

A Collaborative Professional Development Model  
for Teachers of Students with Special Needs

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## Introduction

This presentation emerges out of a set of studies investigating effective interventions for secondary students with learning disabilities. In these projects two goals have been central: (1) evaluating instructional principles in terms of their ability to support students with learning challenges, and (2) co-constructing a model for in-service professional development that promotes meaningful and long-term shifts in practice. While complementary papers report student outcomes associated with our intervention (see Beckingham, Novak, Jarvis, & Butler, 2002; Butler, Jarvis, Beckingham, Novak, & Elaschuk, 2001), this paper describes the evolution of a professional development model with promise for supporting positive educational change. In the sections that follow, we begin with an introduction to the theoretical principles underlying our professional development model. Subsequently, we describe findings related to the effectiveness of our model as applied within a two year collaborative research partnership. We close with a discussion of our current directions and implications for in-service professional development.

### Theoretical Principles Underlying the Professional Development Model

In recent discussions of in-service professional development, researchers contrast traditional approaches with newer, more collaborative models. To draw the contrast somewhat starkly, traditional models are those that provide one-stop workshops, with a top-down approach to disseminating knowledge, in which teachers are provided with information and resources that they are expected to translate meaningfully into practice (Gersten et al., 1997). In contrast, collaborative models emphasize the importance of sustained support that assists teachers to try new ideas, reflect on outcomes, and reconstruct knowledge about teaching and learning over time (e.g., Borko & Putnam, 1998; Perry, Walton, & Calder, 1999). Traditional models have been criticized for resulting in surface level or shallow implementation of instructional principles as opposed to deep rooted changes in practice (Gersten, 1995; Englert & Tarrant, 1999; Henry et al., 1999), and for promoting little sustained use of innovations, even when those innovations are effective (Gersten, Vaughn, Deshler, & Schiller, 1997).

Another critique of traditional models is a focus on conveying procedural skills (Palincsar, 1999). But a procedural focus runs the risk of casting teachers as “technicians” rather than as reflective decision makers who base decisions on understandings about teaching and learning. Emerging professional development models emphasize that teachers are professionals, not merely technicians, and that teaching is an intellectual activity, requiring complex, contextualized decision making (Ball, 1995; Palincsar, 1999; Palincsar, Magnussen, Marano, Ford, & Brown, 1998). Further, instructional principles as applied in practice cannot be reduced to a series of algorithms, and numerous concrete practices can be associated with a faithful implementation of underlying principles (Palincsar et al., 1998). A key implication is that instructional change may require a shift in conceptual knowledge about teaching principles on which decisions can be founded, not just the development of procedural skills (Gersten et al., 1997).

Traditional models have also been criticized for making false distinctions between formalized (“external”) and practical (“internal”) knowledge (Bos, 1995; Palincsar et al., 1998). The assumption is that construction of formalized knowledge is the purview of researchers while teachers’ roles are to implement research findings (Gersten et al., 1997; Perry et al., 1999). An alternative view is that both teachers and researchers bring combinations of formalized and practical knowledge to classrooms as they seek to make instructional change. Further, both teachers and researchers can be engaged in examining and reflecting on practice with the aim of

constructing both formal and practical knowledge. Thus, emerging approaches to professional development seek to find the interface (and blur distinctions) between “internal” (practice) and “external” (research) knowledge (Ball, 1995; Bos, 1995; Gersten et al., 1997; Henry et al., 1999; Palincsar et al., 1998; Schumm & Vaughn, 1995). Professional development may be better conceived as teachers (with or without researchers) constructing new conceptions about teaching and learning (formally and/or informally) that are grounded in teaching practice.

### Professional Development as Collaborative Inquiry

Collaborative models of professional development engage teachers in joint inquiry about teaching as a means of shifting instructional practices. At the heart of most descriptions is teachers’ collaborative problem-solving in pursuit of common goals. Groups of teachers and/or researchers work together locally (within schools) or peripherally (e.g., in meetings separate from immediate practice) to develop new ways of teaching. Individually or collectively, teachers try out new ideas in classrooms and monitor the success of their efforts. They come together to review their instruction, talk about outcomes, and critically reflect on their teaching (Ball, 1995; Englert & Tarrant, 1995). Over time, within collaborative problem-solving groups, teachers develop a shared language for talking about teaching and co-construct knowledge within a discourse community (Bos, 1995; Englert & Tarrant, 1995).

A “communities of practice” framework has often been used to describe collaborative professional development initiatives (Englert & Tarrant, 1995; Henry et al., 1999; Lave & Wenger, 1991; Palincsar et al., 1998; Perry et al., 1999). Communities of practice have been characterized as “intellectual groups who share goals/purposes and engage in planning, enacting, and reflecting. In these communities learning proceeds from action, expertise is distributed, and knowledge is socially constructed” (Perry et al., 1999, p. 218). Key assumptions are that knowledge construction about teaching and learning emerges from reflection on practice, that individuals benefit from opportunities to share expertise while engaged in a common pursuit, and that the knowledge constructed transactionally (Pressley et al., 1992) in discourse communities is richer than knowledge a teacher might construct on his or her own.

On a practical level, collaborative inquiry may be beneficial for teachers by offering structured opportunities for reflection not typically available to practicing teachers. It is difficult to make meaningful shifts in practice without stepping away from immediate demands or having time to reflect on teaching. Further, working with others has the potential to sustain momentum through inevitable challenges. Rather than abandoning a new initiative when problems arise, collaborative communities may generate energy and enthusiasm that fuels persistence with innovations. A structured approach to implementing ideas and tracing outcomes may also ensure that new initiatives remain a priority.

### Professional Development and Self-Regulated Learning

Discussions about collaborative professional development tend to focus on the manner in which learning communities shape and support teachers’ co-construction of new ways of teaching. At the same time, it is useful to consider the learning processes of the individual teachers working within collaborative communities. A model of self-regulated learning can be helpful in that regard (Butler & Winne, 1995; Zimmerman, 1994). Descriptions of self-regulated learning by students in classrooms identify key learning activities as students: interpreting tasks to define task goals, selecting, adapting, or even inventing strategic approaches that match task demands, self-evaluating outcomes, and revising learning approaches adaptively. Research suggests that students’ self-

regulated learning can be enhanced by engaging them in interactive discussions in which they reflect on their learning processes (e.g., Butler, 1995; 1998-c; Palincsar & Brown, 1984; Pressley et al., 1992). Students also are more likely to sustain use of new learning strategies if instructors involve students in strategy construction, given task goals (Butler, 1993; 1995; 1998-c) and situate discussions about strategies in the context of meaningful work (Palincsar & Brown, 1988; Pressley et al., 1992).

Descriptions of emerging professional development models suggest that, in the context of collaborative efforts, teachers are supported to self-regulate *their* learning about teaching. For example, note how teachers' learning activities within collaborative groups parallel descriptions of students' self-regulated learning. Teachers are typically engaged in activities that promote "ongoing reflection on practice and underlying assumptions" (Borko & Putnam, 1998, p. 3). They are supported to identify instructional principles associated with "best practices" (Ball, 1995; Englert & Tarrant, 1995; Palincsar et al., 1998), plan activities consistent with principles (i.e., constructing instructional strategies), enact their plans in practice, monitor outcomes, and critically reflect on their efforts (e.g., Henry et al., 1999; Palincsar et al., 1998; Perry et al., 1999). Second, just as students are often supported to self-regulate learning through interactive discussions focused on meaningful work, in collaborative models teachers learn to self-regulate their learning (about teaching) together by revising and reflecting on teaching.

Significantly, in the projects described here, researchers' and teachers' shared enterprise was to learn how to promote students' reflective self-regulation as they completed meaningful academic work (Butler, 1998-b; Butler, Jarvis, et al., 2001). Thus, the teachers' goal was to learn how to engage *students* in interactive discussions that helped them learn how to reflectively guide their own (learning) activities based on a clear view of (task) goals, and to critically monitor outcomes so as to re/co-construct knowledge about effective (learning) processes. Not accidentally, the assumptions and instructional principles underlying our in-service structure paralleled the principles teachers were striving to learn (see Butler, 1995; 1998-a). Our task was to engage teachers in interactive discussions that helped *teachers* learn how to reflectively guide their own (teaching) activities based on a clear view of (instructional) goals, and to critically monitor outcomes so as to re/co-construct knowledge about effective (teaching) processes.

Thus, emerging professional development models have the potential, not just to promote teachers' use of effective instructional procedures, but to support them to reflect on and revise teaching practices so as to construct new conceptual knowledge. It follows that professional development need not be collaborative; even in the absence of collaborative support, teachers can improve practice by systematically, planfully and reflectively self-regulating their learning about teaching. However, as noted above, there are also multiple benefits to working collectively to define and revise one's practices. As described earlier, social interaction may be supportive of both students' and teachers' development of self-regulated approaches to learning (Harris & Graham, 1996; Palincsar & Brown, 1988; Pressley et al., 1992). Further, through social interaction, benefits may be accrued in the richness of conceptual understandings co-constructed with others and sustained commitment to a challenging innovation.

### Theoretical Principles Applied in Our Project

As in initiatives defined using a communities of practice framework, our goals were to assist teachers in identifying principles underlying "best practices," enacting principles in context, critically reflecting on outcomes, and (re)constructing knowledge about teaching and learning based on new experiences (Borko & Putnam, 1998). To this end, we established communities of practice within and across schools within which teachers

worked together and with researchers to try an instructional innovation. Expertise within groups was “distributed,” but we considered that both teachers and researchers brought different combinations of formalized and practical knowledge to our collaborative efforts. Further, communities were designed to offer sustained support to teachers across a two-year period.

In our communities, the common goal was to adapt an instructional model, the “Strategic Content Learning” (SCL) approach, for use in secondary classrooms. At the time our project began, SCL had been empirically validated at the post-secondary level (Butler, 1993; 1995; 1998-a), but little research existed on how to adapt the model for use with adolescents. Note that, although most writers have stressed the importance of defining best practices to provide criteria for monitoring and judging action (Ball, 1995; Borko & Putnam, 1998; Henry et al., 1999; Palincsar et al., 1998; Perry et al., 1999), there is a danger that arises if communities of practice are centered on helping teachers learn a given intervention. It is possible that such a goal can lead to a technical view of teaching, a “top-down” approach, or too narrow a focus on “procedures.” However, if boundaries between practical and formalized knowledge are blurred, and the best formalized knowledge is grounded in practice, then a question arises as to how to take lessons learned from one practical context to a different instructional setting. In our projects, we approached this problem by using SCL to establish common goals and instructional principles. Then teachers and researchers co-constructed instructional strategies for situating goals and principles in classrooms (and in that context, recursively re/co-constructed knowledge about goals, principles, and procedures). We hoped this approach would promote teachers’ on-going and active reflection and reconstructions of knowledge about teaching as a foundation for making instructional change.

In the sections that follow, we describe our project in more detail and report on our research findings. Across the two years of the project, we judged the success of our professional development model by evaluating whether: (1) teachers were indeed reflecting on practice, (2) teachers constructed new conceptual understandings that formed the basis for teaching revisions, (3) there were positive shifts in teachers’ practice, (4) there were corresponding gains for students, and, (5) shifts in teachers’ practices were sustained over time.

### The Lower Mainland Project: Year One

The Lower Mainland project was launched with an introductory workshop given to a school district in the greater Vancouver area and an invitation to teachers to engage in collaborative research. In the first year, 10 teachers decided to join the project. All of these teachers were female and they had between 2 and 32 years of teaching experience. Nine of the teachers chose to implement SCL in learning assistance or resource settings to support students with a range of special learning needs (in grades 8 to 11). One teacher chose to use SCL to organize her writing instruction within a 9<sup>th</sup> grade combined Humanities/English classroom. Teachers applied SCL within four schools that differed in many ways. For example, one school was new, so that teachers were in the process of defining relationships and systems, while teachers in another school operated in a long established context. Two schools operated on a semester system and students attended a class daily. At the other two schools, classes were year-long and met every second day. The number of participating teachers across the four schools was 1, 2, 3, and 4, respectively. The result was that teachers had varying opportunities to collaborate with fellow teachers within schools. Nonetheless, three of the schools involved support staff in the project (e.g., peer helpers, educational assistants, youth care workers), which extended the “within schools” teams.

### Professional Development Activities

Figure 1 depicts the professional development activities in the first year of the project. We began with the aforementioned, 1-1/2 hour introductory workshop that introduced SCL instructional principles (see Butler, 1995; 1998-a; Butler, Jarvis, et al., 2001). Note that the intention of the workshop was to introduce a common theoretical framework for thinking about instructional goals and “best practices” for promoting self-regulation, not to communicate a set of procedures. Indeed, at this workshop, we invited teachers to collaborate with researchers (and with colleagues) to co-construct instructional strategies. Further, we anticipated that meaningful shifts in knowledge (for teachers and researchers) would emerge from action as teachers tried to modify teaching practices.

Collaboration was facilitated both within and across schools. Within schools, the researcher initially met with teams of teachers to review goals and principles and start problem-solving instructional strategies. Subsequently, the principal researcher visited classrooms to work one-on-one with teachers. Activities included co-planning, co-teaching, and debriefing. Initially, these visits occurred roughly once per week in each class, but the frequency declined over time as teachers felt more comfortable. Teachers also were encouraged to collaborate with one another between researcher visits. Simultaneously, research assistants visited classrooms weekly with a focus on evaluating outcomes. Assistants involved teachers in constructing research procedures (e.g., developing systems for tracing student outcomes; designing data collection forms) and facilitated data collection. As a source of data and to encourage reflection, teachers documented their efforts to use SCL on personalized versions of “teacher reflection forms.” In three schools, short, introductory workshops were organized to introduce other school personnel to the project (e.g., educational assistants, peer tutors).

In addition, researchers organized several opportunities for teachers to collaborate across schools. Each “all-schools meeting” began with an open brainstorming of “successes” and “challenges.” Teachers then had opportunities to share successful strategies and problem-solve challenges within cross-school, small group discussions. Each meeting closed with a tie-up discussion where ideas were shared across groups. Note that district resource personnel were involved as equal participants in these all-schools meetings. Although the project was started because of a ground-swell of interest from a set of 10 practicing teachers, the introductory workshop had been initiated at the district level, and the project received visible and continuing district support.

#### Data Collection and Year One Research Questions

Data were collected to evaluate our professional development model and associated student and teacher outcomes. Research procedures were developed collaboratively with teachers, building from methods used in previous studies at the post-secondary level. For example, to trace students’ progress in previous research, multiple parallel case studies had been embedded within a single-group pre-posttest design. For this project, teachers and researchers again decided to conduct multiple case studies, but this time within a two-group (intervention/control) pre-posttest design. As part of the case study data, teachers documented student outcomes on teacher reflection forms. Additional data sources included semi-structured observations of classroom instruction, summary notes from all-schools meetings, and end-of-the year, semi-structured teacher interviews. In interviews, teachers were asked to describe (1) student successes and disappointments, (2) outcomes they experienced as teachers, (3) their perceptions of in-service and research procedures, (4) whether they would recommend the intervention to other teachers, and (5) advice they would give to new teachers who wished to try SCL.

Findings reported here are based on systematic and rigorous analyses of data from the all-schools meetings and teacher interviews (Merriam, 1998; Miles & Huberman, 1994; Yin, 1994). First, interviews were

transcribed and line numbers were assigned to the transcripts and to minutes from the all-schools meetings. Pseudonyms were assigned to each school and each teacher to ensure confidentiality. All sources of information were then tagged with an identifying referent (e.g., “TL, 31-35” refers to the excerpt from Tammy Lansing’s interview, lines 31 to 35). Next, four researchers sorted the data based on its fit to an initial set of topics reflecting our research questions (e.g., student outcomes). Next, the four researchers met to consider how the evidence “answered” questions within each topic (e.g., “What gains did students make/not make?”). A set of codes was collaboratively constructed that captured the meaning expressed in each piece of evidence. As a first test, all four researchers examined each piece of evidence and assigned one or more codes. Memos were kept of observations that emerged and formed the basis for code revisions. Subsequently, two researchers applied a revised set of codes to another subset of data. Because inter-rater agreement at this stage was high, only minor modifications to coding criteria were required. Two researchers then coded the full set of data with an inter-rater agreement of 92% (all disagreements resolved through discussion).

Once all of the data were coded, a final analysis strategy was employed. Specifically, tables were constructed that summarized the data and allowed us to check for underlying patterns (Miles & Huberman, 1994). Columns in each table represented sources of data (i.e., each teacher interview or all-schools meeting). Rows reflected codes (or coherently related sets of codes) that summarized the meaning derived from the data. Recorded in each cell was the referent for a particular piece of evidence (see Table 1 for an example). Thus, when tables were examined for patterns, it was possible to ascertain the consistency with which teachers made a particular observation, the emphasis placed on a topic by any given teacher, and the prevalence of topics raised at all-schools meetings. Conclusions drawn concerning our research questions were based on an inspection of the evidence summed in these final tables.

## Results and Discussion

In this section we interpret the data to answer four research questions of greatest importance at the end of year one. Given the criteria for evaluating our professional development model, we evaluated: (1) did teachers actively reflect on their teaching (and self-regulate teaching activity); (2) did teachers gain new conceptual understandings; (3) did teachers shift what they were doing in practice, and, (4) were there corresponding gains for students?

### *Active Reflection by Teachers and Students*

Table 1 is the summary table constructed to find patterns in teachers’ and students’ learning processes. A review of findings suggested that students and teachers were both actively learning during the first year of the project. Evidence for students’ engagement in active reflection is provided in the first row of the table. In each of the all-school meetings and in seven final interviews, teachers described how students were thinking more actively about learning. For example, LV explained, “The students for whom it clicked, it made them think about their own learning, which I really liked because I don’t know that we do that enough in school. We tend to feed kids. We sort of pump them full of stuff and tell them how to learn” (9-18). Similarly, CF explained that one of her students now “thinks about strategies all the time and thinks of strategies for other people” (24-25).

Rows 2 and 3 describe teachers’ active learning processes. In eight of the final interviews, teachers described how they were thinking actively about teaching while trying to revise their practices (row 2). For example, TL explained that implementing SCL in her English/Humanities class “forced me to sit back and think about lower end students in the class and forced me to be more reflective in how to help these students”(222-

228). Similarly, LN explained, “I felt that I had a real opportunity to reflect on my teaching. [SCL] was very powerful that way. It helped me get the big picture of where we’re going with these students rather than just trying strategy after strategy” (200-204). Note how this quote captures not only LN’s opportunities to reflect, but also her self-regulated learning about teaching. Instead of just trying strategy after strategy, she was learning how to try out and evaluate strategies in a more focused way, based on a clearer vision of goals. In addition, in four interviews and each all-school meeting, teachers elaborated that making instructional shifts requires time to adjust to a new way of thinking (row 3). As TM succinctly stated, “teaching style is something that is going to change with time” (199-201). In her final interview, CD captured her learning process in a series of self-reflections. Many of her comments centered on how it takes time to change: “It’s a bit scary, but maybe that’s me, facing something that is totally new and I knew nothing about. So, you learn as you go” (CD, 331-332).

Finally, in all-schools meetings and final interviews, teachers described how their new instructional strategies and research procedures were tailored to their respective contexts and/or reflected their contributions (rows 5 & 6). For example, CB’s comments reflected her view that teachers were encouraged to take a set of instructional principles and try them on for size: “You can only try it on. You can’t impose a teaching style. You can only try it and see if it works for you as well. Or if you think it is effective for students” (CB, 188-190). Similarly, initially CD was worried that teachers would be expected to do things the same way, but was pleased when she was able to adapt procedures to meet her particular needs: “So you don’t feel, oh my god I’ve got to use this structure, and if I can’t use this structure I’m going to fail at the whole thing. And that’s how I felt at the beginning. And it isn’t like that at all because you develop your own ... whatever works for you” (CD, 281-283).

In sum, the data in Table 1 show how teachers and students were learning in parallel. While students were becoming active learners, reflecting on learning processes, teachers were engaged in revising their teaching and reflecting on teaching practices. Similarly, while students were co-constructing strategies with teachers for completing academic work, teachers were co-constructing procedures with researchers for improving their instruction. That students were engaged in active reflection was also evidence that teachers were actually shifting their instructional practices in line with SCL principles.

### *Co-constructing Conceptual Understandings*

In interviews and all-schools meetings, teachers were asked to describe successes and challenges that emerged from participating in the project. A consistent finding (from 9 out of 10 interviews and each all-schools meeting) was that teachers gained insights into teaching practices or effectiveness. These insights reflected conceptual changes in teachers’ knowledge about teaching and learning. For example, TL explained that “being teacher-directed is more efficient in getting out the information, but it comes down to a philosophical question of content vs. process. Process is really what it’s all about and I don’t really see why we couldn’t cut down on some of the content to allow for more process” (196-198). MP noted that “That’s my philosophy. SCL made me realize I need to do less talking and give more wait time and give them more opportunity to do more thinking” (224-228). Similarly, CB stated, “I like the adjustment in thinking. The slowing down. Because we’re so eager all the time to get kids on with things because they have deadlines and things to accomplish. And so you end up doing stuff for them, which isn’t facilitating independence” (194-201). As a final example, when asked what she gained by participating in the project, LV responded, “I found that I was still imposing my own attitudes and views on kids that were subtle enough that I really wasn’t aware I was doing it. And I really loved the whole concept of making students more independent, more responsible” (LV, 60-64). These quotes illustrate how teachers were gaining new insights about teaching consistent with SCL instructional principles.

*Meaningful Shifts in Practice*

When describing outcomes associated with the project, teachers also described a number of concrete benefits for practice. Their descriptions were reflective of actual changes they were making in classrooms (that were corroborated by in-class observations). Among the changes teachers described were improvements in instructional methods, classroom routines, and their ability to match instruction to student needs. For example, in the first all-schools meeting, teachers described how classroom routines improved because “less time is wasted in ‘getting going’ since students have strategies that they can reflect on for independent problem solving” (AS1, 103). Similarly, at the second all-schools meeting, teachers described how SCL helped them be more systematic and organized in terms of managing their time (AS2, 129). In terms of improvements to instructional methods, CF “learned to use questioning and to try to understand how the student approaches tasks before you start giving them strategies” (71-73). Both TM and TL felt that SCL helped lend a structure to their teaching based on a clearer vision of goals. TM said that “I really like the fact that it’s based upon individual students. I like that it gives focus, structure to your teaching, helps me keep the goal in mind” (199-201). TL explained, “SCL helped me to sit down and analyze what had to happen” (158).

Teachers also reported an improved ability to communicate with students. For example, at the first all-schools meeting, teachers agreed that the SCL model “promotes meaningful discussions with students and provides opportunities for choice” (AS1, 85). Teachers felt they were better able to assess student needs because they listened to and observed them more closely. For example, TM explained that SCL “opened up my eyes for what level he was really at...by enabling him to show me where he needed help. I was surprised to see this kid really couldn’t read” (15-19). Similarly, CF thought it was positive, when “Deb and I were talking [while working with A] and Deb really helped me see how A processes information.” (CF, 172-173).

*Gains for Students*

In interviews and all schools meetings, every teacher identified beneficial outcomes for students. In a few cases the gains teachers described were couched in quite general terms (e.g., students “excelled.”) But teachers also specified improvements for students in their (1) confidence, (2) understanding of task demands, (2) strategies for learning, (4) self-awareness, and (5) self-direction, independence, responsibility, and/or control over their own learning processes. For example, at the first all-schools meeting teachers described how SCL “builds confidence with students,” and “creates awareness of strategies already developed.” At the second all-schools meeting, one teacher described to the group how her students’ “work ethic had improved.” She found that her students were assuming “more ownership and control,” and were “taking more responsibility for their work” (AS2, 101). Other teachers described students as “more focused on task analysis” (AS2, 95) and “more independent learners” with “greater self-efficacy and independence” (AS2, 129). In interviews, teachers described both gains for individual students and outcomes that were more generalized. For example, CF noted that “[A] gained confidence in her ability and has taken full ownership over her learning” (14-19). TM said “It’s an approach that respects them and impacts on self-esteem. And it helps them to take control and feel in control” (47-48). As a final example, TL noted how “It gave them strategies to focus on and look at and say, ‘oh yeah, this does apply pretty much right across the board, or I can adapt it’” (28-30). Taken together, excerpts from all-schools meetings and interviews reveal how teachers’ perceived multi-faceted gains emerging for their students.

*Successes and Challenges*

Positive outcomes from the first year of the project were that teachers were actively reflecting on and self-regulating their learning and were constructing new knowledge about teaching. It was also apparent that teachers' shifts in knowledge could be associated with actual changes in classrooms, with corresponding gains for students. However, at the end of the year, teachers and researchers identified persistent challenges that needed to be addressed. One challenge was that, as teachers noted, making meaningful shifts in instructional practice is something that takes time. Although teachers felt that they had made substantial gains through the year, they were still struggling with certain aspects of SCL implementation. For example, teachers still found it difficult to juggle long-term and short-term goals. While they wanted to promote students' reflection on learning, they felt pressured to help students complete assignments and to "get through the curriculum." Teachers also struggled with developing systems for keeping records of students' developing strategies.

Another challenge focused on how to coordinate SCL across school personnel. Teachers were definitely positive about the opportunities they had to work collaboratively with other teachers. For example, CB explained: "I liked the debrief sessions [all schools meetings] that we had with the other teachers. When we did the positives-negatives it really clarified your thinking on what was working and why you were doing it" (57-58). Similarly, TM noted how working together with the other teachers within her school was useful: "I think all four of us are doing it in a slightly different way, so the more people you talk to the quicker you probably find something that can work for you" (187-189). However, teachers wished that there had been more time and opportunity to work with educational assistants (EAs). For example, CD explained, "As head of the department I have a regular meeting once a week with my classroom assistants, and we spent a lot of time discussing that on how to switch that [instructional style] around. They found it very difficult but saw the value of it" (CD, 169-171). Teachers also were disappointed by the inconsistencies between their new approaches and those used in other classes (i.e., by teachers in academic classes) or by substitute teachers.

The third, most critical, problem was that teachers appeared to rely heavily on researchers to sustain their use of SCL. As expected, when asked what were the most valuable components of our professional development model, teachers emphasized researcher modeling, observation, and debriefing. As LN explained, "the most useful time for me was when Deb came to [the school] and worked with students while I worked with [them]" (66-67). Similarly, LV said, "I think the very best thing is to watch the process in action, watch Deb work with students, and then as quickly as possible, have her return the favor" (219-220). At the same time, what was troubling was teachers' perception that, without the researchers' presence, they might have abandoned the project. For example, LN noted that she "might have lost interest in the project without [Deb's] on-going influence" (98-99). Similarly, LV said, "I think without the kind of on-going in class support that Deb could give us, I think they'd [other teachers trying SCL] try it once or twice and give up. That's my guess. Because it is a shift in thinking and a shift in a whole ideology towards education" (127-131). CB also felt that, "For me it's most effective when you guys are here on a regular basis, because it's a prompt for me and a lift for me to really say, 'oh yeah, let's really get into it and get going and be consistent'" (58-60). CF agreed that "her [Deb's] enthusiasm carries you through" (96-98). Similarly, EH explained, "If she hadn't been there to ... I don't think it would have gone" (259-262). These comments suggested that the teachers' were depending on "outsiders" (i.e., researchers) for their sustained use of SCL. This raised the question of how much teachers would continue to use SCL once the research project was over.

#### The Lower Mainland Project: Year Two

That teachers in the first year associated the project with positive outcomes and enjoyed being part of the study was evident across various sources of evidence. For example, when asked in final interviews

whether they would recommend SCL to colleagues, every teacher said “yes.” CD explained: “Absolutely. There are too many kids who are spoon fed the information and we need to turn them into independent thinkers. I think this is just a marvelous way of doing it.” Their actions were consistent with these statements. For example, teachers recommended the intervention to colleagues and/or initiated discussions about instructional principles with other personnel in their schools (e.g., peer helpers or educational assistants). Further, of the 10 teachers in the first year of the project, 7 continued into the second year, bringing with them three additional colleagues. Two teachers wanted to continue but could not, because they left their appointments. Only one teacher chose not to continue. This latter teacher had joined the project late and was the only teacher working on her own within a school. As a result, although researchers visited her class regularly, she may have felt isolated from her colleagues also trying the intervention. Also, from the beginning, this teacher had difficulty finding time to try a different approach to instruction and to reflect on her teaching practices.

Thus, in the second year, 10 teachers participated (7 continuing; 3 new) within 3 of the 4 original schools (resulting in teams of 4, 3, and 3 teachers per school). As in the first year, teachers were all female and had a wide-range of teaching experience. Again, 9 teachers implemented SCL in learning assistance or resource settings (grades 8 to 11), while one continued to use SCL to teach writing within her 9<sup>th</sup> grade Humanities/English classrooms. We employed a similar professional development model with new teachers that we had used in the first year (see Figure 1), with the exception that the introductory workshop was abbreviated and classroom visits were less frequent. With continuing teachers, the primary researcher faded back SCL support to just a couple of visits per semester, although research assistants continued to visit classrooms weekly to assist in data collection. Further, in the second year only two all-schools meetings were held to support teachers’ collaboration across schools.

### Data Collection and Year Two Research Questions

As in the first year, data were collected to evaluate our professional development model and associated student and teacher outcomes. Data collection procedures were the same, except that in year two interviews, teachers were asked to discuss: (1) student successes and disappointments, (2) outcomes for themselves as teachers, (3) whether any aspects of SCL had become part of their day-to-day practice, (4) barriers or challenges to using SCL, (5) what it would take to keep “SCL alive” in the future, and (6) what kinds of in-service supports other teachers would need if they wanted to try SCL. As in year one, interviews were transcribed and evidence was tagged identifying referents (e.g., “TL, 31-35”). To analyze interview data, the principal researcher read the interviews to identify themes related to a series of topics (e.g., aspects of SCL that became part of teachers’ day-to-day practice). Tables were constructed for each topic that cross-referenced themes (one theme per row) with teachers (one teacher per column). Line numbers were used to indicate instances when a given teacher addressed a major theme (see Table 2 for an example). As a test of the tentative themes, three other researchers were each given a subset of the “blank” tables with the themes and teacher initials. These researchers independently reviewed the interview data, filled out the tables (with line numbers), and fine tuned the themes. Finally, the principal researcher cross-checked each piece of evidence for its fit in the tables. Interpretation of the evidence summed in the tables served as the basis for the conclusions drawn here.

### Results and Discussion

In this section we interpret the data to answer three research questions of greatest importance at the end of year two. Given the criteria for evaluating our professional development model, and the challenges identified

in the first year, we wondered: (1) did teachers' practice actually shift in meaningful ways that might be sustained over time; (2) did students continue to benefit, and (3) what did teachers think were the most important in-service activities for learning SCL?

*Were Shifts in Practice Meaningful and Sustained?*

Evidence suggested that teachers' use of SCL became independent in the second year of the project, even as support from the principal researcher was faded. Table 2 summarizes data from interviews related to teachers' adoption and ownership of SCL. Note that observations in classrooms corroborated teachers' descriptions (of both successes and challenges). First, evidence suggested that teachers did shift their interactions with students in ways that would be sustained over time (see row 1). For example, LN described how her interactions with one student had "totally shifted way more to listening to where she's at and helping her find the next piece to solve while she's working on, rather than starting, OK, let me start at the top of the question, now here's how I would do it" (248-250). She believed that this change reflected a revised approach to teaching: "I felt like it was a real change for me ... I feel like it's really affected how I interact with them, just a general sort of rapport. It's much less I'm a teacher, you're a student, I'll show you how to do this and you do my way after that" (254-257). CD also felt that her general approach to teaching had shifted: "But in the second year now, it's second nature, and I find it very easy to question a student to get something out of them. And if they're stymied with the first, my first question ... I'm just easily able to reword it and to still try and pull a response from them. Instead of bailing out or giving them the answer" (176-181). Similarly, CB explained: "it became as automatic with [students] as it did with us in terms of how they think about what they were doing, to work things out for themselves" (58-60). Later, she elaborated: "the whole questioning approach to kids around ... what are you doing ... what's your task ... what do you have to do ... what have you tried so far. That whole repertoire of thinking is just pretty well engrained now" (207-215).

In their descriptions of new teaching practices, many teachers directly expressed their intention to keep using SCL. Their comments suggested that they had adopted new understandings about teaching and learning, not simply a set of instructional procedures. For example, LN said "I think it's definitely something that I would sustain in the future... I don't feel like it's a program that you kind of were trying this year and now we're not teaching that way anymore. It's more of an approach to how you deal with kids and how you teach" (685-690). When asked what it would take to keep SCL going in the next year, EH replied, "I don't think much, cuz I'll just keep doing it. I can't see reverting back to not doing it" (373-375). In response to the same question, PM replied "Oh, I will do it for sure. I'd like to have sheets so that they can write down their strategies, but for sure I'll do it. Nothing will get me to do it. I'll just do it" (294-296). CF explained that SCL is now "just part and parcel of the way I think" (350-352), and that "understanding how to move a child through ... towards independence through SCL has become part of my thinking and being" (573-579). When asked what it would take to "keep SCL alive in the future", she responded, "I don't think I can quit using it. No more SCL? I don't think it's quit-able" (622-623).

Teachers also described how they had already extended use of SCL to students other than those in the research project (see row 2). For example, PM said that "it becomes part of your language too and then you start doing it with other ones before you even know it. Sometimes it might feel overwhelming, like I've got to do this with all the kids. But after you sort of focus on one it becomes your language and you start saying it" (328-331). Similarly, CD explained, "my approach to any student now is the SCL approach, whether I'm recording it or not or they're aware of it or not. That's how I'm dealing with kids now" (48-52). Taken together, these findings suggest that at least certain aspects of SCL had been incorporated into teachers' daily practices.

At the same time, teachers did continue to struggle with some aspects of SCL implementation. A continuing problem centered on balancing short- and long-term goals (row 3). Similarly, many teachers also continued to grapple with finding systems for documenting students' strategies (row 5). Finally, teachers described how resistance from others (e.g., older students, other teachers) sometimes undermined their change efforts. Encouragingly, many teachers also offered suggestions for addressing these particular challenges (row 4 & 6 & 8). For example, LN found that she could integrate SCL into the curriculum, so long as she took adequate time to plan. Similarly, several support teachers reconciled the conflict between short- and long-term goals by focusing on the importance of long-term outcomes. The majority of teachers also described how involving more personnel in the projects might help overcome student or teacher resistance. Nonetheless, an important finding was that continuing teachers were more likely than new teachers to describe compensatory strategies (rows 4 & 6). This latter finding is consistent with the first year data suggesting that making shifts in practice takes time.

### *Did Students Continue to Gain?*

As in the first year, teachers continued to describe positive outcomes for students that they linked to their use of SCL. As in the first year, teachers focused most often on gains for students in self-confidence, active and reflective learning, problem-solving, self-awareness, task performance, and independence. For example, PM felt her students gained because "they found that they could do it. They could figure it out for themselves" (13-15). One of her students, who greatly improved his performance in math, now calls himself "Einstein." Accordingly to PM, "That's just huge. Whereas before [he'd say] 'I can't do it, this is stupid, I hate this', now he kind of has a smirk on his face and he's really willing to explain what he sees ... I think he really feels good about it too. He just comes over, like he's got a little kick in his step right now" (86-91). Similarly, CD summed her students' gains: "More than anything I think they gained the independence, being able to figure it out themselves" (12-13). As in the first year, teachers described how SCL did not work equally well for all of their students. At the same time, teachers felt that SCL was a valuable approach in the majority of circumstances. They linked positive student outcomes with their implementation of SCL.

### *What Professional Development Activities Were Most Effective?*

This section summarizes teachers' perceptions of professional development activities most important for learning SCL (see Table 3). In their descriptions, teachers typically recommended a constellation of activities. For example, when asked to describe what teachers in a new district would need to learn and implement SCL principles, CB explained: "Well, that's the thing that I've learned from this, is first of all you start from the initial workshop or the ideas introduced, but it takes the modeling and the reinforcement. You have to be willing to go back and work with a core group of people and help them really establish it as part of their practice. If you don't do that, then it's going to become the flavor of the month" (159-163). In their descriptions, teachers consistently emphasized the importance of: establishing a theoretical framework (row 1), seeing SCL in practice (row 2), trying SCL and reflecting on the success of their efforts (row 3), debriefing, problem-solving, and sharing ideas with other teachers (row 4), being observed and receiving feedback on their use of SCL (row 5), and interacting with someone expert in and enthusiastic about SCL (row 6).

For example, it was clear that teachers valued initial workshops that set a common framework for thinking about best practices (row 1). Continuing teachers remarked on how valuable that initial information had been. Interestingly, our decision in the second year to abbreviate the introductory workshop was not well received. Two of the three newer teachers described how they would have preferred an extended theoretical

introduction as a basis for making instructional change. As another example, every teacher emphasized the importance of seeing SCL in practice, either through videos or modeling (row 2). For example, when asked what new teachers would need to learn SCL, CD replied: “I think they would have to come and observe in action. They have to see how it is a totally different way of wording your questioning” (86-89). Similarly, TS suggested: “I think you need to observe it first, then do the paperwork to understand it, then practice it” (148-151). MH also thought that, in addition to an introductory workshop, “the other key piece that I think is absolutely critical is having someone come in and model it for you, and then work along side you where you’re attempting to do it and have time then to debrief after about the struggles and what worked” (120-137). Some teachers recommended including more video and/or opportunities to practice as part of introductory workshops. But as is reflected in MH’s comments above, the majority of teachers (7 of the 10) also described the importance of support in their classrooms. For example, PM described the value of watching the principal researcher work with one of her students: “that time was so good watching her do it, and just watching her even turn around a student who started ‘I don’t know what to do’. You know, it’s just amazing to watch by the end of that period, they’re just sucked right into it” (135-140).

Nine teachers emphasized the importance of talking to others about their attempts to try SCL (row 4) and/or of having someone observe them use SCL and debriefing about it afterwards (row 5). For example, TS suggested that a group of teachers observe another person working with a student and then discuss what they observed: “that way you have a chance to speak to somebody who’s standing beside you and say, ‘well, I would have done that, or, I could have asked this, or she should have done that’ ... the more conversation you have, I think is the more you learn” (249-252). CD felt that, “to have that knowledgeable one watch me try and do it and get the constructive criticism at the end of it, that is very helpful” (115-119). However, some teachers’ comments (and actions during the years) also reminded us that not everyone learns the same way. While most teachers described the value of being watched and given feedback, two teachers definitely preferred watching others and/or reflecting privately. Further, although teachers again stressed the value of having support from an SCL mentor (row 6), many discussed possible ways to build SCL expertise within schools (rather than relying on “Deb”).

Finally, teachers’ descriptions of their professional development efforts were useful in understanding their learning processes. For example, four teachers likened mastering SCL to learning a new language. From PM’s perspective, learning SCL involved “gaining the words for how to get the kids to do that. Cuz, I sort of felt at the beginning, I sort of got to a certain point and then they don’t know what to do so I’ll help them. But now I can sort of bring it right to the bottom and find out what the problem is so that they can find it out” (392-395). Similarly, CF explained “the language is really important, and that’s what I found useful about you [Deb modeling] because I would listen like crazy when you were here to see what I could be saying that would move the students forward” (389-393). But six teachers also emphasized that they were learning to adapt SCL principles, rather than learning a scripted approach to instruction. For example, although MN had articulated the importance of modeling and observation, she explained: “I don’t see SCL as something that everybody does exactly the same way, so I don’t think you need to necessarily mimic somebody else doing it. It’s more the process of trying, then somebody else trying, you know what I mean?” (383-389). Later, when talking about the importance of reflecting on her learning, she added: “It’s kind of different than learning how to give a test where you learn exactly the procedure, when you can go and try it and check, yah, I did this, I did that. It’s not really like that. It’s sort of a bit more of a paradigm shift” (398-401).

As in the first year, 8 teachers emphasized that learning SCL takes time. For example, CD, a very experienced teacher, described her two year journey in learning SCL: “It was very difficult, very difficult, because I had so many years of teaching leading up to that and you just have a familiar pattern. I think it’s working well until you’re shown differently and then you learn that it was very difficult, to learn to rephrase ... But in the second year now, it’s second nature” (169-176). IE explained that what is needed are opportunities to build expertise over time: “I think you need to have ... your initial Pro-D, and then you need to have follow-up Pro-D’s and just an opportunity ... to ask questions about it and to work on new things, and to expand and to get better and better at it ... and add new things on to it” (209-213). These descriptions reinforce the importance of sustained support for efforts to make instructional change.

### *Successes and Challenges*

In the Lower Mainland Project we tried to instantiate principles underlying our professional development model within a set of concrete activities, including workshops, classroom visits, and within-school and cross-school meetings (see Figure 1). In that context, we tried to achieve several types of balance. For example, on one hand we knew that teachers wanted to work towards common goals, build from best practices, and try out an instructional innovation (Ball, 1995; Englert & Tarrant, 1995). Thus, we needed to establish a common framework for thinking about teaching, but without constraining teachers’ development of personalized instructional strategies or co/re-construction of knowledge grounded in action (Perry et al., 1999). Another balance that we strove to achieve was to provide sustained support to teachers but without fostering dependence on researchers. We wanted teachers to have access to an experienced SCL mentor who could help them problem-solve in situ, while at the same time fostering the development of self-sustaining communities of practice within which teachers could support one another (Henry et al., 1999; Lave & Wenger, 1991; Palincsar et al., 1999). Finally, while we knew that teachers would benefit from seeing SCL in videos or through modeling, we also needed to emphasize that SCL could not be scripted, and that multiple instructional practices are consistent with SCL principles (Palincsar et al., 1998). Teachers needed to define personalized approaches to using SCL, tailored for themselves and their students.

We met with some success in our Lower Mainland project. First year data documented that teachers were indeed reflecting on practice, constructing new knowledge about teaching, and making positive instructional shifts. They appeared to endorse our common theoretical framework while still developing personalized instructional approaches. At the end of the first year, we were worried that teachers were too dependent on researchers for maintaining instructional changes. However, second year data suggested that teachers were sustaining use of SCL, even as the principal researcher’s support was faded. Note, however, that research assistants continued to visit classrooms weekly even in the second year of the study. Although their focus was on data collection (and not SCL mentoring), their continued presence (and data collection itself) may have supported teachers’ sustained use of SCL. Thus, improvements were clearly possible in a number of areas, including: (1) avoiding dependence on “outsiders” for sustaining the innovation; (2) fostering development of self-sustaining communities of practice within schools; (3) developing a more time-efficient system for structuring researcher-teacher collaborations, and (4) separating data collection (student outcomes) from evaluations of our professional development model.

### Current Directions

In our current projects we are piloting a revised professional development model that builds from what we have learned (see Figure 2). In this new model, we are instantiating the same professional development

principles within a modified framework. We start again with a 1-½ hour workshop that introduces SCL. However, we have added two ½ day workshops that now serve as an initial location for co-constructing instructional strategies, observing SCL in practice, and role playing and debriefing. These expanded workshops are now followed by two to three ½ day school visits spaced four to six weeks apart. The first of these visits extends co-planning into schools and facilitates the development of within-school teams. Subsequent visits include cross-schools meetings, meeting within-school teams, and co-planning/co-teaching with individual teachers. In place of weekly visits by researchers, teachers within schools support one another by co-planning, co-teaching, and debriefing (as is possible in a given context), while researchers are available by phone or through e-mail. To support discussion within schools or with researchers, teachers document their use of SCL on “teacher reflection forms.” Teachers use these forms to record successes and challenges, plan revisions to instructional strategies (based on outcomes), and keep track of questions that they cannot resolve on their own.

In a pilot project we applied this revised model to support teachers from another school district (a district on Vancouver Island, distant from the University). This project was launched when a team of teachers, administrators, and district personnel visited the Lower Mainland to observe SCL in practice. Subsequently, we were invited into the district by staff within their two secondary schools. Professional development began with the expanded workshops and initial ½ day school visits. We had an opportunity to return to the district one month later for follow-up meetings and school visits (after which our pilot project was interrupted by a province-wide labour dispute). What we observed in even this first return visit was highly encouraging given the challenges from the Lower Mainland project. In the Island district, teachers were clearly working collaboratively with one another to find strategies for integrating SCL into their schools. For example, at an all-schools meeting held at the start of our visit, teachers described numerous concrete examples of how they were using SCL. Further, teachers’ active reflection and problem-solving were evident even within the meeting. Whenever teachers mentioned a “challenge” they also generated a list of solutions. Evidence of teachers’ collaborative efforts also emerged during subsequent visits to schools. We observed teachers co-planning and co-teaching in classrooms. Also, some teachers were clearly assuming leadership roles and supporting others to learn the approach. However, not surprisingly after just one month, teachers still needed support in some aspects of SCL implementation. In particular, teachers had not yet shifted interactions with students during open discussions in classrooms or in one-on-one interactions to follow SCL principles (promoting students’ problem solving rather than telling them answers). These shifts in questioning strategies were the kinds of changes that Lower Mainland teachers had described as taking the most time to learn (because they reflected a fundamental shift in conceptions about teaching). More research is needed to see if our revised model, when fully implemented, is equally effective at supporting those kinds of shifts.

### Conclusions

In conclusion, it appears that the professional development model used in the Lower Mainland project did promote “deep rooted” changes in practice. These changes were based on teachers’ instantiation in practice of new decision making criteria, as opposed to mastery of specific routines (Gersten et al., 1997; Palincsar et al., 1998). Thus, our research supports several of the theoretical principles advanced in emerging professional development models (Palincsar et al., 1998; Perry et al., 1999). For example, teachers emphasized that, while useful, introductory in-service workshops would not have been enough to effect meaningful change in their classrooms (Borko & Putnam, 1998; Perry et al., 1999). What was required instead were on-going opportunities for teachers to co-construct knowledge and revise conceptual frameworks through reflection on new experiences (Palincsar et al., 1998). Teachers appreciated opportunities to collaborate with colleagues

both within and across schools. In that context, they profited from opportunities to share ideas and to problem-solve challenges (Englert & Tarrant, 1995; Perry et al., 1999). Teachers also appreciated opportunities to share expertise with researchers (Henry et al., 1999; Perry et al., 1999). They valued the combination of practical and formalized knowledge researchers contributed, especially when they could see the immediate relevance of theory in the classroom.

Also consistent with newer professional development models, teachers in this project enjoyed identifying “best practices” enacting changes in their individual classrooms (with guidance), and reflecting on their teaching activities (Henry et al., 1999; Palincsar et al., 1999; Perry et al., 1999). These “self-regulated” approaches to learning about teaching appeared to foster teachers’ (and researchers’) co-construction of both practical and formalized knowledge. Teachers’ development of practical knowledge was evidenced by their emerging insights related to teaching. Their development of formalized knowledge is being demonstrated in their participation with researchers in presentations for academic and professional conferences (e.g., for the Council for Learning Disabilities in 2000; for the International Conference on Teacher Research in 2001). At the same time, additional work is needed to examine how to instantiate the same professional development principles in a structure that promotes the development of SCL expertise within schools and the independent functioning of within-district teams. Our revised approach to professional development was constructed with those goals in mind. Initial evidence suggests that the revised approach maintains the critical elements of the original model while redressing some of the observed difficulties. Additional research is clearly required, however, to investigate whether the new framework is equally able to support fundamental shifts in conceptions about teaching that are foundational to sustained shifts in practice.

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Table 1. Teacher and Student Learning Processes in SCL Classrooms: Year One.

	MP	LN	CF	TL	CB	LV	TS	TM	CD	EH	IM	AS1	AS2	AS3
Students were thinking actively about how they were learning		13-15 17-19	21 24-25 49-51 214-18	19-22 28-30 36-39 41-43 135-36 216-17 236-38	206-13	9-18 138-41			564-70 642-46	13-16		84	129 138	164 173
Teachers were thinking actively about their own practice	214-19 224-28	119 200-01 209-10	62 115 116-17	158 196-98 222-28 235	57-58 172-74 188-90 194-201 206-13		126		332-33 397-401 658-63	381-84 513-18 545-46 550-56				
Learning to use SCL takes time (it was a learning process for teachers)				85				199-201	281-83 331-32 528-30 537-39 564-70 634-37 691-92	545-46		84 85	106 129	164
Teachers co-constructed SCL classroom routines and/or made SCL their own			150-52 170-71		68-69			187-89	281-83 435-40 564-70 617-19			89 114	90 129 137 138 142	
Teachers co-constructed research procedures with researchers or other teachers		80-82 123-24	79-81 116-17	143 149	68-69	163-66	177-81	84-85 107-10	211-13 464-68	319-21	34 116	85	142	182 183 184 186 191 193 202 223
TOTAL	X	X	X	X	X	X	X	X	X	X		X	X	X

Notes: “Pseudo-initials” represent teacher participants; IM = the Introductory Meeting; AS# = the first, second, or final all-schools meeting; Table entries correspond to the referent for a piece of evidence included in the table (e.g., MP 214-19 = lines 214-219 from MP’s final interview); X indicates the columns for which there are entries for at least one teacher.

Table 2. Teachers’ Sustained Use of SCL Instructional Principles and Procedures: Year Two

	Continuing Teachers							New Teachers		
	LN	CF	TL	CB	TS	CD	EH	IE	PM	MH
Teachers shifted their interaction patterns with students	228-244 248-257 400-401 405-412 624-640 644-653 685-690	350-352 573-579 622-623 836-837	712-718 1015-1017 1018-1021 1025-1027 1140-1142	33-36 58-60 207-215 219-222	318-323 387-395 410-413 416-420	48-52 169-175 176-181 189-190 228-229 282-287 315-317 322-326 332-335	271-276 286-287 373-375 497-502	232-235	211-219 228-230 235-236 294-296 328-331 350-356	185-186
Teachers used SCL questioning techniques across contexts	222-223 226-227 254-257 644-648 792-800 823-829	324-328 354-357	207-210 678-680 898-903 1126-1134	19-20 33-36 214-215	84-85 321-328	48-57 164-166 188-190	30-31 55-58 268-272 502-504	18-23 44-45 (45-47) 68-72 232-235 342-434	48-51 217-218 328-331	46-48 93-96 105-106
Teachers struggled with balancing long- and short- term goals	302-303 305-307 722-724		220-222 290-293 421-425 650-653 879-880 984-988	276-282			111-114 125-127 230-233 278-282 380-383	107-115	44-45	225-230
Teachers found strategies for juggling long- and short-term goals	304-305 306-310		47-57 61-69 75-80 421-425 984-988 1012-1014		40-43 377-380		129-136 218-224 282-286 462-469		60-65	
Teachers struggled with strategy sheets or consistency			206-210 212-215			73-76		140-149 163-169 173-176	265-274	14-22
Teachers developed systems for integrating strategy sheets into their instruction	56-63 88-94 277-281 283-284 331-333	676-678	717-718 857-863 881-883 901-903	237-238 261-265 298-299	33-35 114-116 262-266 278-283 377-380		444-448	169-170		

Table Continues.....

	Continuing Teachers							New Teachers		
	LN	CF	TL	CB	TS	CD	EH	IE	PM	MH
Teachers were impeded by attitudes by some students or teachers	323-327	630-635	777-779 792-798 893-894		74-77	29-33 130-131 263-265	351-354			
Teachers recommend wider involvement in the school or district	309-313 442-444 474-478 502-516 535-536	602-603 614-617	491-495 543-545 803-804 1039-1049 1054-1060	351-353	189-190 210-211 400-405	104-108 130-133 140-142 340-341 372-373	205-209 219-224			147-150 157-159 262-273

Notes: “Pseudo-initials” represent teacher participants; Table entries correspond to the referent for a piece of evidence (e.g., 214-19 = lines 214-219 from a final interview).

Table 3. Teachers’ Perceptions of Valuable Professional Development Activities: Year Two

	Continuing Teachers							New Teachers		
	LN	CF	TL	CB	TS	CD	EH	IE	PM	MH
An introduction focused on theory, goals, and principles	583-584	421-425 669-670 676-679 693-694	387-390 396-398 546-548 644-647 1194-1197	159-160 190-192	141-143 149-150 178-185 210-211	353-355	254-255 422-424	124-125 129-133 209-212 253-257 263-266	251-256	120-123 174-175 206-209
Observing SCL in practice through modeling or videos	366-369 377-380 535-536 842-846 868-869 935-938 945-946	377-379 389-393 425-426 428-436 694-695	396-397	160-161 165-168 192-199	143-144 148-149 245-249	86-89 115-116 121-122 154-157 173-174 247-252	255-259	124-126	122-123 136-141 147-152 250-256	70-74 123-125 145-147 196-198 214-215 300-301
Opportunities to try out, practice, and reflect	385-386 395-401 444-447		390-392 396-398 419-420 434-435 441-444 453-461 995-998 1356-1364	192-194 313-320	150-154 184-185 225-234 262-273 368-369 377-382	196-200 209-210		125-127 210-212 265-266	122-128 149-150 251-256 350-356	127-130 198-202
Opportunities to talk or debrief with others	370-375 386-387 395-401 443-444 452-455 475-477 847-851 867-868		466-467 475-476 484-487 491-495 501-502 619-622 626-632 646-647 803-804 1058-1060 1339-1345 1356-1359 1397-1400	167-173 341-346 350-353	249-254 400-405	157-160 242-243		210-212	123-125 181-186 198-202 300-305	71-72 126-127 137-139 147-150 175-176 208-212 217-219 253-254 266-268
Someone to watch them and give feedback	376-379 868-869		434-435 480-481		153-157 369-372	117-119	267-272		124-125 300-305	125-128 149-150 216-219
Support from someone experienced with and committed to SCL	448-450 457-462 463-466 474-480	377-379 383-384 496-503 503-504 812-815	1056-1059	161-163 171-173 178-183	307-312 403-405	242-244	172-173 175-177 425-426		125-130 135-141 165-172 198-202	17-20 125-130 143-147 212-215 254-257 300-301 312-313

Figure 1. Our Professional Development Model in the Lower Mainland Project

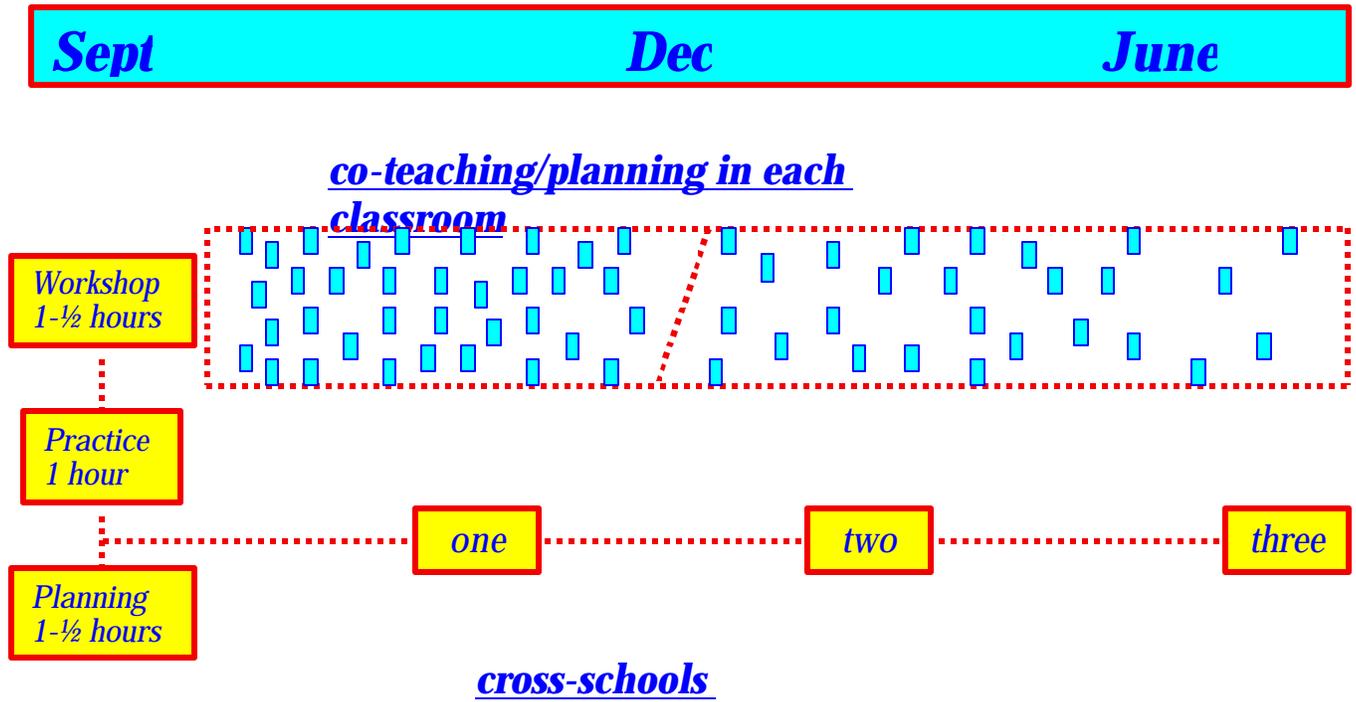


Figure 2. Our Revised Professional Development Model

