An Investigation of the Impacts of Teacher-Driven Professional Development on Pedagogy and Student Learning

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Introduction

In 1998, Linda Darling Hammond argued that "teacher quality is the factor that matters most for student learning." This dictum was reiterated by Geringer (2003) who not only affirmed that a good teacher is a crucial factor in student learning, but stated that teacher quality outweighs the importance of standards, funding, and class size. Professional development is a common and necessary approach to improving teacher quality. However, while teachers are required to participate in professional development activities, it is often the case that they are not involved in selecting and planning those activities, and that professional development may not be closely tied to classroom practice.

The Francis P. Collea Teacher Achievement Award Program (CTAAP) is a professional development

model grounded in much of the current literature about professional development. The CTAAP was originally funded in 1994-95 under the auspices of the California Postsecondary Education Commission and received funding for six, two-year cycles. The sixth cycle (2004-06) was investigated in the present case. Twelve teams of 2-4 teachers each were selected from a pool of proposals which were submitted and evaluated. The Request for Proposals was sent to every elementary and secondary school in California. There were a total of 37 teacher participants. The funded proposals spanned all grade levels. Subject areas included science, social studies, special education, reading and literacy, and visual and performing arts. Interdisciplinary projects were encouraged.

Project teams received $30,000 for two years. Funds could be used for any activities related to teacher professional development in the designated subject area(s), including, but not limited to, travel to professional organization conferences and project-related training programs, enrolling in professional development and university courses, purchasing, developing, implementing and evaluating curriculum materials, purchasing hardware and software, and bringing experts from the field into participants' schools and classrooms.

Project teams were monitored by attending annual meetings at which they made presentations on project-related activities that occurred during the previous year. They also submitted annual reports. Project staff visited each site at least once.

CTAAP provides teachers with the opportunity to make decisions about their professional growth. This article examines the experiences of those teachers and the potential for their professional development experiences to impact pedagogy and student learning.

Theoretical Framework

The current research literature about professional development advocates improving pedagogy by providing teachers with opportunities to practice new professional behaviors and establish networks that allow teachers to collegially interact with colleagues (Bonner, 2006; Garet, Porter, Desimone, Birman, & Yoon, 2001; Peckover, Peterson, Christiansen, & Covert, 2006; Sparks, 2004). Prior to the implementation of the No Child Left Behind (NCLB) legislation (Public Law 107-110), the field was slowly moving away from the "sit and get" model, which imposes professional development on teachers in a top-down, non-collaborative manner. However, with the implementation of NCLB the field has seen a resurgence of professional development dependent on mandates, scripted teaching, and oversight by school administrators to assure compliance (Peckover et al., 2006; Sparks, 2004).

The No Child Left Behind Act (NCLB), as it relates to professional development, has created a professional development system that does not allow teachers to utilize their professional judgment to determine their own professional development needs or make decisions regarding what professional growth activities are relevant

to their classrooms. For example, Sparks (2004) wrote that currently, professional development exists in a two-tiered system. The first tier focuses on creating a professional community, while the second depends on scripts and mandates for teachers. Sparks observed that low-performing schools typically implemented tier-two type professional development programs that required teachers to use teaching strategies in a tightly structured, regimented format, and high performing schools offered teachers some input regarding their professional development experiences and flexibility in the classroom.

The "first tier" of professional development has been influenced by studies that have sought to identify the critical characteristics of effective professional development. The characteristics of effective professional development that appear the most in the literature are the methods that help teachers more deeply understand academic content and the ways students learn (Guskey, 2003). For example, one study based on a national sample of 1,027 math and science teachers, identified three core features that were believed to be significant for effective professional development activities: focus on content knowledge, active learning, and coherence with other learning activities (Garet et al., 2001). The implications of conducting professional development within the realm of the first tier suggest that traditional structural features of professional development (tier-two), such as workshops, seminars, and so on should be supplanted by new models such as mentoring, peer observation and coaching, networking, and collaborative work. When teachers collaborate research indicates an increase in their academic content knowledge and increased direct communication about student performance.

Educational researchers have endeavored to identify the characteristics of effective professional development. One study found that several characteristics of effective professional development consistently emerged throughout their examination of several case studies (Loucks-Horsley, Hewson, Love, & Stiles, 1998). This group identified the following trends indicating successful professional development:

◆ utilized well-defined language of effective classroom learning and teaching to drive the professional development experience;

◆ provided teachers with opportunities to build their knowledge and skills;

◆ modeled the strategies teachers would use with their students;

◆ created a learning community;

◆ lead to teachers assuming leadership roles; and

◆ required teachers to continuously assess themselves and make improvements that impacted teacher effectiveness, student learning, leadership, and the school community.

Building professional learning communities among teachers which encourage the assumption of leadership roles and continuously assess the teachers has been

supported by an increasing number of studies that identify the importance of collaboration as a key characteristic of effective professional development. Collaboration should include groups within the same school, same grade, or department so that teachers can work together in a focused environment while dealing with issues of common interest. Several studies that investigated the role of collaboration in professional development found that collaborative activities amongst teachers were an effective method of professional development to improve teacher efficacy (Darling-Hammond & McLaughlin, 1995; Holloway, 2003; Lieberman, 1995; Smylie & Hart, 1999; Zeichner, 2003).

A number of collaborative models have been identified as demonstrating effective professional development because these models create a culture of inquiry (Bonner, 2006, Lieberman, 1995; Zeichner, 2003). A culture of inquiry supports the use of data to evidence success, identify strengths and weaknesses, and measure progress toward goals. Cultures of inquiry can provide teachers with opportunities to dialogue about learning as learning relates to lesson planning, student achievement, and student work (Garmston, 2005). Cultures of inquiry are characteristic of effective professional development because teachers have the opportunity to give and receive feedback about learning amongst their colleagues (Mills & Donnelly, 2001; Danielson, 2005).

Successful models of collaborative professional development can take many forms. This includes models of site-based planning and governance guided by the principal but ultimately led, created, and implemented by a team of teachers (Conzemius, 1999). Ongoing commitment to professional development for teachers has also been found to provide various scheduling and staffing techniques to enable teachers to work collaboratively inside and outside of school (Cochran-Smith & Lytle, 1999; Smylie & Hart, 1999; Zeichner, 2003).

As a whole, the research literature recognizes that a good teacher is a crucial factor in student learning and that teacher quality outweighs the importance of standards, funding, and class size (Darling-Hammond, 1998; Geringer, 2003). Furthermore, the literature recognizes that professional development is a crucial piece for improving professional quality. Effective professional development builds on subject matter knowledge by establishing well-defined objectives that enhance pedagogical knowledge. In addition, effective professional development encourages teachers to collaborate and utilize strategies that teachers may use with their students, and provides teachers with the opportunity to continuously assess their own competency. However, current legislation has influenced the creation of short term, top-down, and time consuming processes that do not necessarily result in successful professional development experiences for teachers or lasting change in teacher practice or school culture (Peckover et. al., 2006).

Improving teacher quality depends on improving professional development and improving professional development depends on creating meaningful learning experiences for teachers. Research on change suggests that allowing individuals

the opportunity to involve themselves in dialogue and collaborative behaviors develops the capacity to create and implement local solutions (Peckover et. al., 2006; Senge, 2000). It is also indicated that creating meaningful professional development experiences lies in providing teachers with some autonomy regarding their professional needs (Sparks, 2004; Zeichner, 2003). Providing teachers with the autonomy to exercise professional judgment about their professional needs may be a more efficient means to an end as autonomy can provide teachers with the ability to choose the problem and identify the best solution to the problem (Bonner, 2006).

As discussed above, the educational community agrees that highly qualified teachers are critical to student learning. Furthermore, professional development that allows teachers control of their own learning could lead to other professional behaviors that are associated with meaningful professional development and growth. The power of the CTAAP model is that it provides teachers with the autonomy to define the objectives, establish professional networks, and identify and utilize strategies that improve pedagogy and student learning. In this study, the researchers investigated the impact of these professional development programs on teacher subject knowledge, pedagogical practices, and student learning.

Methodology

According to Patton (2002), when the foundational question in a research investigation deals with understanding the meaning, structure and essence of the lived experience of a phenomenon by a person or group of people, a phenomenological approach to the investigation is appropriate. In this study, we are interested in understanding the lived experiences of teachers who have participated in the CTAAP, thus, we adopted a phenomenological approach to addressing this question. This approach focuses on descriptions of the experience by the persons who have experienced it with a particular emphasis on what they experienced and how they interpreted it. What is important is to discover how the phenomenon, which in this case is the CTAAP, was experienced and perceived by asking the participants of the program directly. Patton suggests, "To gather such data, one must undertake in-depth interviews with people who have directly experienced the phenomenon of interest; that is, they have 'lived experience' as opposed to secondhand experience" (p. 104).

To that end, the methodological approach we adopted for this study is one that incorporates in-depth interviews and surveys of the teachers who experienced, first-hand, the CTAAP. First, a cross-sectional survey (See Appendix A) of CTAAP participants was conducted online in October, 2005. The survey was administered to participants in the sixth cycle of the CTAAP. A total of 26 of 37 (70%) of the surveys were collected online and analyzed for this study. In addition, mid-term progress reports were collected from 11 of the 12 teacher teams and were used for the qualitative analysis.

To gain an understanding of their experience and how they interpreted it, the participating teachers were surveyed about how participation in the CTAAP influenced their relationships at their school, their teaching practices and subject matter knowledge, and their perceptions of themselves as teachers, in terms of empowerment, self-confidence, self-efficacy, and professionalism.

The survey consisted of a series of discrete descriptive questions and is reported as such. However, in order to get a sense of reliability of the measure in terms of consistency of responding, reliability coefficients were calculated for the collection of items. For the thirteen items addressing the impact of the program on collegiality, teamwork, changes in lessons, teaching style, subject matter knowledge, goal achievement, increased student learning, overall benefit, and the self perceptions of empowerment, self-confidence, self-efficacy, and professionalism, the Cronbach's alpha coefficient was 0.76, indicating acceptable internal consistency. Looking at just the consistency of the self-perceptions questions, the five item scale consisting of empowerment, self-confidence, self-efficacy, professionalism, and overall benefit resulted in a reliability coefficient of 0.86.

The content validity of the survey was established by assessing the extent to which the content of the questions addressed the purposes of the program. The survey items were reviewed by program directors and administrators and were judged to be consistent with the objectives and purposes of the program.

Consistent with Patton's recommendation for conducting phenomenological research, this study also utilized in-depth interviews of selected participants to provide greater detail and more explicit information regarding the specific teacher-developed professional development program. Three teams of CTAAP teachers volunteered to participate in the interview process. The information from the interviews and the mid-term reports was coded for themes that evidenced the experiences of the participants and student learning. This approach added richness to the quantitative data and further evidence of the program participants' experiences.

The interview protocol consisted of four predetermined questions, which resulted in an informal, relaxed discussion about teachers' experiences. Questions were developed based on the survey discussed above to gain more insights into teachers' experiences of self-designed professional development programs. The questions were as follows:

(1) How did you come up with your development plans?

(2) How did the school community react to your involvement in the CTAAP?

(3) How has the CTAAP impacted your instructional practices?

(4) How has the CTAAP impacted your students?

Any new questions emerging during interviews were also allowed and the participants were encouraged to freely express their opinions. All the interviews were tape-recorded with permission from the participants. The audio tapes were transcribed

and the transcriptions coded using an inductive coding scheme, allowing themes to emerge. The experiences and perceptions of the different teachers were then analyzed and compared to identify the essence of the CTAAP experience.

Survey Results

Teacher respondents represented program participants from the sixth cycle of CTAAP (2004-06). Teachers indicated that they taught across the grade span from kindergarten through grade 12, and that they taught a diverse population of students. Nearly 40% of the respondents indicated that the majority of their students were minority or English language learners, and more than half indicated that the majority of their students were economically disadvantaged.

To gain insights regarding the impact of the CTAAP on how the participants work with their fellow teachers at their school, respondents were asked how much teamwork they were involved in with their fellow teachers since participating in the CTAAP. Over half of the respondents (56%) indicated they were engaged in a great deal of teamwork, and almost as many (40%) indicated a moderate amount of teamwork.

We also asked whether participation in the program led the teachers to modify their instructional practices (See Table 1). More than one-third (40%) of the respondents indicated they made major modifications to their lessons and more than half (52%) indicated making moderate modifications to their lessons. Twenty-seven percent of the respondents indicated making major changes to their teaching styles. Forty-six percent indicated they made moderate changes to their teaching styles. Thus, it appears that participation in the program has had an impact on most teachers altering their lessons and teaching style in either a moderate or major way.

The respondents also indicated they were offering more interactive instruction (100%) and less teacher-directed instruction (58%). All of the respondents indicated they were more frequently engaging in small group work and cooperative learning, as well as more differentiated instruction, student reflection, and problem solving. The vast majority (79%) indicated they were providing greater breadth of subject

Table 1. Summary of CTAAP Impact on Instructional Practice

Percent of Respondents Endorsing Each Question			
	None/Minor	Moderate	Major
Topic			
To what extent have you modified your lessons as a result of participating in the CTAAP?	8	52	40
To what extent have you modified your teaching style as a result of participating in the CTAAP?	27	46	27

matter coverage and all indicated they were more frequently connecting the lessons with prior knowledge and had a greater learner-centered focus.

Teachers also indicated that participation in the CTAAP enhanced their subject matter knowledge (see Table 2). More than 90% of the respondents indicated that the program had a moderate or major impact on their knowledge. Similarly, half (50%) of the respondents indicated that their participation in the CTAAP had a major impact on improving student learning at their school. Another 33% believed that the program had a moderate impact on improving student learning.

Clearly, the vast majority of the respondents felt the program has had a ben-

Table 2. Summary of CTAAP Impact on Subject Matter Knowledge

Percent of Respondents Endorsing Each Question			
	None/Minor	Moderate	Major
Topic			
What impact have you had on improving student learning as a result of participating in the CTAAP?	17	33	50
To what extent has participation in CTAAP impacted your subject matter knowledge?	4	33	63

Table 3. Summary of CTAAP Impact on Professionalism

Percent of Respondents Endorsing Each Question			
	None/Minor	Moderate	Major
Topic			
To what extent has participating in the CTAAP enhanced your feelings of empowerment as a teacher?	0	12	88
To what extent has participating in the CTAAP enhanced your feelings of self-confidence as a teacher?	0	46	54
To what extent has participating in the CTAAP enhanced your feelings of self-efficacy as a teacher?	0	42	58
To what extent has participating in the CTAAP improved your feelings of professionalism?	0	17	83
To what extent do you believe you have benefited from participating in the CTAAP?	0	8	92

eficial impact not only in enhancing their knowledge, but also in improving the learning of the students they serve. Not surprisingly, all of the respondents felt they benefited in either a moderate or major way from participating in the CTAAP, with 92% indicating a major benefit.

All of the teachers indicated they found major and/or moderate benefits from the CTAAP in terms of enhancing their feelings of empowerment, self-confidence, self-efficacy, and professionalism. Thus, it appears that the CTAAP not only enhances participating teachers' knowledge and their impact on student learning, but it also improves their self-perceptions regarding how well they do their jobs as educators.

Interview Results

Semi-structured interviews were conducted with three teams of teachers who volunteered to share their experiences of designing and implementing their own professional development activities. A total of nine teachers were interviewed, four from Park Western Place Elementary School (Los Angeles Unified School District), three from Butterfield Elementary School (Lake Elsinore Unified School District) and two from Ramona High School (Ramona Unified School District). Each team was unique in that the schools are located in geographically and socioeconomically different areas with varying student populations in terms of ethnicity, socioeconomic status, and level of academic performance.

The teachers from Park Western Place Elementary School designed a project through which teachers learned to teach students nonfiction writing. The project included a variety of professional development activities such as attending workshops and working with journalists from a local city paper. In the second project, the teachers from Butterfield Elementary School focused on improving their instructional capabilities of incorporating the arts of music, movement, and film into Language Arts including reading, writing, speaking, and listening. Therefore, their professional development experiences were geared toward increasing content knowledge and enhancing capacity for curriculum development. Finally, Ramona High School teachers designed professional development activities that exposed them to research perspectives and provided learning opportunities in leading-edge technologies and techniques used by scientists in the fields of biology, physics, and chemistry.

Teachers in Need

All the teachers interviewed felt a great need to receive professional help with their content and pedagogical knowledge when they found out about the CTAAP award. All of them had more than 10 years of teaching experience and had participated in a number of professional development trainings during their teaching careers. Although the previous training activities they attended were useful, after having taught more than 10 years, they felt that those activities were rather repetitive

and not particularly tailored to their needs. Consequently, they were hoping to have new types of professional development programs which updated and enhanced their instructional capabilities in the areas that they felt needed the most improvement. Yet, due to the recent decline of the education budget in the state of California, it became extremely hard for teachers to get resources for different types of training programs other than those resources provided by the district or county. The CTAAP grant provided these teachers with opportunities to design professional development programs which could meet their needs and those of their students. One of the Butterfield elementary school teachers explained:

> I think the CTAAP [model] is very validating in that it lets teachers choose what they need to work at and need help with, what they have always wanted to do. It allows creativity. It lets me build on some strengths that teachers already have to go in a new direction. A lot of time, districts can't provide everything for everybody. So they make some administrative decisions that everybody should do this or that…. It would be nice if every district could have this as a sort of menu…. It is not that district professional developments are bad, but if I've been to five different professional development programs for reading, maybe I want to look with different lenses.

The same view was shared by one of the Ramona high school teachers:

> The district provides some workshops and professional developments…. I like the ones that we developed like going to national conferences, because there is so much available. Having taught for 23 years, I have seen the same thing over and over again…. The district workshops are more ordinary and a lot of them are writing across curriculum. It is worthwhile, but it didn't introduce new technology that I like to learn about. There is nothing to choose in the district programs. I really enjoyed the fact that we were able to choose what we want to go to and what we want to do with CTAAP.

The impact of allowing teachers some autonomy over their professional experiences was displayed by the Park Western Place teachers' encounter with a team of teachers from the New York area when they were attending the Teachers College writing workshop. The New York teachers were sent by their district to a training workshop unlike the Park Western Place teachers. Although they were attending the same workshop, the New York teachers were dispirited that they had to attend regardless of their professional needs. The Park Western teachers thought this anecdote demonstrated the importance of giving teachers the power to design and develop their own professional development programs.

It was clear from the interviews that teacher attitudes, including eagerness to learn new things and openness to new ideas and approaches, is one of the major factors that affect teacher behavior during professional development. The teachers interviewed for this study were proactive and more than willing to acquire resources needed for improving their own learning and teaching experiences. In other words, these teachers are not the 'sit and get' type of teachers who simply do what they

are told. For instance, the two elementary school teams already knew the areas in which they needed to improve and had plans to attend the appropriate conferences, workshops, and classes at local universities. In addition, this group had a list of experts to invite to campus before even applying for the CTAAP.

For example, the Park Western Place teachers considered attending the Teachers College Writing Project at Columbia University to improve student achievement in writing because their students had not made much progress in writing compared to other subject areas such as mathematics and reading. The teachers explained that the pre-service and in-service training they received did not prepare them well for teaching writing. Similarly, the Butterfield teachers wanted to enhance Language Arts instruction by adding elements of music, visual art, filmmaking and storytelling to the curriculum. However, they needed the additional funding that would allow them to design training activities in the most needed areas.

Impact on Teachers and School Community

It is reasonable to conclude that the biggest effect of the CTAAP on the participating teachers was improvement in their knowledge of both academic content and pedagogy. The Park Western Place teachers reported that after attending the Teachers College writing workshop in New York, they felt they knew more about theories, pedagogies, and instructional strategies for teaching students to write and to become good writers. Moreover, they are now very confident about their capability to teach writing, to help students become good writers, and to make differences in students' thinking processes.

The Butterfield teachers stated that they have acquired pedagogical knowledge related to integrating the arts (music, visual and performing arts) into reading and language arts, to add authenticity and creativity to innovate and invigorate the existing curricula. In addition, they have learned some skills as well, including playing musical instruments (drums) and creating multimedia projects using computer-based audio and video editing programs. The 4th grade teacher from this school, for example, learned how to create iMovies at one of the workshops he attended and was able to teach his students to shoot their own performances based on biographies they studied during language arts lessons.

The Ramona High School teachers learned up-to-date DNA technology such as DNA finger printing. In particular, the participating teachers learned about a molecular visualization software program and other multimedia animations of protein interaction with other molecules. Two of them also took a course at a local university that covered recent advances in molecular and cellular biology, including therapeutic cloning, transgenic manipulation of genes, and an overview of adult and embryonic stem cells. Without this new knowledge and technology, the teachers reported that they would have had to teach outdated information from the textbook and students would not have been able to connect to the lesson content.

The impact of the new professional development programs was not only limited

to the participating teachers. Park Western and Butterfield Elementary Schools were, in fact, able to implement new instructional approaches that the participating teachers acquired through their own professional development trainings for the whole school. At Park Western Elementary School, teachers testified that there was never strong resistance to the idea of implementing the new writing program school-wide. Yet, there was a bit of hesitation and frustration because of the time constraint. Nevertheless, when the teachers saw real differences in students' writing after the implementation of the new writing program, the whole school reacted with enthusiasm for the new strategies. Now, the team reports that everybody in the school discusses the new writing program, is eager to learn more about it, and continues asking for help and feedback from the participating teachers.

The CTAAP and teacher-designed professional development programs have also reformed professional development activities and collaboration patterns among teachers in schools. For example, before this project, the professional development days at Park Western Elementary School were more like a discussion session. Teachers tended to talk about weekly activities, but never a concrete instructional planning activity. However, the efforts of the teachers participating in CTAAP have lead to more teacher collaboration in lesson planning related to writing instruction, reviewing and providing feedback to each other, and revising lesson plans after implementation. More importantly, this type of teamwork is not limited to the writing lessons. Since the beginning of the writing project, the school has been utilizing the same procedure for other subject areas. The teachers definitely feel that the CTAAP made an impact on the culture of collaboration and teamwork, although the school was quite teamwork-oriented even before the advent of CTAAP.

Impact on Students

Teachers did not hesitate to claim that their students' motivation to learn has improved since the teachers integrated new instructional strategies into their teaching. Also, teachers were very excited about this change since they all felt the biggest challenge they have as teachers is to motivate students and to be able to do things in ways that are interesting to students. One Ramona high school teacher described her students' improved motivation after they learned DNA finger printing using state-of-the-art technology as follows:

> The students came up and said that it was most interesting thing they ever did…. They were able to see their own DNA and see the real things instead of just doing paper-based work. I definitely think when they see the actual DNA finger printing, they will remember things better.

One Park Western Place Elementary School teacher gave a similar account about changes in the students' attitude toward writing:

> Before, the students neither liked writing nor wrote well. Only a few were considered good writers. However, after the implementation of the Teachers College program, the

students love to share and write about their experiences and thoughts. Students cannot wait to have the writing workshop and want to spend more time on writing.

These observations by the program participants are promising. However, no formal student achievement scores were available to demonstrate the impact of the CTAAP initiated training activities on student performances as much of the interview data were collected prior to the start of state-mandated testing. Another factor that prevented the teachers from gathering more formal student achievement data was that the CTAAP training sessions have been implemented for only one year, which is rather a short period of time to gain any concrete results of new instructional practices. Even though some teachers administered classroom quizzes and tests or collected writing samples, they were not systematic enough to have solid assessment data. The teachers also mentioned that since the standardized assessment has its own unique format which does not necessarily reflect students' actual capability, they were not sure whether or not students' test scores would be affected.

Unforeseen Factor for Success

During the interviews, one unforeseen factor for the successful development and implementation of professional training programs emerged: leadership of the school principal. The teachers believed that the success they were enjoying was made possible by the funding opportunity provided by the CTAAP and the leadership of their principals. The Park Western Place teachers even mentioned that the changes to their writing instruction would happen in the future anyway considering their principal's determination and support, but CTAAP has allowed it to happen sooner and with fewer obstacles. In addition, they felt that without the principal's commitment and leadership, it would not have been possible to implement the program throughout the whole school.

The Butterfield Elementary School teachers felt the same about the leadership of their principal, which was explained as follows:

If we hadn't had our current leadership, we wouldn't even have tried to do the grant. In certain schools or setting, you wouldn't even try to submit something like this. The principal is very supportive of music education and she even makes sure that the art lesson has some math in it—like of symmetry. Our leadership allowed us to be professional enough to make those decisions. She trusts that teachers should know how to teach the standards even though you are not using the scripted textbooks. She believes in integrating arts in other subject matters. So it is not a stretch for her. She does let us develop our own creative talents. She is not a type of person who insists that we should all go and get trained in the same thing. She lets you develop your own talents.

Limitations of This Study

These findings must be considered in the context of the limitations of the study. Notably, the sample size for the survey participants was rather small (N=26), de-

spite the fact that the participation rate was fairly high. As a result, the percentages reported for the survey questions are subject to greater fluctuation with smaller samples. Moreover, the nature of the interview component of the study limits the generalizability of the findings. While the information obtained from these interviews may well reflect the experiences and perceptions of the interviewees, they may not be reflective of the experiences and perceptions of non-interviewed participants. Lastly, the subject sample came from a limited number of participant cycles. Information from a longer period incorporating more cycles of CTAAP recipients would provide a better representation of the experiences and perceptions of these teachers.

Conclusions and Implications

In the CTAAP under study, we have observed three major occurrences. First, teachers have embraced their needs and have more quickly taken steps to address those needs. A prescribed professional development program may stifle a teacher's ability to take proactive steps toward improving their instruction. Second, teachers are pursuing authentic professional development experiences to increase academic content knowledge. Teachers have established working relationships with subject matter content experts in order to enhance their content knowledge. Third, teachers have developed more quickly into the role of teacher-leader. Implementing their classroom and school plans has required teachers to take on leadership roles in their schools.

What is conclusivee from the findings in this study? First, the evidence of the survey and interview data supports the stance that when teachers are empowered to create their own professional growth plan, their passion for teaching and for improving the lives of their students is greatly enhanced. When they are subjected to professional development activities by their administration, they are generally not enthusiastic and feel there is a disconnect between those activities and what they do in the classroom. This conclusion is consistent with related literature (Sparks, 2004; Peckover, et al., 2006).

CTAAP teams also reported the benefits of the collaboration process, both within their teams, and in their schools. Witness what transpired at Park Western Elementary School: what began as a small project expanded to include the entire school. This is also consistent with the literature (Holloway, 2003). There is also a relationship between teacher empowerment in professional development activities and student achievement. While this relationship may not be readily apparent in performance on standardized tests, qualitative data provided by these teachers lends support to the influence on student learning. For example, teachers' observations of student writing samples at Park Western support the impact of the CTAAP on student achievement.

The results of this study may have implications in a number of arenas. First, there

are implications for policy. Permitting teachers to construct their own professional development programs and empowering them to make choices about the content of that program is a very different approach to professional development and has implications about the way resources are used for professional development and for decision-making at the district and school level.

Another policy implication involves the use of resources for teacher professional development. What CTAAP has shown is teachers can effectively develop their own professional development activities with a relatively small amount of resources and have an impact both on their own professional growth and on student learning. Resource allocation is an area of interest to the California Assembly Select Committee on Urban Education. Colbert made a presentation to the committee on CTAAP and made the case that teacher empowerment in this area is an example of "best practice" and should be considered in future legislation focusing on the professional growth of teachers. The chair of the committee, Assembly Member Joe Coto, was very enthusiastic about the project, stating "Your in-service training for teachers appears to be an excellent model. The committee's work is now to consider legislation to provide added support…" (Coto, 2005).

Finally, successful (exemplary) practices that resulted from the implementation of the CTAAP model for professional development were described as having implications for the type of professional development that schools and districts may choose to employ. This research, while still in progress, clearly demonstrates how teacher empowerment in designing, implementing, and assessing professional development can be a powerful model for impacting content knowledge, pedagogy, and student learning.

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Appendix A: CTAAP Survey

Participant ID#:_____

CTAAP Participant Survey

Year of CTAAP Participation (Grant Awarded?):_____

Section I

Demographic information of the students

1. Please indicate the grade level(s) of the students you've taught since participating in the CTAAP. *(Check all that apply)*
    ❍ Pre-K/Kindergarten
    ❍ Grade 1
    ❍ Grade 2

❍ Grade 3
❍ Grade 4
❍ Grade 5
❍ Grade 6
❍ Grade 7
❍ Grade 8
❍ Grade 9
❍ Grade 10
❍ Grade 11
❍ Grade 12

2. Please indicate the percentage of students you have taught since participating in the CTAAP that are Hispanic.
   ❍ 0 to 25%
   ❍ 26 to 50%
   ❍ 51 to 75%
   ❍ Over 75%

3. Please indicate the percentage of students you have taught since participating in the CTAAP that are African American
   ❍ 0 to 25%
   ❍ 26 to 50%
   ❍ 51 to 75%
   ❍ Over 75%

4. Please indicate the percentage of students you have taught since participating in the CTAAP that are Asian American
   ❍ 0 to 25%
   ❍ 26 to 50%
   ❍ 51 to 75%
   ❍ Over 75%

5. Please indicate the percentage of students you have taught since participating in the CTAAP that are Caucasian
   ❍ 0 to 25%
   ❍ 26 to 50%
   ❍ 51 to 75%
   ❍ Over 75%

6. Please indicate the percentage of students you have taught since participating in the CTAAP that are economically disadvantaged
   ❍ 0 to 25%
   ❍ 26 to 50%
   ❍ 51 to 75%
   ❍ Over 75%

7. Please indicate the percentage of students you have taught since participating in the CTAAP that are English language learners
   ❍ 0 to 25%

❍ 26 to 50%
❍ 51 to 75%
❍ Over 75%

Section II

8. Please indicate how collegial you are at work with your fellow teachers since participating in the CTAAP.
　❍ Not at all collegial
　❍ Somewhat collegial
　❍ Moderately collegial
　❍ Very collegial

9. Please indicate how much teamwork you are involved in with your fellow teachers since participating in the CTAAP.
　❍ No teamwork
　❍ Some teamwork
　❍ Moderate amount of teamwork
　❍ A great deal of teamwork

10. To what extent have you modified your lessons as a result of participating in the CTAAP?
　❍ No modification at all
　❍ Some minor modifications
　❍ Moderate modifications
　❍ Major modifications

11. To what extent have you modified your teaching style as a result of participating in the CTAAP?
　❍ No modification at all
　❍ Some minor modifications
　❍ Moderate modifications
　❍ Extensive modifications

12. In what ways are you teaching differently as a result of participating in the CTAAP?
(Check all that apply)
　❍ More interactivity among students
　❍ Less interactivity among students
　❍ More direct instruction
　❍ Less direct instruction
　❍ More small group work
　❍ Less small group work
　❍ More cooperative learning
　❍ Less cooperative learning
　❍ More differentiating instruction
　❍ Less differentiating instruction
　❍ More student reflection
　❍ Less student reflection
　❍ More problem solving

❍ Less problem solving
❍ More critical thinking
❍ Less critical thinking
❍ More depth of subject
❍ Less depth of subject
❍ More breadth of subject
❍ Less breadth of subject
❍ More connecting with prior knowledge
❍ Less connecting with prior knowledge
❍ More learner-centered instruction
❍ Less learner-centered instruction
❍ NONE

13. To what extent has participation in the CTAAP impacted your subject matter knowledge?
❍ No impact at all
❍ Minor impact
❍ Moderate impact
❍ Major impact

14. How well defined were your goals for the CTAAP?
❍ Not at all defined
❍ Poorly defined
❍ Partially defined
❍ Well defined
❍ Very well defined

15. To what extent have you fulfilled the goals you established as a participant in the CTAAP?
❍ Fulfilled none of the goals
❍ Fulfilled some of the goals
❍ Fulfilled most of the goals
❍ Fulfilled all of the goals

16. What impact have you had on improving student learning as a result of participating in the CTAAP?
❍ Not at all
❍ Minor impact
❍ Moderate impact
❍ Major impact

Please give an example of how you have improved student learning:

_____
_____
_____
_____

17. To what extent do you believe you have benefited from participating in the CTAAP?
    ❍ No benefit at all
    ❍ Minor benefit
    ❍ Moderate benefit
    ❍ Major benefit

18. To what extent has participation in the CTAAP enhanced your feelings of empowerment as a teacher?
    ❍ None at all
    ❍ Minor impact
    ❍ Moderate impact
    ❍ Major impact

19. To what extent has participating in the CTAAP enhanced your feelings of self-confidence as a teacher?
    ❍ None at all
    ❍ Minor impact
    ❍ Moderate impact
    ❍ Major impact

20. To what extent has participating in the CTAAP enhanced your feelings of self-efficacy as a teacher?
    ❍ None at all
    ❍ Minor impact
    ❍ Moderate impact
    ❍ Major impact

21. To what extent has participating in the CTAAP improved your feelings of professionalism?
    ❍ None at all
    ❍ Minor impact
    ❍ Moderate impact
    ❍ Major impact

22. To what extent has participating in the CTAAP impacted your feelings toward the professional development activities at your school?
    ❍ None at all
    ❍ Minor positive impact
    ❍ Moderate positive impact
    ❍ Major positive impact
    ❍ Minor negative impact
    ❍ Moderate negative impact
    ❍ Major negative impact

Thank you for participating in this survey.