

Enhancing Teacher Motivation for Professional Development

Scales to Measure Teachers' Beliefs
about Motivation-Related Features
and Outcomes of Prospective, Concurrent,
and Post-PD Interventions

Math and Science Partnership
Motivation Assessment Program II
(MSP-MAP II)
mspmap.org



NSF: EHR 0928103



Abstract

Most teachers participate in some form of professional development (PD) either voluntarily or contractually. The impact of PD depends on whether teachers are motivated and engaged in those experiences. The more PD is considered interesting, useful, and important, the more likely teachers will absorb new ideas, approaches, and skills and apply them to the benefit of their students. The program of research and development described here (a) identified the features of PD interventions that are related to teachers' motivation to participate and be engaged in PD and (b) constructed a series of scales to assess the extent that PD programs include those features. This report presents results of that effort for Math and Science Partnership programs with PD components.

MSP-MAP II

NSF: EHR 0928103

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— Please cite as —

Karabenick, S. A., & Conley, A. (2014). *Enhancing Teacher Motivation for Professional Development: Scales to Measure Teachers' Beliefs about Motivation-Related Features and Outcomes of Prospective, Concurrent, and Post-PD Interventions*. Math and Science Partnership - Motivation Assessment Program, University of Michigan, Ann Arbor, MI.

Any opinions, findings, and conclusions or recommendations expressed in this material are those of the authors and do not necessarily reflect the views of the National Science Foundation.

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Why Teacher Motivation for PD?

Professional development (PD), also referred to as professional learning, is considered an essential feature of programs to improve teacher quality. Although questions persist about its efficacy and sustainability (e.g., Avalos, 2011; Bullough, Jr., 2009; Joyce, Wolf, & Calhoun, 2009; Quint, 2011), most teachers participate in some form of PD either voluntarily, as an informal professional expectation or policy, or more often due to a contractual obligation.

There is general consensus regarding the features of PD programs that are likely to be successful in producing behavioral and attitudinal changes conducive to improved student learning and achievement (Darling-Hammond



et al., 2009; Guskey, 2003; Hassel, 1999; Hawley & Valli, 1999; Loucks-Horsley et al., 2003; National Commission on Teaching and America's Future, 1996; Penuel, Fishman, Yamaguchi, & Gallagher, 2007; Weiss & Pasley, 2009).

These findings extend to various subject domains and instructional contexts as well, and focus on the changes in teacher knowledge and teacher practices that mediate the effects of interventions on student achievement (Avalos, 2011; Borko, 2004; Boyd et al., 2003; Heck et al., 2006; Joyce et al., 2009; Wayne et al., 2008; Weiss & Pasley, 2009; Zhang et al., 2008).

Virtually absent from the discourse surrounding teacher PD, however, are systematic analyses and empirical evidence regarding teachers' motivation to participate and be engaged in PD (designated here as PDM)—that is, an examination of PD from the teachers' perspective (Goldsmith & Schifter, 1997).

Tittle (2006), for instance, concluded that while “[t]here are references [in the literature] to motivation and affective (or dispositional) characteristics as important to teacher learning...[f]ew studies address these areas, areas that are likely to be important for assessments of long-term professional learning and development” (p. 976). Boyd et al. (2003) also echoed the call that went out over a decade ago for more attention to motivation: “You have to make every effort to get the teachers there and once you get them there, you have to make sure you have something of high quality that will encourage them to come back.” Motivation was also one of Boyd et al.'s (2003) four key recommendations: “A primary challenge for large-scale professional development projects lies in attracting teachers and sustaining their involvement so that they can receive the full dose of professional development” (p. 112).

Even the evaluation of PD programs requires motivational considerations to the extent that motivation can result in differential rates of participation and engagement, and thus the potential for selection bias (Wayne et al., 2008). And yet, reviews of PD in math and science instruction (Avalos, 2011; Weiss & Pasley, 2009) have not explicitly taken teacher motivation into consideration.

In sum, motivational issues, while noted in passing (e.g., with regard to participation incentives or teacher confidence), remain a critical yet understudied precursor and consequence of teacher PD interventions. Fortunately, the recognized importance of PDM arises at a time of renewed interest in the application of contemporary motivation theory based on studying students to teacher motivation (Richardson, Karabenick, & Watt, 2014; Watt & Richardson, 2007, 2008). This emerging literature helps to understand, and to identify, the relevant features of PD that teachers are likely to find more motivating. Essential to that goal is the development of adequate assessment tools. Accordingly, MSP-MAP II was tasked with developing PDM-related instruments that MSPs (and others) could use for formative and summative, as well as for research purposes.

Determining Features of PD That Promote PDM

Based on results from studies of teachers recruited using national teacher panels from Qualtrics.com, the present report provides scales and items that are designed to assess the extent to which PD programs include features that teachers find more attractive and engaging, and that render them more likely to implement the practices promoted by those programs.

In the absence of prior evidence, we began by conducting foundational research to examine teachers' experiences and characteristics related to PDM. The first two studies ($n = 552$ and $n = 507$) were designed to yield information about the general level of teacher PDM and its association with PD features, contexts, and teacher characteristics. Teachers in Study 1 (<http://mspmap.org/wp-content/uploads/2012/01/Teacher-PDM.pdf>), for example, reported they were very positively motivated to participate in PD, and a majority indicated that PD was useful for improving their teaching practices. They were open to a variety of PD formats, especially those that included teacher participation. Furthermore, teachers' motivation to participate was directly related to their ratings of whether PD helped them with their teaching competence, and such outcomes as students' level of subject-matter understanding, interest, importance, motivation to perform on state tests, to attend class, and do homework.

Results of Study 2 (<http://mspmap.org/wp-content/uploads/2013/10/2013PDreport1.pdf>) indicated that teachers would want to participate in PD to the extent they expected participation to: improve their subject-matter knowledge, be enjoyable and fun, enhance their career, and not require too much time and effort. Teachers reported a preference for PD when other teachers in their school were participating and when their principal encouraged them to participate. The level of teacher PDM was directly related to all of these PD features.

Furthermore, teachers preferred PD formats consisting of a single workshop with teacher participation, a series of workshops with teacher participation, and PD delivered completely or partially online. Of these formats, the more that teachers were motivated to participate in PD the more they preferred a series of workshops with teacher participation. Less preferred were summer institutes, professional learning communities (PLCs), and lectures.

Subsequently, two studies ($n = 214$ and $n = 200$) that were specifically focused on scale and item development asked middle and high school teachers how certain features of PD did or would influence their level of PDM, and a third study (the results of which are presented here), based on a sample of elementary and secondary teachers ($n = 82$), was conducted to validate item formatting and psychometric adequacy.

Development of these instruments was informed by input from teachers involved in MSPs (e.g., TASEL-M: http://taselm.fullerton.edu/tasel_m_index.html), as well as based on prior research designed to determine more effective PD features (Penuel, Fishman, Yamaguchi, & Gallagher, 2007; <http://files.eric.ed.gov/fulltext/ED486225.pdf>) but which did not explicitly take PDM into consideration.



— Note —

Please see mspmap.org for assistance with the design and online collection of teacher data using the PDM scales and items described here.

Survey Versions



Recognizing that the appropriate assessment of PDM may vary for different stages of the PD process, we provide assessment versions designed for use before (prospective), during (concurrent), immediately after (immediate post), and delayed post-PD (follow-up). Depending on the circumstances, all versions can have both formative and summative value.

The **Prospective PD** version yields information about how teachers view an upcoming PD program. In this version of the survey, an option is included to accommodate teachers who believe they have insufficient knowledge to describe or judge the effects of the PD. Note that this version can also be used, with appropriate alterations, to assess teachers' preferred PD features.

The **Concurrent PD** version is formatted to be used during PD; for example, during a series of workshops or an extended professional learning community PD program.

The **Immediate post-PD** version is similar to the concurrent version, with appropriate alterations for teachers to provide evidence related to their just-completed PD.

The **Delayed post-PD** version is similar to the immediate version but formatted to assess the longer-term impact of their participation.

Surveys consist of three sections. Depending on their needs, MSPs may select to include all or only some of the scales and items provided. In addition to the scales, single global items are provided:

- Motivation to participate in PD (PDM)
- Effect of PD on motivation to participate in future PD
- Recommend that other teachers participate in that PD
- Extent that suggested practices were implemented following the PD or are likely to be implemented

Detailed information for scales and items are included in the following appendices:

A: Example Survey (Post-PD Version)

B: Example Survey Items and Scale Psychometric Analyses

C: Example PD Feature Correlations with PDM and Other Indicators

D: Items for Prospective, Concurrent, and Post-PD Scale Versions



Delayed Post-PD Example Results

For illustrative purposes, the following selective results are based on a national Qualtrics panel of full-time K-12 teachers, one-third in primary and two-thirds in secondary grades, including 20% math and 17% science teachers who reported having participated in PD during the prior year. Below is a summary of the scales and examples of scale items. Appendix B provides a detailed analysis of results for the items and scales in this study.

PD Features: Scales and Examples

PD Feature	Items	Example
Extrinsic Contingencies	3	Included a stipend
Administrative Support	4	Your principal actively supports PD attendance even it was not required/mandated
Peer Influence	4	Urged you to participate in the PD
Presenters	3	Have nationally recognized reputations
Autonomy	3	Allowed teachers to adjust the PD schedule to meet their needs
Teacher Involvement in PD Planning	4	Determining the PD format
Coherence	4	Based on what you had learned in earlier professional development experiences
Content Focus	4	New ways of teaching the subject(s) you teach
Mastery	4	Make a special effort to recognize teachers' individual progress
Professional Networking	4	Include opportunities for teachers attending PD to discuss the material presented with each other
Active Teacher PD	5	Include demonstrations of teaching techniques
Feedback	4	Coaching or mentoring in the classroom
Implementation	4	Include examples of how to implement the program's goals and ideas

Teacher Reported Outcomes

Outcome	Items	Example
Teachers changed practices	4	The curriculum content of the subject(s) you teach
Teachers increased teaching motivation	6	Interest in and enjoyment of teaching your subject(s)
Teachers increased their engagement in teaching	4	Thinking about teaching and learning more often
Students increased motivation	4	Interest in the subject(s) you teach
Students increased engagement	4	Think about their studies more often
Students increased use of learning strategies	3	Seek help when they need it
Increases in student achievement (grades and standardized test scores)	2	Increase their test scores in the subject(s) you teach

Consistent with results from other samples (see mspmap.org), as shown in Figure 1, teachers in general reported a moderate to high level of PDM, with 53% indicating being very or extremely motivated. Although sample bias cannot be completely ruled out, the nature of Qualtrics panels render it unlikely that the distribution is the result of self-selection.

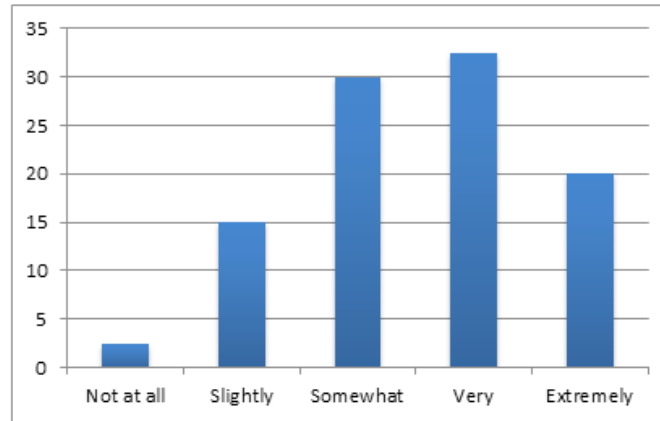


Figure 1. Distribution (%) of Teacher Motivation for Professional Development

Figure 2 describes the extent to which teachers reported the presence of each PD feature (scale from 1 = Not at all true — 5 = Completely true).

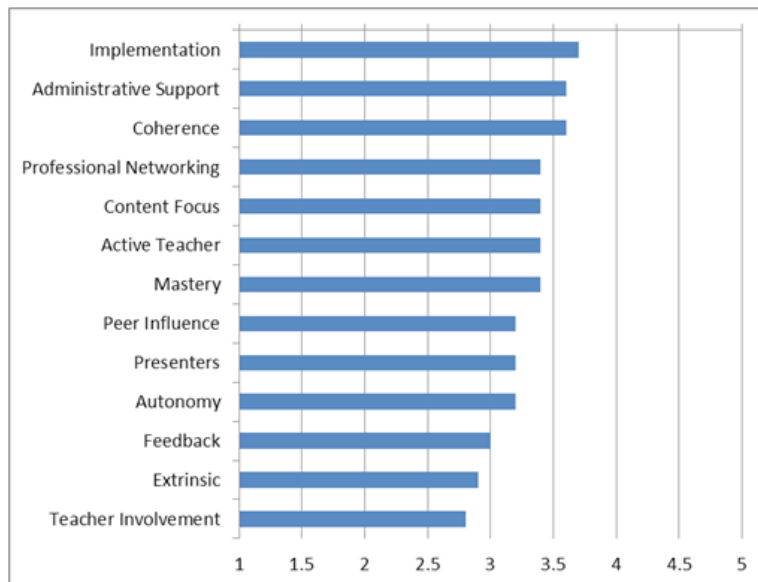


Figure 2. Teacher rated presence of PD Features

Table 1 presents the correlations between teachers' ratings of PD features and their ratings on the PDM continuum shown in Figure 1. In general, the more teachers reported that the features assessed described the PD in which they participated, the more motivated they were to participate (all r -values $p < .001$). Although the differences between the correlations are not large, the strongest associations involved features of the presenters, the extent that the PD content was consistent with their previous PD experiences, and the extent of autonomy they had over their PD experiences.

Table 1. Correlation of PD Features and PDM

PD Features Scales	Correlation (r) with PDM
Extrinsic Contingencies	.48
Administrative Support	.36
Peer Influence	.56
Presenters	.66
Autonomy	.61
Teacher Involvement	.45
Coherence	.62
Content Focus	.54
Mastery	.55
Professional Networking	.43
Active Teacher PD	.52
Feedback	.53
Implementation	.48
Mean of PD Features Scales	.63

Tables 2 and 3 present correlations between teacher-reported outcomes for themselves and their students. All are statistically significant ($p < .001$), which indicates the extent that PDM played a role in those changes.

Table 2. Correlation of Outcomes and PDM

Teacher Outcome	Correlation (r) with PDM
Teacher Instruction Changes	.45
Increased Teacher Efficacy	.63
Increased Teacher Engagement	.56
Mean of Scales	.59

Table 3. Correlation of PD Features and PDM

Teacher-Rated Student Increases	Correlation (r) with PDM
Motivation	.60
Engagement	.60
Learning Strategy Use	.57
Achievement	.49
Mean of Scales	.62

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Appendix A:

Example Survey (Post-PD Version)

West Central High School Teacher Feedback About This Year's Professional Development

You recently participated in the New Learning Paradigm PD. This anonymous survey is designed to learn about your experiences in that activity and its possible impact on your teaching and students. Please respond as best you can to each item.

How motivated were you to participate in that PD?

- Not at all
- Slightly
- Somewhat
- Very
- Extremely

How much did your participation in that PD affect your motivation to participate in PD in the future?

- Much less motivated
- Somewhat less motivated
- No change
- Somewhat more motivated
- Much more motivated

Please indicate whether you recommended that other teachers participate in that PD.

- Strongly recommended they not attend
- Recommended they not attend
- No recommendation
- Recommended they attend
- Strongly recommended they attend

To what extent did you implement the instructional practices suggested by that PD?

- None of the practices
- A few of the practices
- Some of the practices
- Many of the practices
- Most of the practices
- All of the practices

	Not at all true	Slightly true	Somewhat true	Very true	Completely true
<i>We would like to know your thoughts about the PD. Please do this by indicating the extent that each of the following was true. The PD you attended...</i>					
Resulted in a pay bonus	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Included a stipend	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Fulfilled a district or school requirement	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<i>To what extent is it true that...</i>					
There was administrative support and encouragement for teachers to identify, document, and analyze their own PD needs	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
The school administration provided the needed resources for you to implement the PD practices	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Your school administration encouraged you to use the practices that you learned in the PD	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Your principal actively supported PD attendance even if it was not required/mandated	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<i>Other teachers...</i>					
Told you they found the PD useful	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Enjoyed participating in the PD	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Urged you to participate in the PD	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Indicated they intended to change their teaching practices based on the PD recommendations	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<i>The presenters...</i>					
Had extensive knowledge of the subject(s) you teach	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Had nationally recognized reputations	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Were teachers of the subject(s) you teach	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<i>The PD you attended...</i>					
Allowed teachers to choose the topics they wanted to work on	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Allowed teachers to determine how much time to spend on each PD topic	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Allowed teachers to adjust the PD schedule to meet their needs	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<i>Teachers were involved in...</i>					
Selecting the PD program(s)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Determining the PD content	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Determining the PD format	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Setting the PD goals and objectives	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

	Not at all true	Slightly true	Somewhat true	Very true	Completely true
<i>The PD content was...</i>					
Consistent with your own goals for your professional development	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Consistent with existing ideas within your school or department related to teaching practices	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Based on what you had learned in earlier professional development experiences	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Focused on ways to merge new recommended practices with teachers' own teaching goals and practices	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<i>The PD you attended included...</i>					
Methods of teaching specific content of the subject(s) you teach	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
New ways of teaching the subject(s) you teach	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Information about how students learn the content of the subject(s) you teach	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Ways to strengthen your knowledge of the subject(s) you teach	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<i>The PD you attended...</i>					
Emphasized the importance of teachers learning from their mistakes	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Gave teachers opportunities to think about how they have improved their skills or understanding	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Made a special effort to recognize teachers' individual progress	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Stressed to teachers the importance of understanding instructional concepts rather than the one right way to teach	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<i>The PD you attended...</i>					
Provided an opportunity for networking among your colleagues about how to teach your subject(s) in your school	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Facilitated the development of professional communication and contacts with teachers in other schools	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Offered opportunities for professional networking such as collaboration in planning with other teachers	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Included opportunities for teachers attending PD to discuss the material presented with each other	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<i>The PD you attended included...</i>					
Demonstrations of teaching techniques	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Large or small group discussions	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Lectures or presentations to colleagues	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Opportunities for teachers to practice strategies	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Time to explore, question, and debate new ideas about teaching your subject(s)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

	Not at all true	Slightly true	Somewhat true	Very true	Completely true
<i>The PD you attended included...</i>					
Coaching or mentoring in the classroom	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Coaches' observations of your teaching	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Opportunities for other PD participants to observe your teaching	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Practice under simulated conditions, with feedback	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<i>The PD you attended...</i>					
Included examples of how to implement the program's goals and ideas	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Focused on issues with implementing new recommended practices and new curricula	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Acknowledged how difficult it may be for teachers to change their approaches to instruction	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Acknowledged the challenges associated with implementing a new curriculum or practice	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<i>Participation in the PD resulted in your changing...</i>					
The curriculum content of the subject(s) you teach	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
How cognitively challenging your classroom activities are	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
The instructional methods you employ	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
The types or mix of assessments you use to evaluate students	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<i>Participation in the PD resulted in increasing your...</i>					
Interest in and enjoyment of teaching your subject(s)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Confidence in your ability to teach your subject(s)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Belief in the importance of teaching your subject(s)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Confidence in your ability to motivate students to learn your subject(s)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Desire to learn more about your subject(s)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Desire to learn more about how to teach your subject(s)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<i>Participation in the PD resulted in your...</i>					
Thinking about teaching and learning more often	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Feeling more positive about teaching	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Spending more time working on improving your teaching	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Talking to other teachers about teaching and learning	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Not at all true **Slightly true** **Somewhat true** **Very true** **Completely true**

As a consequence of any ways you changed your instruction due to the PD you attended, your students increased their...

Interest in the subject(s) you teach	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Beliefs that the subject(s) you teach is/are important	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Beliefs that the subject(s) you teach is/are useful	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Confidence in their capability to succeed in the subject(s) you teach	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

As a consequence of any ways you changed your instruction due to the PD you attended, your students...

Think about their studies more often	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Feel more positive about their studies	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Spend more time working on their studies	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Talk to other students more often about school work	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

As a consequence of any ways you changed your instruction due to the PD you attended, your students increased the extent to which they...

Seek help when they need it	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Monitor their understanding of your subject(s) (e.g, what they know and don't know)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Use better learning strategies in the subject(s) you teach	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

As a consequence of any ways you changed your instruction due to the PD you attended, your students increased their...

Test scores in the subject(s) you teach	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Scores on standardized tests in the subject(s) you teach	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Appendix B:

Example Survey Items and Scale Psychometric Analyses

PDM Indicators

1. How motivated were you to participate in that PD?
2. How much did your participation in that PD affect your motivation to participate in PD in the future?
3. Please indicate whether you recommended that other teachers participate in that PD.
4. To what extent did you implement the instructional practices suggested by that PD?

Items	Mean	SD
1	3.5	1.1
2	3.3	1.0
3	3.5	1.1
4	3.5	1.3
Total	3.5	0.9

Item 1 Scale: 1 = “Not at all,” 3 = “Somewhat,” 5 = “Extremely”

Item 2 Scale: 1 = “Much less motivated,” 3 = “No change,” 5 = “Much more motivated”

Item 3 Scale: 1 = “Strongly recommended they not attend,” 5 = “Strongly recommended they attend”

Item 4 Scale: 1 = “None of the practices,” 6 = “All of the practices”

Extrinsic Contingencies

The PD you attended...

1. Resulted in a pay bonus
2. Included a stipend
3. Fulfilled a district or school requirement

Descriptive Statistics

Items	Mean*	SD	α with item deleted
1	2.2	1.5	.16
2	2.4	1.7	.15
3	3.9	1.2	.92
Total	2.9	1.1	.65

Factor Structure	
Eigen Value	% Variance Accounted For
1.87	62.3

* Scale: 1 = "Not at all true," 3 = "Somewhat true," 5 = "Completely true"

Correlations with Global Indicators				
Items	PDM	Future PD	Implement	Recommend
1	.49	.31	.42	.10
2	.52	.25	.39	.15
3	.02	.10	.10	.10
Total	.48	.30	.41	.15

Outcome Scales	Correlation with Outcomes
Teaching Changes	.53
Teaching Efficacy	.49
Teacher Engagement	.46
Student Motivation	.50
Student Engagement	.58
Student Strategy	.55
Student Achievement	.53

Administrative Support

To what extent is it true that...

1. There was administrative support and encouragement for teachers to identify, document, and analyze their own PD needs
2. The school administration provided the needed resources for you to implement the PD practices
3. Your school administration encouraged you to use the practices that you learned in the PD
4. Your principal actively supported PD attendance even if it was not required/mandated

Descriptive Statistics

Items	Mean*	SD	α with item deleted
1	3.3	1.4	.70
2	3.5	1.3	.76
3	3.6	1.2	.71
4	3.8	1.2	.84
Total	3.6	1.0	.81

Factor Structure	
Eigen Value	% Variance Accounted For
2.55	63.9

*Scale: 1 = “Not at all true,” 3 = “Somewhat true,” 5 = “Completely true”

Correlations with Global Indicators				
Items	PDM	Future PD	Implement	Recommend
1	.43	.24	.53	.22
2	.30	.31	.34	.19
3	.22	.01	.34	.08
4	.13	.23	.25	.16
Total	.34	.25	.47	.21

Outcome Scales	Correlation with Outcomes
Teaching Changes	.62
Teaching Efficacy	.55
Teacher Engagement	.61
Student Motivation	.62
Student Engagement	.60
Student Strategy	.54
Student Achievement	.46

Peer Influence

Other teachers...

1. Told you they found the PD useful
2. Enjoyed participating in the PD
3. Urged you to participate in the PD
4. Indicated they intended to change their teaching practices based on the PD recommendations

Descriptive Statistics

Items	Mean*	SD	α with item deleted
1	3.4	1.2	0.89
2	3.3	1.3	0.90
3	3.1	1.4	0.90
4	3.2	1.3	0.90
Total	3.2	1.2	.92

Factor Structure	
Eigen Value	% Variance Accounted For
3.23	80.6

* Scale: 1 = “Not at all true,” 3 = “Somewhat true,” 5 = “Completely true”

Correlations with Global Indicators				
Items	PDM	Future PD	Implement	Recommend
1	.47	.29	.36	.28
2	.62	.36	.46	.35
3	.46	.36	.41	.28
4	.47	.25	.38	.23
Total	.56	.35	.45	.32

Outcome Scales	Correlation with Outcomes
Teaching Changes	.60
Teaching Efficacy	.65
Teacher Engagement	.71
Student Motivation	.70
Student Engagement	.70
Student Strategy	.65
Student Achievement	.55

PD Presenters

The presenters...

1. Had extensive knowledge of the subject(s) you teach
2. Had nationally recognized reputations
3. Were teachers of the subject(s) you teach

Descriptive Statistics

Items	Mean*	SD	α with item deleted
1	3.6	1.1	.76
2	2.8	1.5	.76
3	3.1	1.5	.66
Total	3.2	1.2	.80

Factor Structure	
Eigen Value	% Variance Accounted For
2.17	72.3

* Scale: 1 = “Not at all true,” 3 = “Somewhat true,” 5 = “Completely true”

Correlations with Global Indicators				
Items	PDM	Future PD	Implement	Recommend
1	.50	.27	.29	.23
2	.54	.40	.53	.25
3	.62	.37	.49	.36
Total	.66	.41	.52	.33

Outcome Scales	Correlation with Outcomes
Teaching Changes	.67
Teaching Efficacy	.76
Teacher Engagement	.70
Student Motivation	.73
Student Engagement	.75
Student Strategy	.68
Student Achievement	.65

Autonomy

The PD you attended...

1. Allowed teachers to choose the topics they wanted to work on
2. Allowed teachers to determine how much time to spend on each PD topic
3. Allowed teachers to adjust the PD schedule to meet their needs

Descriptive Statistics

Items	Mean*	SD	α with item deleted
1	3.2	1.4	.77
2	3.1	1.3	.67
3	3.1	1.5	.84
Total	3.1	1.2	.83

Factor Structure	
Eigen Value	% Variance Accounted For
2.24	74.8

* Scale: 1 = “Not at all true,” 3 = “Somewhat true,” 5 = “Completely true”

Correlations with Global Indicators				
Items	PDM	Future PD	Implement	Recommend
1	.47	.26	.38	.21
2	.66	.39	.51	.28
3	.46	.20	.33	.13
Total	.61	.33	.47	.24

Outcome Scales	Correlation with Outcomes
Teaching Changes	.66
Teaching Efficacy	.76
Teacher Engagement	.74
Student Motivation	.75
Student Engagement	.81
Student Strategy	.79
Student Achievement	.76

Teacher Involvement

Teachers were involved in...

1. Selecting the PD program(s)
2. Determining the PD content
3. Determining the PD format
4. Setting the PD goals and objectives

Descriptive Statistics

Items	Mean*	SD	α with item deleted
1	2.9	1.4	.96
2	2.6	1.6	.94
3	2.7	1.5	.94
4	2.7	1.5	.93
Total	2.7	1.4	.96

Factor Structure	
Eigen Value	% Variance Accounted For
3.54	88.4

* Scale: 1 = "Not at all true," 3 = "Somewhat true," 5 = "Completely true"

Correlations with Global Indicators				
Items	PDM	Future PD	Implement	Recommend
1	.45	.15	.31	.02
2	.42	.25	.39	.14
3	.36	.16	.30	.09
4	.45	.24	.40	.09
Total	.45	.22	.37	.09

Outcome Scales	Correlation with Outcomes
Teaching Changes	.62
Teaching Efficacy	.59
Teacher Engagement	.59
Student Motivation	.63
Student Engagement	.65
Student Strategy	.56
Student Achievement	.50

Coherence

The PD content was...

1. Consistent with your own goals for your professional development
2. Consistent with existing ideas within your school or department related to teaching practices
3. Based on what you had learned in earlier professional development experiences
4. Focused on ways to merge new recommended practices with teachers' own teaching goals and practices

Descriptive Statistics

Items	Mean*	SD	α with item deleted
1	3.6	1.1	.85
2	3.5	1.1	.89
3	3.5	1.2	.89
4	3.6	1.0	.85
Total	3.6	1.0	.90

Factor Structure	
Eigen Value	% Variance Accounted For
3.08	77.1

* Scale: 1 = "Not at all true," 3 = "Somewhat true," 5 = "Completely true"

Correlations with Global Indicators				
Items	PDM	Future PD	Implement	Recommend
1	.60	.31	.50	0.23
2	.57	.28	.46	0.28
3	.43	.23	.42	0.19
4	.59	.21	.41	0.29
Total	.62	.29	.51	.28

Outcome Scales	Correlation with Outcomes
Teaching Changes	.73
Teaching Efficacy	.77
Teacher Engagement	.81
Student Motivation	.78
Student Engagement	.81
Student Strategy	.76
Student Achievement	.65

Content Focus

The PD you attended included...

1. Methods of teaching specific content of the subject(s) you teach
2. New ways of teaching the subject(s) you teach
3. Information about how students learn the content of the subject(s) you teach
4. Ways to strengthen your knowledge of the subject(s) you teach

Descriptive Statistics

Items	Mean*	SD	α with item deleted
1	3.5	1.3	.82
2	3.4	1.3	.86
3	3.4	1.3	.84
4	3.4	1.2	.88
Total	3.4	1.1	.88

Factor Structure	
Eigen Value	% Variance Accounted For
2.97	74.3

* Scale: 1 = “Not at all true,” 3 = “Somewhat true,” 5 = “Completely true”

Correlations with Global Indicators				
Items	PDM	Future PD	Implement	Recommend
1	.49	.26	.45	.27
2	.45	.40	.54	.41
3	.56	.30	.43	.31
4	.37	.38	.44	.36
Total	.54	.39	.54	.39

Outcome Scales	Correlation with Outcomes
Teaching Changes	.79
Teaching Efficacy	.86
Teacher Engagement	.82
Student Motivation	.82
Student Engagement	.85
Student Strategy	.81
Student Achievement	.69

Mastery

The PD you attended...

1. Emphasized the importance of teachers learning from their mistakes
2. Gave teachers opportunities to think about how they have improved their skills or understanding
3. Made a special effort to recognize teachers' individual progress
4. Stressed to teachers the importance of understanding instructional concepts rather than the one right way to teach

Descriptive Statistics

Items	Mean*	SD	α with item deleted
1	3.3	1.3	.87
2	3.5	1.3	.83
3	3.2	1.3	.87
4	3.4	1.3	.89
Total	3.4	1.1	.90

Factor Structure	
Eigen Value	% Variance Accounted For
3.05	76.2

* Scale: 1 = "Not at all true," 3 = "Somewhat true," 5 = "Completely true"

Correlations with Global Indicators				
Items	PDM	Future PD	Implement	Recommend
1	.55	.41	.45	.27
2	.55	.29	.45	.29
3	.41	.18	.28	.18
4	.42	.16	.36	.26
Total	.55	.30	.44	.29

Outcome Scales	Correlation with Outcomes
Teaching Changes	.76
Teaching Efficacy	.82
Teacher Engagement	.85
Student Motivation	.78
Student Engagement	.87
Student Strategy	.80
Student Achievement	.74

Professional Networking

The PD you attended...

1. Provided an opportunity for networking among your colleagues about how to teach your subject(s) in your school
2. Facilitated the development of professional communication and contacts with teachers in other schools
3. Offered opportunities for professional networking such as collaboration in planning with other teachers
4. Included opportunities for teachers attending PD to discuss the material presented with each other

Descriptive Statistics

Items	Mean*	SD	α with item deleted
1	3.5	1.3	.91
2	3.3	1.4	.92
3	3.3	1.2	.90
4	3.7	1.2	.91
Total	3.5	1.2	.93

Factor Structure	
Eigen Value	% Variance Accounted For
3.33	83.1

* Scale: 1 = "Not at all true," 3 = "Somewhat true," 5 = "Completely true"

Correlations with Global Indicators				
Items	PDM	Future PD	Implement	Recommend
1	.34	.22	.24	.22
2	.42	.29	.37	.32
3	.46	.37	.36	.30
4	.35	.39	.40	.40
Total	.43	.35	.37	.34

Outcome Scales	Correlation with Outcomes
Teaching Changes	.73
Teaching Efficacy	.73
Teacher Engagement	.79
Student Motivation	.74
Student Engagement	.75
Student Strategy	.66
Student Achievement	.53

Active Teacher PD

The PD you attended included...

1. Demonstrations of teaching techniques
2. Large or small group discussions
3. Lectures or presentations to colleagues
4. Opportunities to practice strategies
5. Time to explore, question, and debate new ideas about teaching your subject(s)

Descriptive Statistics

Items	Mean*	SD	α with item deleted
1	3.2	1.3	.89
2	3.5	1.3	.91
3	3.4	1.3	.91
4	3.5	1.3	.89
5	3.5	1.3	.90
Total	3.4	1.1	.92

Factor Structure

Eigen Value	% Variance Accounted For
3.77	75.4

* Scale: 1 = “Not at all true,” 3 = “Somewhat true,” 5 = “Completely true”

Correlations with Global Indicators

Items	PDM	Future PD	Implement	Recommend
1	.51	.32	.41	.28
2	.40	.21	.29	.17
3	.47	.25	.38	.35
4	.45	.28	.41	.25
5	.44	.34	.42	.25
Total	.52	.32	.44	.30

Outcome Scales	Correlation with Outcomes
Teaching Changes	.65
Teaching Efficacy	.72
Teacher Engagement	.76
Student Motivation	.76
Student Engagement	.78
Student Strategy	.70
Student Achievement	.63

Feedback

The PD you attended included...

1. Coaching or mentoring in the classroom
2. Coaches' observations of your teaching
3. Opportunities for other PD participants to observe your teaching
4. Practice under simulated conditions, with feedback

Descriptive Statistics

Items	Mean*	SD	α with item deleted
1	3.1	1.6	.94
2	3.0	1.6	.93
3	2.9	1.6	.94
4	3.2	1.5	.95
Total	3.0	1.4	.95

Factor Structure	
Eigen Value	% Variance Accounted For
3.52	87.9

* Scale: 1 = "Not at all true," 3 = "Somewhat true," 5 = "Completely true"

Correlations with Global Indicators				
Items	PDM	Future PD	Implement	Recommend
1	.45	.29	.46	.23
2	.47	.27	.47	.21
3	.53	.35	.52	.24
4	.52	.35	.54	.30
Total	.53	.34	.53	.26

Outcome Scales	Correlation with Outcomes
Teaching Changes	.72
Teaching Efficacy	.74
Teacher Engagement	.76
Student Motivation	.79
Student Engagement	.84
Student Strategy	.82
Student Achievement	.81

Implementation

The PD you attended...

1. Included examples of how to implement the program's goals and ideas
2. Focused on issues with implementing new recommended practices and new curricula
3. Acknowledged how difficult it may be for teachers to change their approaches to instruction
4. Acknowledged the challenges associated with implementing a new curriculum or practice

Descriptive Statistics

Items	Mean*	SD	α with item deleted
1	3.7	1.1	.89
2	3.6	1.2	.89
3	3.5	1.2	.86
4	3.7	1.2	.86
Total	3.7	1.0	.91

Factor Structure	
Eigen Value	% Variance Accounted For
3.12	77.9

* Scale: 1 = "Not at all true," 3 = "Somewhat true," 5 = "Completely true"

Correlations with Global Indicators				
Items	PDM	Future PD	Implement	Recommend
1	.54	.23	.42	.23
2	.36	.13	.26	.12
3	.37	.21	.35	.13
4	.44	.23	.31	.20
5	.54	.23	.42	.23
6	.36	.13	.26	.12
Total	.48	.22	.38	.19

Outcome Scales	Correlation with Outcomes
Teaching Changes	.56
Teaching Efficacy	.69
Teacher Engagement	.73
Student Motivation	.64
Student Engagement	.70
Student Strategy	.65
Student Achievement	.57

Teaching Changes

Participation in the PD resulted in your changing..

1. The curriculum content of the subject(s) you teach
2. How cognitively challenging your classroom activities are
3. The instructional methods you employ
4. The types or mix of assessments you use to evaluate students

Descriptive Statistics

Items	Mean*	SD	α with item deleted
1	3.2	1.4	.91
2	3.4	1.3	.85
3	3.3	1.2	.85
4	3.4	1.2	.86
Total	3.3	1.1	.90

Factor Structure	
Eigen Value	% Variance Accounted For
3.09	77.2

* Scale: 1 = “Not at all true,” 3 = “Somewhat true,” 5 = “Completely true”

Correlations with Global Indicators				
Items	PDM	Future PD	Implement	Recommend
1	.33	.26	.42	.19
2	.50	.36	.59	.26
3	.40	.39	.61	.42
4	.36	.32	.50	.23
Total	.45	.37	.60	.31

Teacher Efficacy Outcomes

Participation in the PD resulted in increasing your...

1. Interest in and enjoyment of teaching your subject(s)
2. Confidence in your ability to teach your subject(s)
3. Belief in the importance of teaching your subject(s)
4. Confidence in your ability to motivate students to learn your subject(s)
5. Desire to learn more about your subject(s)
6. Desire to learn more about how to teach your subject(s)

Descriptive Statistics

Items	Mean*	SD	α with item deleted
1	3.4	1.2	.94
2	3.5	1.2	.94
3	3.5	1.2	.95
4	3.5	1.2	.94
5	3.4	1.2	.95
6	3.4	1.2	.94
Total	3.4	1.1	.95

Factor Structure

Eigen Value	% Variance Accounted For
4.86	81.0

* Scale: 1 = "Not at all true," 3 = "Somewhat true," 5 = "Completely true"

Correlations with Global Indicators

Items	PDM	Future PD	Implement	Recommend
1	.59	.40	.56	.33
2	.62	.35	.55	.33
3	.50	.23	.41	.23
4	.60	.36	.54	.34
5	.47	.31	.48	.32
6	.62	.39	.53	.36
Total	.63	.38	.57	.35

Teaching Engagement Outcomes

Participation in the PD resulted in your...

1. Thinking about teaching and learning more often
2. Feeling more positive about teaching
3. Spending more time working on improving your teaching
4. Talking to other teachers about teaching your subject(s)

Descriptive Statistics

Items	Mean*	SD	α with item deleted
1	3.5	1.2	.86
2	3.5	1.2	.86
3	3.6	1.2	.86
4	3.6	1.1	.91
Total	3.6	1.0	.90

Factor Structure	
Eigen Value	% Variance Accounted For
3.09	77.3

* Scale: 1 = “Not at all true,” 3 = “Somewhat true,” 5 = “Completely true”

Correlations with Global Indicators				
Items	PDM	Future PD	Implement	Recommend
1	.47	.42	.57	.37
2	.58	.39	.47	.30
3	.56	.25	.47	.22
4	.34	.31	.32	.36
Total	.56	.39	.52	.35

Student Motivation Outcomes

As a consequence of any ways you changed your instruction due to the PD you attended, your students increased their...

1. Interest in the subject(s) you teach
2. Beliefs that the subject(s) you teach is/are important
3. Beliefs that the subject(s) you teach is/are useful
4. Confidence in their capability to succeed in the subject(s) you teach

Descriptive Statistics

Items	Mean*	SD	α with item deleted
1	3.4	1.3	.95
2	3.3	1.3	.95
3	3.2	1.3	.95
4	3.4	1.4	.95
Total	3.3	1.3	.97

Factor Structure

Eigen Value	% Variance Accounted For
3.62	90.4

* Scale: 1 = "Not at all true," 3 = "Somewhat true," 5 = "Completely true"

Correlations with Global Indicators

Items	PDM	Future PD	Implement	Recommend
1	.56	.42	.59	.36
2	.55	.28	.53	.28
3	.57	.33	.54	.30
4	.60	.49	.65	.36
Total	.60	.40	.61	.34

Student Engagement Outcomes

As a consequence of any ways you changed your instruction due to the PD you attended, your students...

1. Think more often about the subject(s) you teach
2. Feel more positive about the subject(s) you teach
3. Spend more time working on the subject(s) you teach
4. Talk to other students more often about the subject(s) you teach

Descriptive Statistics

Items	Mean*	SD	α with item deleted
1	3.2	1.4	.94
2	3.4	1.3	.93
3	3.2	1.3	.94
4	3.2	1.4	.95
Total	3.2	1.3	.96

Factor Structure	
Eigen Value	% Variance Accounted For
3.53	88.1

* Scale: 1 = “Not at all true,” 3 = “Somewhat true,” 5 = “Completely true”

Correlations with Global Indicators				
Items	PDM	Future PD	Implement	Recommend
1	.58	.33	.54	.32
2	.63	.38	.55	.26
3	.54	.29	.54	.22
4	.52	.35	.56	.28
Total	.60	.36	.59	.29

Student Strategy Outcomes

As a consequence of any ways you changed your instruction due to the PD you attended, your students increased the extent to which they...

1. Seek help when they need it in your classes
2. Monitor their understanding of your subject(s) (e.g., what they know and don't know)
3. Use better learning strategies in the subject(s) you teach

Descriptive Statistics

Items	Mean*	SD	α with item deleted
1	3.4	1.3	.89
2	3.4	1.3	.89
3	3.4	1.3	.87
Total	3.4	1.2	.92

Factor Structure

Eigen Value	% Variance Accounted For
2.58	86.0

* Scale: 1 = "Not at all true," 3 = "Somewhat true," 5 = "Completely true"

Correlations with Global Indicators

Items	PDM	Future PD	Implement	Recommend
1	.51	.36	.55	.30
2	.54	.36	.59	.27
3	.55	.31	.53	.23
Total	.57	.37	.60	.29

Appendix C:

Example PD Feature Correlations with PDM and Other Indicators

Items	PDM	Future PD	Implement	Recommend
Extrinsic Contingencies				
Resulted in a pay bonus	.49	.31	.42	.10
Included a stipend	.52	.25	.39	.15
Fulfilled a district or school requirement	.02	.10	.10	.10
Administrative Support				
There was administrative support and encouragement for teachers to identify, document, and analyze their own PD needs	.43	.24	.53	.22
The school administration provided the needed resources for you to implement the PD practices	.30	.31	.34	.19
Your school administration encouraged you to use the practices that you learned in the PD	.22	.01	.34	.08
Your principal actively supported PD attendance even if it was not required/mandated	.13	.23	.25	.16
Peer Influence				
Told you they found the PD useful	.47	.29	.36	.28
Told you they enjoyed participating in the PD	.62	.36	.46	.35
Urged you to participate in the PD	.46	.36	.41	.28
Indicated they intended to change their teaching practices based on the PD recommendations	.47	.25	.38	.23
Presenters				
Had extensive knowledge of the subject(s) you teach	.50	.27	.29	.23
Had nationally recognized reputations	.54	.40	.53	.25
Were teachers of the subject(s) you teach	.62	.37	.49	.36
Autonomy				
Allowed teachers to choose the topics they want to work on	.47	.26	.38	.21
Allowed teachers to determine how much time to spend on each topic	.66	.39	.51	.28
Allowed teachers to adjust the PD schedule to meet their needs	.46	.20	.33	.13
Teacher Involvement in PD Planning				
Selecting the PD program(s)	.45	.15	.31	.02
Determining the PD content	.42	.25	.39	.14
Determining the PD format	.36	.16	.30	.09
Setting PD goals and objectives	.45	.24	.40	.09

Items	PDM	Future PD	Implement	Recommend
Coherence				
Consistent with your own goals for your professional development	.60	.31	.50	.23
Consistent with existing reform ideas within your school or department related to teaching practice	.57	.28	.46	.28
Based on what you had learned in earlier professional development experiences	.43	.23	.42	.19
Focused on ways to merge new recommended practices with teachers' own teaching goals and practices	.59	.21	.41	.29
Content Focus				
Methods of teaching specific content of the subject(s) you teach	.49	.26	.45	.27
New ways of teaching the subject(s) you teach	.45	.40	.54	.41
How students learn the content of the subject(s) you teach	.56	.30	.43	.31
Strengthening your knowledge of the subject(s) you teach	.37	.38	.44	.36
Mastery				
Emphasized the importance of teachers learning from their mistakes	.55	.41	.45	.27
Gave teachers opportunities to think about how they have improved their skills or understanding	.55	.29	.45	.29
Made a special effort to recognize teachers' individual progress	.41	.18	.28	.18
Stressed to teachers the importance of understanding instructional concepts rather than the one right way to teach	.42	.16	.36	.26
Professional Networking				
Provided an opportunity for networking among your colleagues about how to teach your subject(s) in your school	.34	.22	.24	.22
Facilitated the development of professional communication and contacts with other teachers in other schools	.42	.29	.37	.32
Offered opportunities for professional networking such as collaboration in planning with other teachers	.46	.37	.36	.30
Included opportunities for teachers attending PD to discuss the material presented with each other	.35	.39	.40	.40

Items	PDM	Future PD	Implement	Recommend
Active Teacher PD				
Included demonstrations of teaching techniques	.51	.32	.41	.28
Included group discussions	.40	.21	.29	.17
Included lectures or presentations to colleagues	.47	.25	.38	.35
Included opportunities for teachers to practice strategies	.45	.28	.41	.25
Included time to explore, question, and debate new ideas about teaching your subject(s)	.44	.34	.42	.25
Feedback				
Included coaching or mentoring in the classroom	.45	.29	.46	.23
Included coaches' observations of your teaching	.47	.27	.47	.21
Included opportunities for other PD participants to observe your teaching	.53	.35	.52	.24
Included role-playing to illustrate the suggested strategies	.52	.35	.54	.30
Implementation				
Included examples of how to implement the program's goals and ideas	.54	.23	.42	.23
Focused on issues with implementing new recommended practices and new curricula	.36	.13	.26	.12
Acknowledged how difficult it may be for teachers to change their approaches to instruction	.37	.21	.35	.13
Acknowledged the challenges associated with implementing a new curriculum or practice	.44	.23	.31	.20

Appendix D:

Items for Prospective, Concurrent, and Post-PD Scale Versions

PD Scales			
Prospective	Concurrent	Immediate Post-PD	Delayed Post-PD
<i>Participating in PD will...</i>	<i>Participating in PD...</i>	<i>Participating in PD...</i>	<i>The PD you attended...</i>
<p>Result in a pay bonus</p> <p>Include a stipend</p> <p>Will fulfill a district or school requirement</p>	<p>Is resulting in a pay bonus</p> <p>Includes a stipend</p> <p>Is fulfilling a district or school requirement</p>	<p>Resulted in a pay bonus</p> <p>Included a stipend</p> <p>Fulfilled a district or school requirement</p>	<p>Resulted in a pay bonus</p> <p>Included a stipend</p> <p>Fulfilled a district or school requirement</p>
<p>Extrinsic Contingencies</p>			
<p><i>Based on what you know at this time, to what extent do you believe the following are true?</i></p>			
<p>There will be administrative support and encouragement for teachers to identify, document, and analyze their own PD needs</p> <p>The school administration will provide the needed resources for you to implement the PD practices</p> <p>Your school administration will encourage you to use the practices that you learn in the PD</p> <p>Your principal actively supports PD attendance even if it is not required/mandated</p>	<p>There is administrative support and encouragement for teachers to identify, document, and analyze their own PD needs</p> <p>The school administration will provide the needed resources for you to implement the PD practices</p> <p>Your school administration is encouraging you to use the practices that you are learning in the PD</p> <p>Your principal actively supports PD attendance even if it is not required/mandated</p>	<p>There was administrative support and encouragement for teachers to identify, document, and analyze their own PD needs</p> <p>The school administration will provide the needed resources for you to implement the PD practices</p> <p>Your school administration encouraged you to use the practices that you learned in the PD</p> <p>Your principal actively supported PD attendance even if it was not required/mandated</p>	<p>There was administrative support and encouragement for teachers to identify, document, and analyze their own PD needs</p> <p>The school administration provided the needed resources for you to implement the PD practices</p> <p>Your school administration encouraged you to use the practices that you learned in the PD</p> <p>Your principal actively supported PD attendance even if it was not required/mandated</p>
<p>Administrative Support</p>			

PD Scales			
Prospective	Concurrent	Immediate Post-PD	Delayed Post-PD
<i>Other teachers...</i>			
Told you they would find the PD useful	Tell you they are finding the PD useful	Told you they found the PD useful	Told you they found the PD useful
Told you they will enjoy participating in the PD	Tell you they enjoy participating in the PD	Told you they enjoyed participating in the PD	Told you they enjoyed participating in the PD
Urge you to participate in the PD	Are urging you to participate in the PD	Urged you to participate in the PD	Urged you to participate in the PD
Indicated they intend to change their teaching practices based on the PD recommendations	Indicate they intend to change their teaching practices based on the PD recommendations	Indicated they intended to change their teaching practices based on the PD recommendations	Indicated they intended to change their teaching practices based on the PD recommendations
<i>The PD presenters will...</i>			
Have extensive knowledge of the subject(s) you teach	Have extensive knowledge of the subject(s) you teach	Had extensive knowledge of the subject(s) you teach	Had extensive knowledge of the subject(s) you teach
Have nationally recognized reputations	Have nationally recognized reputations	Had nationally recognized reputations	Had nationally recognized reputations
Be teachers of the subject(s) you teach	Are teachers of the subject(s) you teach	Were teachers of the subject(s) you teach	Were teachers of the subject(s) you teach
<i>The PD will...</i>			
Allow teachers to choose the topics they want to work on	Allows teachers to choose the topics they wanted to work on	Allowed teachers to choose the topics they wanted to work on	Allowed teachers to choose the topics they wanted to work on
Allow teachers to determine how much time to spend on each PD topic	Allows teachers to determine how much time to spend on each PD topic	Allowed teachers to determine how much time to spend on each PD topic	Allowed teachers to determine how much time to spend on each PD topic
Allow teachers to adjust the PD schedule to meet their needs	Allows teachers to adjust the PD schedule to meet their needs	Allowed teachers to adjust the PD schedule to meet their needs	Allowed teachers to adjust the PD schedule to meet their needs

Peer Influence

Presenters

Autonomy

PD Scales			
Prospective	Concurrent	Immediate Post-PD	Delayed Post-PD
<i>Teachers are/were involved in...</i>			
<p>Teacher Involvement in PD Planning</p> <p>Selecting the PD program(s)</p> <p>Determining the PD content</p> <p>Determining the PD format</p> <p>Setting PD goals and objectives</p> <p><i>The PD content will be...</i></p> <p>Consistent with your own goals for your professional development</p> <p>Consistent with existing reform ideas within your school or department related to teaching practices</p> <p>Based on what you had learned in earlier professional development experiences</p> <p>Focused on ways to merge new recommended practices with teachers' own teaching goals and practices</p> <p><i>The PD will include...</i></p> <p>Methods of teaching specific content of the subject(s) you teach</p> <p>New ways of teaching the subject(s) you teach</p> <p>How students learn the content of the subject(s) you teach</p> <p>Strengthening your knowledge of the subject(s) you teach</p>	<p><i>Teachers are/were involved in...</i></p> <p>Selecting the PD program(s)</p> <p>Determining the PD content</p> <p>Determining the PD format</p> <p>Setting PD goals and objectives</p> <p><i>The PD content is...</i></p> <p>Consistent with your own goals for your professional development</p> <p>Consistent with existing reform ideas within your school or department related to teaching practices</p> <p>Based on what you have learned in earlier professional development experiences</p> <p>Focused on ways to merge new recommended practices with teachers' own teaching goals and practices</p> <p><i>The PD includes...</i></p> <p>Methods of teaching specific content of the subject(s) you teach</p> <p>New ways of teaching the subject(s) you teach</p> <p>How students learn the content of the subject(s) you teach</p> <p>Strengthening your knowledge of the subject(s) you teach</p>	<p><i>Teachers were involved in...</i></p> <p>Selecting the PD program(s)</p> <p>Determining the PD content</p> <p>Determining the PD format</p> <p>Setting PD goals and objectives</p> <p><i>The PD content was...</i></p> <p>Consistent with your own goals for your professional development</p> <p>Consistent with existing reform ideas within your school or department related to teaching practices</p> <p>Based on what you have learned in earlier professional development experiences</p> <p>Focused on ways to merge new recommended practices with teachers' own teaching goals and practices</p> <p><i>The PD you just attended included...</i></p> <p>Methods of teaching specific content of the subject(s) you teach</p> <p>New ways of teaching the subject(s) you teach</p> <p>How students learn the content of the subject(s) you teach</p> <p>Strengthening your knowledge of the subject(s) you teach</p>	<p><i>Teachers were involved in...</i></p> <p>Selecting the PD program(s)</p> <p>Determining the PD content</p> <p>Determining the PD format</p> <p>Setting PD goals and objectives</p> <p><i>The PD content was...</i></p> <p>Consistent with your own goals for your professional development</p> <p>Consistent with existing reform ideas within your school or department related to teaching practices</p> <p>Based on what you had learned in earlier professional development experiences</p> <p>Focused on ways to merge new recommended practices with teachers' own teaching goals and practices</p> <p><i>The PD you attended included...</i></p> <p>Methods of teaching specific content of the subject(s) you teach</p> <p>New ways of teaching the subject(s) you teach</p> <p>How students learn the content of the subject(s) you teach</p> <p>Ways to strengthen your knowledge of the subject(s) you teach</p>
Coherence			
Content Focus			

PD Scales			
Prospective	Concurrent	Immediate Post-PD	Delayed Post-PD
<i>The PD will...</i>	<i>The PD...</i>	<i>The PD you just attended...</i>	<i>The PD you attended...</i>
<p>Emphasize the importance of teachers learning from their mistakes</p> <p>Give teachers opportunities to think about how they have improved their skills or understanding</p> <p>Make a special effort to recognize teachers' individual progress</p> <p>Stress to teachers the importance of understanding instructional concepts rather than the one right way to teach</p>	<p>Emphasizes the importance of teachers learning from their mistakes</p> <p>Gives teachers opportunities to think about how they have improved their skills or understanding</p> <p>Makes a special effort to recognize teachers' individual progress</p> <p>Stresses to teachers the importance of understanding instructional concepts rather than the one right way to teach</p>	<p>Emphasized the importance of teachers learning from their mistakes</p> <p>Gave teachers opportunities to think about how they have improved their skills or understanding</p> <p>Made a special effort to recognize teachers' individual progress</p> <p>Stressed to teachers the importance of understanding instructional concepts rather than the one right way to teach</p>	<p>Emphasized the importance of teachers learning from their mistakes</p> <p>Gave teachers opportunities to think about how they have improved their skills or understanding</p> <p>Made a special effort to recognize teachers' individual progress</p> <p>Stressed to teachers the importance of understanding instructional concepts rather than the one right way to teach</p>
Mastery			
<i>The PD will...</i>	<i>The PD...</i>	<i>The PD you just attended...</i>	<i>The PD you attended...</i>
<p>Provide an opportunity for networking among your colleagues about how to teach your subject(s) in your school</p> <p>Facilitate the development of professional communication and contacts with teachers in other schools</p> <p>Offer opportunities for professional networking such as collaboration in planning with other teachers</p> <p>Include opportunities for teachers attending PD to discuss the material presented with each other</p>	<p>Provides an opportunity for networking among your colleagues about how to teach your subject(s) in your school</p> <p>Facilitates the development of professional communication and contacts with teachers in other schools</p> <p>Offers opportunities for professional networking such as collaboration in planning with other teachers</p> <p>Includes opportunities for teachers attending PD to discuss the material presented with each other</p>	<p>Provided an opportunity for networking among your colleagues about how to teach your subject(s) in your school</p> <p>Facilitated the development of professional communication and contacts with teachers in other schools</p> <p>Offered opportunities for professional networking such as collaboration in planning with other teachers</p> <p>Included opportunities for teachers attending PD to discuss the material presented with each other</p>	<p>Provided an opportunity for networking among your colleagues about how to teach your subject(s) in your school</p> <p>Facilitated the development of professional communication and contacts with teachers in other schools</p> <p>Offered opportunities for professional networking such as collaboration in planning with other teachers</p> <p>Included opportunities for teachers attending PD to discuss the material presented with each other</p>
Professional Networking			

PD Scales			
Prospective	Concurrent	Immediate Post-PD	Delayed Post-PD
<i>The PD will include...</i>			
Demonstrations of teaching techniques	Demonstrations of teaching techniques	Demonstrations of teaching techniques	Demonstrations of teaching techniques
Large or small group discussions	Large or small group discussions	Large or small group discussions	Large or small group discussions
Lectures or presentations to colleagues	Lectures or presentations to colleagues	Lectures or presentations to colleagues	Lectures or presentations to colleagues
Opportunities for teachers to practice strategies	Opportunities for teachers to practice strategies	Opportunities for teachers to practice strategies	Opportunities for teachers to practice strategies
Time to explore, question, and debate new ideas about teaching your subject(s)	Time to explore, question, and debate new ideas about teaching your subject(s)	Time to explore, question, and debate new ideas about teaching your subject(s)	Time to explore, question, and debate new ideas about teaching your subject(s)
<i>The PD will include...</i>			
Coaching or mentoring in the classroom	Coaching or mentoring in the classroom	Coaching or mentoring in the classroom	Coaching or mentoring in the classroom
Coaches' observations of your teaching	Coaches' observations of your teaching	Coaches' observations of your teaching	Coaches' observations of your teaching
Opportunities for other PD participants to observe your teaching	Opportunities for other PD participants to observe your teaching	Opportunities for other PD participants to observe your teaching	Opportunities for other PD participants to observe your teaching
Practice under simulated conditions, with feedback	Practice under simulated conditions, with feedback	Practice under simulated conditions, with feedback	Practice under simulated conditions, with feedback
Active Teacher PD			
<i>The PD includes...</i>			
Demonstrations of teaching techniques	Demonstrations of teaching techniques	Demonstrations of teaching techniques	Demonstrations of teaching techniques
Large or small group discussions	Large or small group discussions	Large or small group discussions	Large or small group discussions
Lectures or presentations to colleagues	Lectures or presentations to colleagues	Lectures or presentations to colleagues	Lectures or presentations to colleagues
Opportunities for teachers to practice strategies	Opportunities for teachers to practice strategies	Opportunities for teachers to practice strategies	Opportunities for teachers to practice strategies
Time to explore, question, and debate new ideas about teaching your subject(s)	Time to explore, question, and debate new ideas about teaching your subject(s)	Time to explore, question, and debate new ideas about teaching your subject(s)	Time to explore, question, and debate new ideas about teaching your subject(s)
<i>The PD includes...</i>			
Coaching or mentoring in the classroom	Coaching or mentoring in the classroom	Coaching or mentoring in the classroom	Coaching or mentoring in the classroom
Coaches' observations of your teaching	Coaches' observations of your teaching	Coaches' observations of your teaching	Coaches' observations of your teaching
Opportunities for other PD participants to observe your teaching	Opportunities for other PD participants to observe your teaching	Opportunities for other PD participants to observe your teaching	Opportunities for other PD participants to observe your teaching
Practice under simulated conditions, with feedback	Practice under simulated conditions, with feedback	Practice under simulated conditions, with feedback	Practice under simulated conditions, with feedback
Feedback			
<i>The PD just attended included...</i>			
Coaching or mentoring in the classroom	Coaching or mentoring in the classroom	Coaching or mentoring in the classroom	Coaching or mentoring in the classroom
Coaches' observations of your teaching	Coaches' observations of your teaching	Coaches' observations of your teaching	Coaches' observations of your teaching
Opportunities for other PD participants to observe your teaching	Opportunities for other PD participants to observe your teaching	Opportunities for other PD participants to observe your teaching	Opportunities for other PD participants to observe your teaching
Practice under simulated conditions, with feedback	Practice under simulated conditions, with feedback	Practice under simulated conditions, with feedback	Practice under simulated conditions, with feedback

PD Scales			
Prospective	Concurrent	Immediate Post-PD	Delayed Post-PD
<i>The PD will...</i>	<i>The PD you are attending...</i>	<i>The PD you just attended...</i>	<i>The PD you attended...</i>
<p>Include examples of how to implement the program's goals and ideas</p> <p>Focus on issues with implementing new recommended practices and new curricula</p> <p>Acknowledge how difficult it may be for teachers to change their approaches to instruction</p> <p>Acknowledge the challenges associated with implementing a new curriculum or practice</p>	<p>Includes examples of how to implement the program's goals and ideas</p> <p>Focuses on issues with implementing new recommended practices and new curricula</p> <p>Acknowledges how difficult it may be for teachers to change their approaches to instruction</p> <p>Acknowledges the challenges associated with implementing a new curriculum or practice</p>	<p>Included examples of how to implement the program's goals and ideas</p> <p>Focused on issues with implementing new recommended practices and new curricula</p> <p>Acknowledged how difficult it may be for teachers to change their approaches to instruction</p> <p>Acknowledged the challenges associated with implementing a new curriculum or practice</p>	<p>Included examples of how to implement the program's goals and ideas</p> <p>Focused on issues with implementing new recommended practices and new curricula</p> <p>Acknowledged how difficult it may be for teachers to change their approaches to instruction</p> <p>Acknowledged the challenges associated with implementing a new curriculum or practice</p>
Implementation			
Outcome Scales			
<i>The PD will change...</i>	<i>The PD you are attending is likely to change...</i>	<i>The PD you attended resulted in your changing...</i>	<i>The PD you attended resulted in your changing...</i>
<p>The curriculum content of the subject(s) you teach</p> <p>How cognitively challenging your classroom activities are</p> <p>The instructional methods you employ</p> <p>The types or mix of assessments you use to evaluate students</p>	<p>The curriculum content of the subject(s) you teach</p> <p>How cognitively challenging your classroom activities are</p> <p>The instructional methods you employ</p> <p>The types or mix of assessments you use to evaluate students</p>	<p>The curriculum content of the subject(s) you teach</p> <p>How cognitively challenging your classroom activities are</p> <p>The instructional methods you employ</p> <p>The types or mix of assessments you use to evaluate students</p>	<p>The curriculum content of the subject(s) you teach</p> <p>How cognitively challenging your classroom activities are</p> <p>The instructional methods you employ</p> <p>The types or mix of assessments you use to evaluate students</p>
Teacher Changes			

PD Scales			
Prospective	Concurrent	Immediate Post-PD	Delayed Post-PD
<i>Participation in the PD will result in increasing your...</i>	<i>Participation in the PD is increasing your...</i>	<i>Participation in the PD resulted in increasing your...</i>	<i>Participation in the PD resulted in increasing your...</i>
Interest in and enjoyment of teaching your subject(s)	Interest in and enjoyment of teaching your subject(s)	Interest in and enjoyment of teaching your subject(s)	Interest in and enjoyment of teaching your subject(s)
Confidence in your ability to teach your subject(s)	Confidence in your ability to teach your subject(s)	Confidence in your ability to teach your subject(s)	Confidence in your ability to teach your subject(s)
Belief in the importance of teaching your subject(s)	Belief in the importance of teaching your subject(s)	Belief in the importance of teaching your subject(s)	Belief in the importance of teaching your subject(s)
Confidence in your ability to motivate students to learn your subject(s)	Confidence in your ability to motivate students to learn your subject(s)	Confidence in your ability to motivate students to learn your subject(s)	Confidence in your ability to motivate students to learn your subject(s)
Desire to learn more about your subject(s)	Desire to learn more about your subject(s)	Desire to learn more about your subject(s)	Desire to learn more about your subject(s)
Desire to learn more about how to teach your subject(s)	Desire to learn more about how to teach your subject(s)	Desire to learn more about how to teach your subject(s)	Desire to learn more about how to teach your subject(s)
<i>Participation in the PD will result in your...</i>	<i>Participation in the PD is resulting in your...</i>	<i>Participation in the PD resulted in your...</i>	<i>Participation in the PD resulted in your...</i>
Thinking about teaching and learning more often	Thinking about teaching and learning more often	Thinking about teaching and learning more often	Thinking about teaching and learning more often
Feeling more positive about teaching	Feeling more positive about teaching	Feeling more positive about teaching	Feeling more positive about teaching
Spending more time working on improving your teaching	Spending more time working on improving your teaching	Spending more time working on improving your teaching	Spending more time working on improving your teaching
Talking to other teachers about teaching and learning	Talking to other teachers about teaching and learning	Talking to other teachers about teaching and learning	Talking to other teachers about teaching and learning
Effect on Teaching Motivation			
Teacher Engagement			

PD Scales			
	Prospective	Concurrent	Delayed Post-PD
	Immediate Post-PD		
	<i>As a consequence of any ways you change your instruction due to the PD you are about to attend, your students will be likely to increase their...</i>	<i>As a consequence of any ways you change your instruction due to the PD you are attending, your students are likely to increase their...</i>	<i>As a consequence of any ways you changed your instruction due to the PD you attended, your students increased their...</i>
	Interest in the subject(s) you teach	Interest in the subject(s) you teach	Interest in the subject(s) you teach
Student Motivation	Beliefs that the subject(s) you teach is/are important	Beliefs that the subject(s) you teach is/are important	Beliefs that the subject(s) you teach is/are important
	Beliefs that the subject(s) you teach is/are useful	Beliefs that the subject(s) you teach is/are useful	Beliefs that the subject(s) you teach is/are useful
	Confidence in their capability to succeed in the subject(s) you teach	Confidence in their capability to succeed in the subject(s) you teach	Confidence in their capability to succeed in the subject(s) you teach
	<i>As a consequence of any ways you change your instruction due to the PD you are about to attend, your students will be likely to...</i>	<i>As a consequence of any ways you change your instruction due to the PD you just attended, your students are likely to...</i>	<i>As a consequence of any ways you changed your instruction due to the PD you attended, your students...</i>
	Think about their studies more often	Think about their studies more often	Think about their studies more often
Student Engagement	Feel more positive about their studies	Feel more positive about their studies	Feel more positive about their studies
	Spend more time working on their studies	Spend more time working on their studies	Spend more time working on their studies
	Talk to other students about school work more often	Talk to other students about school work more often	Talk to other students about school work more often

PD Scales			
Prospective	Concurrent	Immediate Post-PD	Delayed Post-PD
<i>As a consequence of any ways you change your instruction due to the PD you are about to attend, your students are likely to increase the extent to which they...</i>	<i>As a consequence of any ways you change your instruction due to the PD you are attending, your students are likely to increase the extent to which they...</i>	<i>As a consequence of any ways you change your instruction due to the PD you just attended, your students are likely to increase the extent to which they...</i>	<i>As a consequence of any ways you changed your instruction due to the PD you attended, your students increased the extent to which they...</i>
Student Strategy			
Seek help when they need it	Seek help when they need it	Seek help when they need it	Seek help when they need it
Monitor their understanding of your subject(s) (e.g, what they know and don't know)	Monitor their understanding of your subject(s) (e-g, what they know and don't know)	Monitor their understanding of your subject(s) (e-g, what they know and don't know)	Monitor their understanding of your subject(s) (e.g, what they know and don't know)
Use better learning strategies in the subject(s) you teach	Use better learning strategies in the subject(s) you teach	Use better learning strategies in the subject(s) you teach	Use better learning strategies in the subject(s) you teach
<i>As a consequence of any ways you change your instruction due to the PD you are about to attend, your students are likely to increase their...</i>	<i>As a consequence of any ways you change your instruction due to the PD you are attending, your students are likely to increase their...</i>	<i>As a consequence of any ways you change your instruction due to the PD you just attended, your students are likely to increase their...</i>	<i>As a consequence of any ways you changed your instruction due to the PD you attended, your students increased their...</i>
Student Achievement			
Test scores in the subject(s) you teach	Test scores in the subject(s) you teach	Test scores in the subject(s) you teach	Test scores in the subject(s) you teach
Scores on standardized tests in the subject(s) you teach	Scores on standardized tests in the subject(s) you teach	Scores on standardized tests in the subject(s) you teach	Scores on standardized tests in the subject(s) you teach