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ABSTRACT

All proposals for education reform include professional development as a significant element in promoting change. Questions have been raised about the effectiveness of professional development and its role in educational reform. Consequently, evaluation of professional development programs is increasing and expanding to include student achievement. Professional developers also are looking more closely at research on professional development. Research on professional development has focused mostly on its shortcomings and, in some cases, proposed solutions. Because of the variability between different educators' situations, it is difficult to know exactly what makes an effective professional development program. However, there are some guidelines. Change is both an individual and an organizational process. In planning and implementation, it is important to work for incremental change. Working in teams maintains support for change. It is necessary to include procedures for feedback on results. Continued followup, support, and pressure are necessary in professional development. Innovations presented in professional development must be integrated into existing educational frameworks. While professional development can be complex and difficult to measure in student achievement, it is possible to tailor programs to specific contexts. (Contains 109 references.) (JPT)

PROFESSIONAL DEVELOPMENT IN EDUCATION:

IN SEARCH OF THE OPTIMAL MIX

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Never before in the history of education has there been greater recognition of the importance of professional development. Every modern proposal to reform, restructure, or transform schools emphasizes professional development as a primary vehicle in efforts to bring about needed change. With this increased recognition, however, has come increased scrutiny. Questions are being raised about the effectiveness of all forms of professional development in education. And with these questions have come increased demands for demonstrable results. Legislators, policy makers, funding agencies, and the general public all want to know if professional development programs really make a difference. If they do, what evidence is there to show they are effective?

To address these questions professional developers are considering more seriously the issues of program evaluation. They are beginning to gather information more regularly on the outcomes of professional development activities. And this information is no longer limited to surveys of teachers' attitudes and practices. Increasingly, information on crucial measures of student learning is also being considered (Guskey & Sparks, 1991).

But perhaps more importantly, professional developers are looking more seriously at the research on professional development in education. They are examining what is known about the various forms of professional development, not only for teachers but for all those involved in the educational process. They also are considering what

is known about various organizational characteristics and structures, especially those that facilitate ongoing professional growth.

In this article we will consider what that research says about the effectiveness of professional development. In particular we will consider the mixed messages reformers are getting from this research and how we might make sense of those messages. We then turn to a series of guidelines for professional development, drawn principally from the research on individual and organizational change. Finally, we turn our attention to the potential impact of implementing these guidelines.

Research on Professional Development

The research base on professional development in education is quite extensive. For the most part, however, this research has documented the inadequacies of professional development and, occasionally, proposed solutions (Epstein, Lockard, & Dauber, 1988; Griffin, 1983; Guskey, 1986; Joyce & Showers, 1988; Lieberman & Miller, 1979; Orlich, 1989; Wood & Thompson, 1980, 1993). Still, reformers attempting to make sense of these various solutions quickly find themselves faced with seemingly incompatible dichotomies. For instance:

** Some researchers suggest that professional development efforts designed to facilitate change must be teacher specific and focus on the day-to-day activities at the classroom level (McLaughlin, 1990; Weatherley & Lipsky, 1977; Wise, 1991). Others indicate that an emphasis on individuals

is detrimental to progress and more systemic or organizational approaches are necessary (Tye & Tye, 1984; Waugh & Punch, 1987).

** Some experts stress that reforms in professional development must be initiated and carried out by individual teachers and school-based personnel (Joyce, McNair, Diaz, & McKibbin, 1976; Lambert, 1988; Lawrence, 1974; Massarella, 1980). Others emphasize the most successful programs are those guided by a clear vision that sees beyond the walls of individual classrooms and schools, since teachers and school-based individuals generally lack the capacity to conceive and implement worthwhile improvements on their own (Barth, 1991; Clune, 1991; Mann, 1986; Wade, 1984).

** Some reviewers argue the most effective professional development programs are those that approach change in a gradual and incremental fashion, not expecting too much at one time (Doyle & Ponder, 1977; Fullan, 1985; Mann, 1978; Sparks, 1983). Others insist the broader the scope of a professional development program, the more effort required of teachers, and the greater the overall change in teaching style attempted, the more likely the program is to elicit the enthusiasm of teachers and to be implemented well (Berman & McLaughlin, 1978; McLaughlin & Marsh, 1978).

These and other similar dichotomies in the professional development literature leave reformers feeling confused and inept. Many question how they can be expected to design and implement successful professional development programs when even researchers and experts in the field cannot agree on what should be done. While the critical issues seem clear, positive solutions remain illusive. As a result, reformers struggle desperately in their attempts to address educators' many and highly diverse professional development needs.

The Search For An Optimal Mix

A major problem in these efforts to identify elements of successful professional development programs is that they are generally looking for "one right answer." Most begin by gathering evidence from a variety of studies, investigations, and program evaluations. This evidence is then combined and synthesized to identify those characteristics that are consistently associated with some measure of effectiveness. The modern technique many researchers use to conduct such a synthesis is called "meta-analysis" (Hedges & Olkin, 1985). In most cases, program effectiveness is judged by an index of participants' satisfaction with the program or some indication of change in participants' professional knowledge base. Only rarely is change in professional practice considered and rarer still is the assessment of any impact on student learning (Guskey & Sparks, 1991). The result of such an effort is usually a prescription of general practices described in broad and nebulous terms. Unfortunately, such prescriptions offer little guidance to

practically minded reformers who want to know precisely what to do and how to do it.

What is neglected in nearly all of these efforts is the powerful impact of *context*. In fact, synthesizing the evidence across studies is done specifically to eliminate the effects of context, or to decontextualize the data. Yet as Clark, Lotto, and Astuto (1984); Firestone and Corbett (1987); Fullan (1985); Huberman and Miles (1984); and others suggest, the uniqueness of the individual setting will always be a critical factor in education. While there may be some general principles that apply throughout, most will need to be adapted, at least in part, to the unique characteristics of that setting.

Businesses and industries operating in different parts of the country or in different regions around the world may successfully utilize identical processes to produce the same quality product. But reforms based upon assumptions of uniformity in the educational system repeatedly fail (Elmore & McLaughlin, 1988). The teaching and learning process is a complex endeavor that is embedded in contexts that are highly diverse. This combination of complexity and diversity makes it difficult, if not impossible, for researchers to come up with universal truths (Guskey, 1993; Huberman, 1983, 1985).

We know with certainty that reforms in education today succeed to the degree that they adapt to and capitalize on this variability. In other words, they must be shaped and integrated in ways that best suit regional, organizational, and individual contexts: the local values, norms, policies, structures, resources, and processes

(Griffin & Barnes, 1984; McLaughlin, 1990; Talbert, McLaughlin, & Rowan, 1993).

Recognizing the importance of contextual differences brings light to the nature of the dichotomies described earlier. That is, successful change efforts in some contexts require professional development that focuses on teacher specific activities (Porter, 1986; Wise, 1991), while other contexts demand a more systemic or organizational approach (Sarason, 1990). In some contexts teacher initiated efforts work best (Weatherley & Lipsky, 1977), while in others a more administratively directed approach may be needed (Mann, 1986). And while some contexts demand that professional development take a gradual approach to change (Sparks, 1983), others require immediate and drastic alterations at all levels of the organization (McLaughlin, 1990).

Acknowledging the powerful influence of context also shows the futility of any search for "one right answer." Because of the enormous variability in educational contexts, there will never be "one right answer." Instead, there will be a collection of answers, each specific to a context. Our search must focus, therefore, on finding the *optimal mix* - that assortment of professional development processes and technologies that will work best in a particular setting.

We also must recognize, however, that the mix that is optimal in a particular setting changes over time. Contexts, like the people who shape them, are dynamic. They change and adapt in response to a variety of influences. Some of these influences may be self-initiated while others are environmentally imposed. Because of this

dynamic nature, the optimal mix for a particular context evolves over time, changing as various aspects of the context change. What works today may be quite different from what worked five years ago, but also is likely to be different from what will work five years hence.

Guidelines for Success

Because of the powerful and dynamic influence of context, it is impossible to make precise statements about the elements of an effective professional development program. Even programs that share a common vision and seek to attain comparable goals may need to follow very different pathways to succeed. The best that can be offered, therefore, are *procedural guidelines* that appear to be critical to the professional development process. These guidelines are derived from research on professional development specifically and the change process generally (Crandall et al., 1982; Fullan, 1991; Guskey, 1986; Huberman & Miles, 1984; Prochaska, DiClemente, & Norcross, 1992; McLaughlin, 1990). Rather than representing strict requirements, however, these guidelines reflect a framework for developing that optimal mix of professional development processes and technologies that will work best in a specific context at a particular point in time.

In reviewing these guidelines it is important to keep in mind that at present we know far more about professional development processes that fail than we do about those that succeed (Gall & Renchler, 1985; Showers, Joyce, & Bennett, 1987). There is no guarantee, therefore, that following these guidelines will result in successful professional development programs. Nevertheless,

substantial evidence indicates that neglecting the issues described in these guidelines at best will limit success and, at worst, will result in programs that fail to bring about significant or enduring change.

Guideline #1: Recognize That Change is Both an Individual *AND* Organizational Process

An important lesson learned from the past is that we cannot improve schools without improving the skills and abilities of the teachers within them. In other words, we must see change as an *individual process* and be willing to invest in the intellectual capital of those individuals who staff our schools (Wise, 1991). Success in any improvement effort always hinges on the smallest unit of the organization and, in education, that is the classroom teacher (McLaughlin, 1991). Teachers are the ones chiefly responsible for implementing change. Therefore professional development processes, regardless of their form (Sparks & Loucks-Horsley, 1989), must be not only relevant to teachers, but must directly address their needs and concerns (Hall & Loucks, 1978; Weatherley & Lipsky, 1977).

Yet to see change as *only* an individual process can make professional development an arduous and uncomfortable personal endeavor. Even changes that are empowering bring a certain amount of anxiety. And teachers, like professionals in many fields, are reluctant to adopt new practices or procedures unless they feel sure they can make them work (Lortie, 1975). To change or to try something new means to risk failure, and that is both highly

embarrassing and threatening to one's sense of professional pride (Pejouhy, 1990).

Furthermore, it is important to keep in mind that organizations, like individuals, also adopt change (Sarason, 1982; Shroyer, 1990; Waugh & Punch, 1987). To focus exclusively on individuals in professional development efforts, and to neglect factors such as organizational features and system politics, severely limits the likelihood of success (Berman, 1978; Clift, Holland, & Veal, 1990; Deal, 1987; Fullan & Pomfret, 1977; Parker, 1980). A debilitating environment can squash any change effort, no matter how much we exhort individuals to persist (Beane, 1991).

To focus on change as *only* an organizational matter, however, is equally ineffective . Fiddling with the organizational structure is a favorite device of educational policy makers and administrators because it communicates to the public in a symbolic way that they are concerned with the performance of the system. But as Elmore (1992) argues, evidence is scant that such structural change leads in any reliable way to changes in how teachers teach, what they teach, or how students learn. McLaughlin (1990) describes this as the difference between macro-level concerns and micro-level realities. To facilitate change we must look beyond policy structures and consider the embedded structure that most directly affects the actions and choices of the individuals involved.

The key is to find the optimal mix of individual *and* organizational processes that will contribute to success in a particular context. In some situations individual initiative and motivation might be quite high, but organizational structures stand

in the way of significant improvement. In others, progressive and supportive organizational structures may be in place, but the lack of personal incentives for collaboration and experimentation inhibit any meaningful change in classroom practice. Viewing change as both an individual *and* organizational process that must be adapted to contextual characteristics will help clarify the steps necessary for success in professional development.

Guideline #2: In Planning and Implementation, Think *BIG*, but Start *SMALL*

There is no easier way to sabotage change efforts than to take on too much at one time. In fact, if there is one truism in the vast research literature on change it is that the magnitude of change persons are asked to make is inversely related to their likelihood of making it (Guskey, 1991). Professionals at all levels generally oppose radical alterations to their present procedures. Hence, the probability of their implementing a new program or innovation depends largely on their judgment of the magnitude of change required for implementation (Doyle & Ponder, 1977; Fullan, 1982; Mann, 1978).

Successful professional development programs are those that approach change in a gradual and incremental fashion. Efforts are made to illustrate how the new practices can be implemented in ways that are not too disruptive or require a great deal of extra work (Sparks, 1983). If a new program does require major changes be made, it is best to ease into its use rather than expect comprehensive implementation at once (Fullan, 1985).

But while the changes advocated in a professional development program must not be so ambitious that they require too much too soon from the implementation system, they need to be sufficient in scope to challenge professionals and kindle interest (McLaughlin, 1990). Crandall, Eisemann, and Louis (1986) argue that the greatest success is likely when the size of the change is not so massive that typical users find it necessary to adopt a coping strategy that seriously distorts the change, but large enough to require noticeable, sustained effort. Modest, narrowly conceived projects seldom bring about significant improvement. This is what is meant by "think big."

The key again is to find the optimal mix. Professional development efforts should be designed with long term goals based on a grand vision of what is possible. A program might seek to have *all* students become successful learners, for example. At the same time, that vision should be accompanied by a strategic plan that includes specific incremental goals for three to five years into the future, gradually expanding on what is successful in that context and offering support to those engaged in the change (Fullan, 1992; Louis & Miles, 1990).

Guideline #3: Work in Teams to Maintain Support

The discomfort that accompanies change is greatly compounded if the individuals involved perceive they have no say in the process or if they feel isolated and detached in their implementation efforts. For this reason it is imperative that all aspects of a professional development program be fashioned to involve teams of individuals working together. This means that planning, implementation, and

follow-up activities should all be seen as joint efforts, providing opportunities for those with diverse interests and responsibilities to offer their input and advice (Massarella, 1980).

To insure that the teams function well and garner broad-based support for professional development efforts, it is important they involve individuals from all levels of the organization. In school improvement programs, for example, the best professional development teams include teachers, non-instructional staff members, building and central office administrators (Caldwell & Wood, 1988). In some contexts the involvement of parents and community members also can be helpful (Lezotte, 1989). Although the roles and responsibilities of these individuals in the professional development process will be different, all have valuable insights and expertise to offer.

Still, the notion of teamwork must be balanced. There is evidence to show, for instance, that large-scale participation during the early stages of a change effort is sometimes counterproductive (Huberman & Miles, 1984). Elaborate needs assessments, endless committee and taskforce debates, and long and tedious planning sessions often create confusion and alienation in the absence of any action. Extensive planning can also exhaust the energy needed for implementation, so that by the time change is to be enacted, people are burned out (Fullan, 1991). Furthermore, broad-based participation in many decisions is not always essential or possible on a large scale (Dawson, 1981; Hood & Blackwell, 1980). As Little (1989) argues, there is nothing particularly virtuous about teamwork or collaboration *per se*. It can serve to block change or inhibit progress just as easily as it can serve to enhance the process.

To facilitate change, teamwork must be linked to established norms of continuous improvement and experimentation, and these norms then guide professional development efforts. In other words, there must be a balance of teamwork and collaboration with the expectation that all involved in the process - teachers, administrators, and non-instructional staff members - are constantly seeking and assessing potentially better practices (Little, 1989). Such a balance promotes collegial interaction and acknowledges the naturally occurring relationships among professionals.

The most successful professional development programs, for example, are those that provide regular opportunities for participants to share perspectives and seek solutions to common problems in an atmosphere of collegiality and professional respect (Fullan, Bennett, & Rolheiser-Bennett, 1989; Little, 1982). Working in teams also allows tasks and responsibilities to be shared. This not only reduces the workload of individual team members, it also enhances the quality of the work produced. Additionally, working in teams helps focus attention on the shared purposes and improvement goals that are the basis of the professional development process in that context (Leithwood & Montgomery, 1982; Rosenholtz, 1987; Stevenson, 1987).

Guideline #4: Include Procedures for Feedback on Results

If the use of new practices is to be sustained and changes are to endure, the individuals involved need to receive regular feedback on the effects of their efforts. It is well known that successful actions are reinforcing and likely to be repeated while those that

are unsuccessful tend to be diminished. Similarly, practices that are new and unfamiliar will be accepted and retained when they are perceived as increasing one's competence and effectiveness. This is especially true of teachers, whose primary psychic rewards come from feeling certain about their capacity to affect student growth and development (Bredeson, Fruth, Kasten, 1983; Guskey, 1989; Huberman, 1992). New practices are likely to be abandoned, however, in the absence of any evidence of their positive effects. Hence, specific procedures to provide feedback on results are essential to the success of any professional development effort.

Personal feedback on results can be provided in a variety of ways, depending on the context. In professional development programs involving the implementation of mastery learning (Bloom, 1968, 1971), for example, teachers receive this feedback from their students through regular formative assessments (Bloom, Madaus, & Hastings, 1981). In mastery learning classrooms, formative assessments are used to provide students with detailed feedback on their learning progress and to diagnose learning problems. As such, they can take many forms, including writing samples, skill demonstrations, projects, reports, performance tasks, or other, more objective assessment devices such as quizzes or tests. These assessments are then paired with corrective activities designed to help students remedy any learning errors identified through the assessment.

But in addition to the feedback they offer students, formative assessments also offer teachers specific feedback on the effectiveness of their application of mastery learning. These regular checks on student learning provide teachers with direct

evidence of the results of their teaching efforts. They illustrate what improvements have been made and where problems still exist. This information then can be used to guide revisions in the instructional process so that even greater gains are achieved (Guskey, 1985).

Of course, results from assessments of student learning are not the only type of personal feedback that teachers find meaningful. Brophy and Good (1974) discovered that providing feedback to teachers about their differential treatment of students resulted in significant change in their interactions with students. Information on increased rates of student engagement during class sessions and evidence of improvements in students' sense of confidence or self-worth also have been shown to be powerful in reinforcing the use of new instructional practices (Dolan, 1980; Stallings, 1980). Information from informal assessments of student learning and moment-to-moment responses during instruction can provide a basis for teachers to judge the effectiveness of alternative techniques as well (Fiedler, 1975; Green, 1983; Smylie, 1988).

Yet despite its importance, procedures for gathering feedback on results must be balanced with other concerns. The methods used to obtain feedback, for example, must not be disruptive of instructional procedures. Furthermore, they should not require inordinate amounts of time or extra work from those engaged in the difficult process of implementation. Timing issues are also critical, for it is unfair to expect too much too soon from those involved in implementation. As Loucks-Horsley, Harding, Arbuckle, Murray, Dubea, and Williams (1987) point out, this is analogous to pulling a plant out of the ground

each day to check its roots for growth. In other words, there must be a balance, or optimal mix, in which the need for feedback is adapted to the characteristics of the program and the setting. Feedback procedures must focus on outcomes that are meaningful to the professionals involved, but also timed to best suit program needs and the constraints of the context.

Guideline #5: Provide Continued Follow-Up, Support, and Pressure

Few persons can move from a professional development experience directly into implementation with success. In fact, few will even venture into the uncertainty of implementation unless there is an appreciation of the difficulties that are a natural part of the process (Fullan & Miles, 1992). Fitting new practices and techniques to unique on-the-job conditions is an uneven process that requires time and extra effort, especially when beginning (Berman & McLaughlin, 1978; Joyce and Showers, 1980). Guidance, direction, and support with pressure are crucial when these adaptations are being made (Baldridge & Deal, 1975; Fullan, 1991; Parker, 1980; Waugh & Punch, 1987).

What makes the early stages of implementation so complicated is that the problems encountered at this time are often multiple, pervasive, and unanticipated. Miles and Louis (1990) point out that developing the capacity to deal with these problems promptly, actively, and in some depth may be "the single biggest determinant of program success" (p. 60). And regardless of how much advanced planning or preparation takes place, it is when professionals

actually implement the new ideas or practices that they have the most specific problems and doubts (Berman, 1978; Fullan & Pomfret, 1977).

Support coupled with pressure at this time are vital for continuation. Support allows those engaged in the difficult process of implementation to tolerate the anxiety of occasional failures. Pressure is often necessary to initiate change among those whose self-impetus for change is not great (Airasian, 1987; Huberman & Crandall, 1983). In addition, it provides the encouragement, motivation, and occasional nudging that many practitioners require to persist in the challenging tasks that are intrinsic to all change efforts.

Of all aspects of professional development, this is perhaps the most neglected. It makes clear that to be successful, professional development must be seen as a *process*, not an event (Loucks-Horsley, et al. 1987). Learning to be proficient at something new or finding meaning in a new way of doing things is difficult and sometimes painful. Furthermore, any change that holds great promise for increasing individuals' competence or enhancing an organization's effectiveness is likely to be slow and require extra work (Huberman & Miles, 1984). It is imperative, therefore, that improvement be seen as a continuous and ongoing endeavor (McLaughlin & Marsh, 1978).

If a new program or innovation is to be implemented well, it must become a natural part of practitioners' repertoire of professional skills and built into the normal structures and practices of the organization (Fullan & Miles, 1992; Miles & Louis, 1987). For advances to be made and professional improvements to continue, the new practices and techniques that were the focus of the

professional development effort must become used almost out of habit. And for this to occur, continued support and encouragement, paired with subtle pressure to persist, are essential.

This crucial support with pressure can be offered in a variety of ways. McLaughlin and Marsh (1978) recommend that local resource personnel or consultants be available to provide on-line assistance when difficulties arise. They emphasize, however, that the quality of the assistance is critical, and that it is better to offer no assistance than poor or inappropriate assistance. Joyce and Showers (1988), suggest that support for change take the form of coaching -- providing practitioners with technical feedback, guiding them in adapting the new practices to their unique contextual conditions, helping them to analyze the effects of their efforts, and urging them to continue despite minor setbacks. In other words, coaching is personal, practical, on-the-job assistance, that can be provided by consultants, administrators, directors, or professional colleagues. Simply offering opportunities for practitioners to interact and share ideas with each other also can be valuable (Massarella, 1980; McLaughlin & Marsh, 1978).

Here again, the notion of balance is critical. In some contexts a substantial amount of pressure from leaders may be necessary to overcome inertia, recalcitrance, or outright resistance (Mann, 1986). It is possible, for example, when making decisions about instructional practices to overemphasize teachers' personal preferences and underemphasize concern about student learning (Buchmann, 1986). Yet in contexts where there is considerable individual initiative, such pressure may be seen as a strong-armed

tactic and unprofessional (Leiter & Cooper, 1978). The key is to find the optimal mix for that context, understanding well the interpersonal dynamics of the individuals involved and the culture of the organization in which they work.

Guideline #6: Integrate Programs

More so than any other profession, education seems fraught with innovation. In fact, innovations seem to come and go in education about as regularly as the seasons change. Each year new programs are introduced in schools without any effort to show how they relate to the ones that came before or those that may come afterward. Furthermore, there is seldom any mention of how these various innovations contribute to a growing professional knowledge base. The result is an enormous overload of fragmented, uncoordinated, and ephemeral attempts at change (Fullan & Miles, 1992).

The steady stream of innovations in education causes many practitioners to view all new programs as isolated fads that will soon be gone, only to be replaced by yet another bandwagon (Latham, 1988). This pattern of constant yet unrelated, short-term innovations not only obscures improvement and provokes cynicism, it also imposes a sense of affliction. Having seen a multitude of innovations come into and go out of fashion, veteran teachers frequently calm the fears of their less experienced colleagues who express concern about implementing a new program with the advice, "Don't worry; this too shall pass."

If professional development efforts that focus on the implementation of new innovations are to succeed, they must include

precise descriptions of how these innovations can be integrated. That is, each new innovations must be presented as part of a coherent framework for improvement. It is difficult enough for practitioners to learn the particular features of one innovation, let alone to figure out how it can be combined with others. And because no single innovation is totally comprehensive, implementing only one will leave many problems unresolved. It is only when several strategies are carefully and systematically integrated that substantial improvements become possible. Doyle (1992), Sarason (1990), and others also emphasize that coordinating programs and combining ideas releases great energy in the improvement process.

In recent years several insightful researchers have described how different combinations of innovations can yield impressive results (e.g. Arredondo & Block, 1990; Davidson & O'Leary, 1990; Guskey, 1988, 1990a; Mevarech, 1985; Weber, 1990). In addition, several frameworks for integrating a collection of programs or innovations have been developed that practitioners are finding especially useful. One example is a framework developed by Marzano, Pickering, and Brandt (1990) based on various dimensions of learning. Another developed by Guskey (1990b) is built around five major components in the teaching and learning process. These frameworks allow skilled practitioners to see more clearly the linkages between various innovations. They also offer guidance to the efforts of seriously minded reformers seeking to pull together programs that collectively address the problems that are most pressing in a particular context.

A crucial point here is that the particular collection of programs or innovations that is best undoubtedly will vary from setting to setting. As a result, the way linkages are established and applications integrated will need to vary as well. Fullan (1992) stresses that, "schools are not in the business of managing single innovations; they are in the business of contending with multiple innovations simultaneously" (p. 19). By recognizing the dimensions of learning a particular innovation stresses or the components of the teaching and learning process it emphasizes, savvy educators can pull together innovations that collectively address what is most needed in that context at a particular point in time.

Conclusion

The ideas presented in these procedural guidelines are not really new and certainly cannot be considered revolutionary. They may, in fact, appear obvious to those with extensive experience in the professional development process. Yet as self-evident as they may seem, it is rare to find a professional development program today that is designed and implemented with thorough attention to these guidelines or the factors that underlie them. It is rarer still to find professional development programs that evaluate implementing these guidelines in terms of the effects on student learning.

What is evident from these guidelines is that the key to greater success in professional development, which translates to improvements in student learning, rests not so much in the discovery of new knowledge, but in our capacity to use deliberately and wisely the knowledge we have. This is true regardless of whether professional

development is viewed as an integral part of one's career cycle, as a self-directed journey to find meaning and appreciation in one's work, or as a structured effort to keep professionals abreast of advances in their field. To develop this capacity requires a clear vision of our goals and a thorough understanding of the process by which those goals can be attained.

In the minds of many today there is a clear vision of what would be ideal in professional development. That ideal sees educators at all levels constantly in search of new and better ways to address the diverse learning needs of their students. It sees schools as learning communities where teachers and students are continually engaged in inquiry and stimulating discourse. It sees practitioners in education respected for their professional knowledge and pedagogic skill. The exact process by which that vision can be accomplished, however, is much more blurred and confused. The reason, as we have argued here, is that the process is so highly contextualized. There is no "one right answer" or "one best way." Rather, there are a multitude of ways, all adapted to the complex and dynamic characteristics of specific contexts. Success, therefore, rests in finding the optimal mix of process elements and technologies that then can be carefully, sensibly, and thoughtfully applied in a particular setting.

While it is true that the ideas presented here offer a very optimistic perspective on the potential of professional development in education, these ideas are not far-fetched. They illustrate that although the process of change is difficult and complex, we are beginning to understand how to facilitate that process through

pragmatic adaptations to specific contexts so that ongoing professional growth and improved professional practice are ensured. Doing so is essential to improved learning for students.

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