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Connecting Professional Development To Student Learning Gains

An argument is made that highly effective, research-based professional development can translate into improved student achievement and overall school effectiveness.

Introduction

Is there a direct link between teacher professional development and an increase in student achievement? There seem to be two answers to this rather obvious question: "Maybe" or "It depends". "Maybe" if we can find an accurate way to measure the impact of professional development. And, "It Depends" if the professional development chosen and the school climate are both aligned with our goals. Over the years, teachers and school leaders have engaged in some form of training beyond their formal preservice, university preparation programs. Whether referred to as in-service training, professional day, or staff or professional development this activity normally had one purpose: to improve participant's knowledge or skills. But, if this improvement in teacher skills actually occurred, did it necessarily translate into increased student learning?

My earliest experiences with professional development, at the start of my career over 40 years ago, as a new high school science teacher may not be so different from what many teachers experience today. During my first year teaching all teachers attended a mandatory "Professional Day". At this

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morning session we all filed into the school auditorium for a presentation by a local psychiatrist. I never really remembered what he talked about, but the session was memorable, nevertheless. In the middle of his presentation a worker walked onto the stage, next to speaker's podium, and began to tune the school piano to the great embarrassment of the superintendent. During my second year of teaching our district "Professional Day" had a similar, mandatory attendance format for all teachers, regardless of subject or grade level taught. This session was presented by Professor Hubert Alyea of Princeton, NJ. Alyea was, and still is, known for his fantastic

classroom demonstrations that made chemistry come alive. His session was highlighted by a demonstration of "rates of reaction" in which he prepared several large flasks of different, colorless solutions. He sang a song with lyrics that included all the Ivy League universities. The lyrics were timed to coincide with the change of color of the solutions to match the university color he was singing about. I'm pretty sure the first experience had no impact on my teaching. The second was certainly motivating and gave me ideas for my own lesson planning, but did it translate into increased student learning? What effect that second experience had on other faculty members was unknown. With an ever increasing demand for accountability for student achievement, how can we increase the chances that professional development will be transformed into increased student improvement? To answer this question we must examine three, more specific issues: Does professional development impact student learning? How we can judge the effectiveness of our professional development program? And, what professional development characteristics are linked to improved student learning?

Does Professional Development Influence Student Achievement?

Unfortunately there are still too many districts that see professional development as the one shot "Professional Day" of my earliest experiences. With limited teacher time to attend in-service training and limited financial resources to pay for this training, districts are searching for training that provides returns on these investments in time and money: returns in terms of increased student achievement.

Barry Fishman and his colleagues (April 29, 2000) maintain that professional development is all about a process of giving teachers new skills and concepts related to the work of teaching. Beyond this acquisition of new skills, however, is an assumption that this will be translated into improved student learning and achievement once the teacher applies these new skills or knowledge to practice in the classroom.

Not all professional development experiences are effective in bringing about student learning gains however, but studies are beginning to emerge that show that those that are research-based, thoughtfully conceived and delivered, and focused on the right things can, indeed, impact learning. Thomas Guskey (Winter 2005) has had considerable experience in examining the effect of professional development on student learning. He has found that powerful professional development will help the educator acquire the instructional procedures and scientifically researched-based strategies they need to help all students reach the articulated learning goals. It is important to focus on improving the teacher, according to Guskey, because true educational reform does

not take place at the state or district level. Unless, it occurs at the school building and classroom levels, student improvement is unlikely because improvement in education is defined by more students learning better, and that only occurs in the classroom.

Susan Murphy (Spring 2005), like Guskey, has discovered the importance of professional development that is focused squarely on increasing teachers' content and pedagogical content knowledge and teaching skills. She has also observed a shift by decision-makers to seeing and believing that the purpose of professional development is to enhance learning of challenging content for all students. Murphy feels

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that this shift has led to increased accountability and responsibility of professional development programs to better equip teachers to teach a rigorous curriculum to all students and to ensure that students have every opportunity to meet the highest standards. So, her work clearly establishes professional development as a tool to focus on building the knowledge and skills of teachers which becomes a link to enhanced student outcomes. Murphy also believes that the schools that carefully think about what kinds of professional development programs they need, based on student learning needs, are most successful in improving student learning. These schools analyze data to find out where their students are not succeeding and develop profes-

sional development plans related to enhancing teaching and learning in those areas. Schools can measure their return on investment of professional development dollars by gathering evidence of change in teacher practice and student learning outcomes.

This incremental effect professional development has on improving individual teacher skills designed to improve individual student learning can have a multiplying effect. Chapman and Harris (Winter 2004) believe that professional development will go beyond the classroom and impact total school improvement. They feel that the concept of the "teachers as learner" is key to school improvement and school effectiveness. They found that professional development was one of the most important factors in securing school improvement. And the opposite was as also true; a lack of investing in staff development over time resulted in an erosion of professional confidence and capacity and a major barrier to improving schools.

So, it would seem that there is compelling research to show that some kinds of professional development are effective in promoting student achievement.

How Can We Judge the Effectiveness of Our Professional Development?

How do we know if our staff training program did, in fact, bring about our intended learning outcomes? Let's examine a typical, hypothetical case. In this short vignette, the school in our example has had, for the past several years, fourth grade math scores much lower than scores in similar schools in the area. The summer before our fictional school opened this year the fourth grade teachers received inten-

sive training to help them understand how to align their lesson planning and classroom assessments to the new state content standards for fourth grade mathematics. And, to no one's complete surprise, fourth grade math scores slowly, but steadily improved over the course of that following school year. But did that training, in fact, produce those results? What else might have caused the improvement? Was the district involved in other, unrelated initiatives that should be considered? Did this year's fourth grade class have a different third grade curriculum, or teacher, which might have contributed to their progress? Where some influences outside the school at work, such as a change in demographics? We all know the multiple variables, both in and outside the school, which can affect learning positively and negatively. To isolate one factor as a cause for an observed effect becomes difficult, at best, for the typical school leader and decision-makers.

Beth Kubitskey (2003) and her colleagues agree that it is problematic to tease out learning outcomes with direct absolute correlation to teacher action. When the student experiences a curriculum designed to offer multiple methods of learning, isolating one activity and trying to link the learning to that activity is difficult. In addition, the teachers are offered multiple forms of professional development which complicates linking teacher learning to any one of the training experiences. However, these researchers feel that, although weakly linked, if we identify a positive learning outcome that may have come from a given activity, we can use this information to suggest continual inclusion of said activity in professional development. Likewise, students' failure to meet the learning objective may indicate a need

for modifications in the professional development linked to the teacher's implementation of the activity being studied. In other words, if you start to see learning gains among the targeted student population, keep doing what you were doing.

Guskey (March 2002) has found that effective evaluations of professional development require the collection and analysis of five critical levels of information:

- *Participants' Reactions* - Did the participants value the training? This is the lowest evaluation level.

- *Participants' Learning* - What did the participants learn as a result of the training? This is a bit more important, but it doesn't tell us what happened in the classroom.

- *Organization Support and Change* - Did the school or district leadership advocate for the training and support the participants in the training and in their application of these new skills in the classroom?

- *Participants' Use of New Knowledge and Skills* - Did the participants actually apply their new skills and knowledge in the classroom?

- *Student Learning Outcomes* - Most importantly, did the students improve as a result of their teachers' professional development (46-49)?

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This hierarchy of observed effects, from simple participant perceptions to the more complex actual student learning gains, is a convenient way to think about what kinds of evidence we must gather. Guskey explains that there are three important implications that stem from this model for evaluating professional development

- Considering each of these five levels is important

- Tracking effectiveness at one level tells you noting about the impact at the next

- Planning professional development to improve student learning requires that the order of these levels must be reversed (50).

For the last implication, we must consider that to have truly effective professional development designed specifically to improve student learning, we must first decide what is it that we want are students to learn and how will we know if they learned it? Guskey believes that if you don't know where you are going, it's very difficult to tell whether you've arrived. But if you clarify your goals up front, most evaluation issues fall into place.

Several years ago Stephen Covey (1989) said that it is critical to begin with the end in mind (which) means to start with a clear understanding of your destination. It means to know where you're going so that you better understand where you are now and so that the steps you take are always in the right direction... How different our lives are when we really know what is deeply important to us, and, keeping that picture in mind, we manage ourselves each day to be and to

do what really matters most. If the ladder is not leaning against the right wall, every step we take just gets us to the wrong place faster. We may be very busy, we may be very efficient, but we will also be truly effective only when we begin with the end in mind (98).

Another aspect of professional development makes it difficult to assess the effectiveness of our training. In a vast number of instances, teachers who attend professional development training sessions do so under their own initiative. In other words, they are not compelled to attend by either district or school leadership. While many teachers do participate as a result of district mandate, William Bobrowsky and his associates (March 2001) found that most research on professional development effectiveness is based on studies where the participants were self selected for training. Bobrowsky calls these willing participants "volunteers" who tend to be innovators, actively seeking new ideas that challenge their present thoughts on teaching and learning. They do not see change as a flaw in themselves and are risk-takers. The teachers who do not participate, he calls "non-volunteers". These may not be unwilling, but are likely unimpressed by the types of professional development currently offered them by research groups. Bobrowsky believes that professional development needs to resonate with the beliefs and attitudes of more than just the volunteer populations of teachers. Professional development needs to reach out to those teachers who have differing beliefs. He is further concerned about the professional development that is created and delivered by the individual school districts. His review of the re-

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search shows that this type of training tends to be piecemeal, fragmented and is not individualized to fit the needs of teachers.

If we know that certain types of professional development increase the chances that students will actually perform better and if we know how to begin thinking about evaluating our own professional development programs, what are the shared characteristics of these effective training programs?

Professional Development Characteristics Linked to Student Improvement

What can educators and decision-makers do to become better consumers of professional development? And, what are the characteristics of professional development offerings that are most closely correlated to improved student learning and what must schools do to help increase the chances that this training will, in fact, lead to improved student achievement? We know that a teacher satisfaction rating is the weakest indicator for predicting student outcomes, but there are other things that we can and should consider. For instance, Barry Fishman and his associates (April 29, 2000) have found that the school culture that plays a vital role in enhancing the effective-

ness of any faculty training program. Fishman and his colleagues contend that culture and norms of the system or school are related to the settings in which the innovation is to be carried out. For instance, does the school principal support the curriculum? These factors will influence the attitudes of teachers toward the innovation. If the principal attends the summer work session, a teacher is likely to think, "This is important to him/her, I should find a way to make this work!" (4). As a result, the school leadership plays an important role in setting the tone and making training an important part of school life.

Kent Peterson (Summer 2002) affirms the value of school culture in establishing an environment conducive to effective professional development. Peterson reports that school culture enhances or hinders professional learning. Culture enhances professional learning when teachers believe professional development is important, valued, and "the way we do things around here." Staff learning is reinforced when sharing ideas, working collaboratively to learn, and using newly learned skills are recognized symbolically and orally in faculty meetings and other school ceremonies. The most positive cultures value staff members who help lead their own development, create well-defined improvement plans, organize student groups, and learning in a variety of ways. In some schools, professional development is not valued, teachers do not believe they have anything new to learn, or they believe the only source for new ideas is in trial-and-error in one's own classroom. And Lynda Abbott's research (June 2005) supports the fact that the social context of a school is important for change. Teachers in her study were generally

acting as agents for change to other teachers and being actively involved in conducting formal or informal professional-practice instructional sessions for others.

Principals and other school leaders can and should shape school culture. As Hessel and Holloway (2002) point out,

> The school leader models the very essence of behaviors expected from teachers and students. The leader's knowledge base, enthusiasm, skill, and modeling inspire others to achieve at high levels. The leader encourages and models life-long learning and striving for excellence. Nothing less than the best effort is what is expected every day in every way from every person... The culture created through this (interdependent, connected) relationship fosters the achievement of the school's ultimate mission, success for all students (51).

Once a culture is established in our school that values both student and teacher learning we can address the specific elements of our professional development program that will impact student achievement. This type of training will focus on helping teachers change to address school and student goals in an evidence-centered way. This means we will want to engage teachers in training sessions that will be based on both teaching and student standards. We want teachers to begin to think about such things as: "How will my performance in the classroom change as a result of this training?" "What standards should I be addressing, and how will I know if I attained those standards?" We also want the teachers to think about how their stu-

dents will be different as a result of this training and will they be able to provide evidence of those changes and make judgments about that evidence. As Stephanie Hirsh (Winter 2004) points out, planning professional development to address how individuals must change to achieve district's goals is most effective when the training is results-driven, standards-based, and focused on educators' daily work. In a results-based focus, however, the training outcome is measured against what gains we expect in teacher or student performance. And finally, instead of considering the one shot workshop, one time a year professional development that focuses on the daily work of educators assures that the training is job embedded and relevant to practice, aligned with district or school goals, and uses actual student achievement data to inform the training and future planning.

Sparks and Hirsh (1997) believe that a fundamental shift must occur in the way most districts think about professional development. For instance, they advocate that professional development must:

- Be driven by clear, coherent strategic plans

- Focus on student needs and learning outcomes

- Include multiple forms of job-embedded learning

- Provide opportunities for study by teachers of the teaching and learning processes

- Include continuous improvement in performance for everyone who affects student learning

- Consider professional development as an indispensable process without which schools cannot hope to pre-

pare young people for citizenship and productive employment (12 -16).

Holloway's review of the literature (November 2003) establishes the importance of using (student) performance data because that allows educators to focus their valuable and limited professional development resources on the specific learning needs of students. Professional development centered on student achievement goals is meaningful to teachers, enabling them to base their instructional decisions on solid evidence of what students need. More important, such professional development supports the goal of ensuring the success of all students.

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Using student performance data becomes effective, according to the research of Lawrence Ingvarson and his colleagues (January 29, 2005) when, training sessions provide opportunities for teachers to focus on what students are to learn and how to deal with the problems students may have in learning that subject matter. In addition to paying attention to student data, they found that other factors proved valuable in effective professional development. For instance, effective training programs:

- focused on research-based knowledge about student learning of content

- included opportunities for teachers to examine student work collaboratively

- provided time for teachers to actively reflect on their practice and compare it with high standards for professional practice

- engaged teachers in identifying what they needed to learn, and in planning the learning experiences that would help them meet those needs

- provided time for teachers to test new teaching methods and to receive follow-up support and coaching in their classrooms

- included activities that led teachers to deprivatize their practice and gain feedback about their teaching from colleagues (15-16).

One of the key ingredients that the Ingvarson study found in effective professional development was follow-up and coaching after the training as the teacher attempted to apply this new knowledge to practice. Although Ingvarson encourages feedback after training, his study found how rarely designers built in opportunities for feedback and coaching in the workplace, despite research on their centrality to learning new and complex skills. Other key ingredients are time to think, analyze and talk about the specifics of what is going on in classrooms and what students are doing and learning. As other researchers have reported, Ingvarson also advocates a positive school learning culture were effective school administrators expect evidence of professional development an act in ways that demonstrate they value teacher learning.

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Conclusion

The right kinds of professional development for both teachers and school leaders can directly contribute to improved student performance. And, schools can become advocates for investment in increased professional development by capturing evidence of its effectiveness to show a return in learning of their investment in time and money. Research is beginning to emerge that points to some key ingredients in professional development for improved student learning. Some of these contributing factors include:

- focusing on teacher content knowledge and teaching skills

- considering student learning goals and the training outcomes in an evidence-based way

- creating a supportive culture for a learning community among all members of the community

- using student data to inform professional development planning and as part of the training itself

- embedding the training in the daily work of the teacher

- sustaining the training over time

- allowing for feedback and coaching

- providing opportunities for the teachers to participate in the planning of their training and to reflect on their practice

Effective, research-based professional development can contribute to the continuum of teacher training and support from preservice training to advanced practice. More importantly, however, high quality professional development can translate into improved student achievement and overall school effectiveness.

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