy, 2008) or varying teaching methods and expectations (Rock, Gregg, Ellis, & Gable, 2008).

The environment must engage learners rather than causing them to feel fearful or threatened (McTighe & Brown, 2005; Caine & Caine, 2001). By carefully considering the learners' needs and selecting programs and teaching methods which will produce the best results and by justifying their choices, educators may elevate teaching to a scholarly practice (Richlin, 2001). Through reflection and systematic assessment teaching practices may be adjusted to best meet the learners' needs (Richlin, 2001). Reflection is essential to scholarly teaching practice (Potter & Kustra, 2011). Through rigorous standards integrity is maintained.

Assessment must include formative as well as summative practices. Formative assessment informs teaching and occurs simultaneously with instruction (Tomlinson, 2008). Formative assessment serves many purposes including guiding teaching and learning, providing feedback, and teaching students to become self-regulative (Herman, Osmundsen, Ayala, Schneider, & Timms, 2006; Chappuis & Chappuis, 2008). Formative assessment may be difficult to accomplish and may require a great deal of time and as such, many teachers do not use formative assessment effectively (Herman et al., 2006). Through PD, teachers may increase their assessment literacy and as a result develop greater assessment efficacy. Formative assessment alone is not sufficient to improve learning; corrective measures such as reteaching, individual support, peer tutoring, cooperative teams, or alternate materials may be required to ensure content mastery or understanding (Guskey, 2008).

Pedagogy.

Schunk (2004) identified learning as "an enduring change in behavior or a capacity to behave in a given fashion, which results from practice or other forms of experience" (p. 2). Learning may be considered as a behavioral or cognitive process, or have elements of both (Gredler, 2005; Schunk, 2004). Teachers must have an understanding of learning theory to effectively plan and monitor instruction, motivate learners, and create an effective learning environment. An educational shift from teaching content to teaching process means that teachers must have a deeper understanding of the subjects they teach and how students learn (Garet et al., 2001). A comprehensive PD plan begins with the formation of a vision of learning goals, assessing where students are relative to those goals, and determining what changes will bridge the gap (Gordon, 2004). In the model depicted in Figure 3 double arrows represent the notion that improved learning is a goal and an outcome of effective PD.

The ultimate purpose of education is to help learners: (1) acquire important information and skills, (2) make meaning of that content, and (3) effectively transfer their learning to new situations both within school and beyond it (Wiggins & McTighe, 2008, p. 36, para. 6). Improved learning opportunities for students are created through the interrelationship of several important features, and critical to the development of these features is effective PD of teachers. Garet et al. (2001) found that "sustained and intensive PD is more likely to have an impact" (Garet et al., 2001, p. 935). Moreover, PD that focuses on academic content, active participation, and coherence has greater likelihood of success (Garet et al., 2001). Change in teaching practice is supported by

PD opportunities that not only enhance knowledge and skills, but also are linked to prior experiences, are associated with reform efforts, and promote collaboration and professional communication (Garet et al., 2001, p. 935).

School leaders can promote organizational learning by: helping teachers develop a common vision, providing internal and external support, modeling the processes, supporting self-reflection, and developing a collaborative culture and climate for learning (Stoll, Bolam, & Collarbone, 2002). To be effective, the teaching profession requires that teachers are also learners (Fullan, 2001). High quality PD is not a luxury, it is a necessity given today's political climate and financial restraint.

Determining Efficacy

The ultimate goal of a PD model is to ensure that planned activities occur in a systematic fashion, have the commitment of the educational community, and result in improved teaching and learning. Evidence of qualitative teaching improvement is shown by data collected through formal and informal teacher observations and evaluations, informal peer review, teaching portfolios and other artifacts, and course and teaching evaluations completed by students or other stakeholders. Satisfaction surveys completed by the teaching staff could be administered to ensure that professional activities undertaken best meet their needs. In short, the proof is in the pudding. A careful honest evaluation of the end results will show if the PD model is effectively reaching the desired goals and outcomes.

Effective PD raises teaching to a scholarly endeavor. According to Martin (2007), evaluation of scholarly teaching involves finding evidence of clear goals and expectations, teacher preparedness, effective use of teaching methods and resources, teachers' ability to adjust teaching to differing situations and students' needs, and improved results in standardized and other assessments. Martin (2007) also noted that proof of reflective practice was a requirement in evaluating scholarly practice. Maintaining anecdotal observations and records specific to degree of teacher participation in the process will provide additional evidence of program success.

Conclusion

PD is a critical process in educational improvement at all levels. In our experience, we have found that much of what passes as PD including one-day workshops or mini sessions without follow-up falls short of the mark. While momentarily inspiring, such one-shot PD sessions are often easily forgotten as the teacher is faced with the minutiae of the teaching day. Moreover, ineffective PD results in teachers who are poorly motivated to participate and become uninvolved in professional learning. The lack of commitment results in stagnation rather than growth. To be effective, PD activities require a systematic plan and a commitment from policy makers, educational leaders, and teachers to follow through. The most meaningful PD occurs over time, deals with specific issues, and elevates teaching to a scholarly practice. Effective PD empowers teachers to take greater control over their own professional growth. The use of a model provides the framework that ensures greater success in PD planning.

The three models presented here may each be used as is or as a starting point to determine new strategies for planning and implementing organizational change leading to improved teaching and student learning. Similarities among the models include the need for effective visionary school leaders, knowledge of expected learning outcomes aligned with core standards, effective assessment and evaluation practices, and sound pedagogy. Critical to this process is meaningful reflection focused on authentic evaluation as a means of improving practice. Each of the models emphasizes ongoing PD based on the needs of the learners, the teaching staff, the community, and governing institutions. Implicit in each model is the fact that instructional improvement is a continuous cyclical process that occurs over time. These models provide alternative ways of deriving similar outcomes. The importance of the models lies in the fact that a framework or starting point is provided by which educators may consider and develop their own model which best suits the needs of their institution, staff, and students.

Hunt et al. (2009) claimed that scholarly teaching is a reflective practice informed by research, the outcome of which is improved teaching and learning. Additionally, scholarly teaching is analytical and purposeful. Each of the models is representative of scholarly teaching because each involves evaluating existing educational research and determining which teaching methods and strategies best fit the educational context, implementing those strategies, maintaining careful records, assessing and evaluating, and reflecting upon results. Each of the plans suggests strategies for remediation, should they be necessary.

The educational climate for the K-12 system and post-secondary education has changed. No longer is education viewed only as the transmission of knowledge. Instead the focus of education has changed because of pressures from inside as well as outside the institution. Increased pressures of accountability, doing more with less, meeting the needs of diverse learners, making sense of rapidly proliferating information among other challenges have increased the complexity of teaching. No longer is teaching a static profession; instead, teaching is dynamic and vital to our future success in the 21st century. Teachers must not only teach but also learn on site. Scholarly teaching is a means of making that process effective. PD that enhances scholarly teaching is more likely to achieve success. Having a clearly articulated plan or model facilitates effective professional development which in turn results in instructional improvement and improved learning outcomes.

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