

How Teachers Change:

A Study of Professional Development in Adult Education

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Report Summary

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How Teachers Change: A Study of Professional Development in Adult Education

- NCSALL Reports #25 (Smith, Hofer, Gillespie, Solomon, & Rowe, 2003). To download or order a printed copy, click "Publications," scroll down to "NCSALL Reports," and click "By title."
- NCSALL Reports #25a (Report Summary) (Smith, Hofer, Gillespie, Solomon, & Rowe, 2003). To download, click "Publications," scroll down to "NCSALL Summary Reports," and click "By title."
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The Characteristics and Concerns of Adult Basic Education Teachers

- NCSALL Reports #26 (Smith & Hofer, 2003). To download or order a printed copy, click "Publications," scroll down to "NCSALL Reports," and click "By title."
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- *Survey and Methodology for Assessing Adult Basic Education Teachers' Characteristics and Concerns* (Smith & Hofer, 2003). To download, visit the NCSALL Web site.

Focus on Basics

- "Pathways to Change: A Summary of Findings from NCSALL's Staff Development Study" (Smith & Hofer, 2002) (Volume 5, Issue D). To download, click "Publications," scroll down to "*Focus on Basics*" and click "By title."
- "The Working Conditions of Adult Literacy Teachers" (Smith, Hofer, & Gillespie, 2001) (Volume 4, Issue D). To download, click "Publications," scroll down to "*Focus on Basics*" and click "By title."

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INTRODUCTION

This study was one of many sponsored by the National Center for the Study of Adult Learning and Literacy (NCSALL) during its first five-year phase (1996–2001). The goal of NCSALL is to improve the quality of practice in adult basic education, English for speakers of other languages, and adult secondary education programs through basic and applied research.

The NCSALL Professional Development Study was conducted with 106 adult education¹ teachers in three New England states (Connecticut, Maine, and Massachusetts) between 1998 and 2000. Teachers participated in one of three 18-hour professional development activities (either multisession workshop, mentor teacher group, or practitioner research group), and they provided data to researchers through questionnaires and interviews before, after, and one year after participating in the professional development.

The research question that guided the NCSALL Professional Development Study was:

How do practitioners change as a result of participating in one of three different models of professional development, and what are the most important factors that influence (support or hinder) this change?

This study was conducted primarily to help professional development decision-makers—adult education administrators and professional developers at the program and state level—plan and deliver effective professional development, and understand the factors that influence how teachers change as a result of professional development. This summary report highlights the findings and recommendations that arose from this study. For the complete report, which includes a thorough literature review and detailed findings section, please see NCSALL Reports #25. Other articles and reports of interest from this study include:²

- *The Working Conditions of Adult Literacy Teachers* (Smith, Hofer, & Gillespie, 2001)³

¹ In this report, “adult education” refers to the broad range of basic and literacy education services for adults, including instruction for adult basic education, adult secondary education, and English for speakers of other languages students.

² All articles and reports on the NCSALL Professional Development Study are available for downloading from NCSALL’s Web site (<http://ncsall.gse.harvard.edu>).

³ *Focus on Basics*, Volume 4, Issue D. (April 2001). National Center for the Study of Adult Learning and Literacy.

- *Pathways to Change: A Summary of Findings from NCSALL's Staff Development Study* (Smith & Hofer, 2002)⁴
- *The Characteristics and Concerns of Adult Education Teachers* (Smith & Hofer, 2003)⁵

The study design was based on the overall hypothesis that teachers change in different ways and amounts as a result of participating in professional development, and that multiple factors influence the type and amount of change practitioners undergo, including:

- **Individual factors**—their experience, background, and motivation about teaching as they come into the professional development
- **Professional development factors**—the quality and amount of professional development attended
- **Program and system factors**—the structure of and support offered by the program, adult education system, and professional development system in which they work, including teachers' working conditions, which we define as their access to resources, professional development and information, colleagues and directors, decision-making, and well-supported jobs⁶

The main activities of the study were:

1. Developing and testing three models of professional development activities appropriate for adult education.
2. Gauging the change (differences in thinking and acting) undergone by teachers who participated in one of these professional development activities.
3. Identifying the most important factors that influenced whether and how teachers changed.

Study Rationale and Literature Review⁷

The effectiveness of different professional development approaches is an issue of much debate in the literature on professional development. Professional development decision-makers need to decide between competing models of professional development—

⁴ *Focus on Basics*, Volume 5, Issue D. (June 2002). National Center for the Study of Adult Learning and Literacy.

⁵ NCSALL Reports # 26. (November 2003). National Center for the Study of Adult Learning and Literacy.

⁶ We define "well-supported jobs" as full time, relatively well-paid, and stable jobs that include benefits (medical coverage, paid vacation and sick time, pension plans, etc.), paid preparation time, and paid professional development release time.

⁷ For the full literature review, see the full research report (NCSALL Reports #25).

traditional and “reform”—based on new philosophies about the purpose of professional development: helping teachers acquire a “change orientation” rather than just adopt new techniques (Richardson, 1998). Traditional activities, such as workshops, are very common in the adult education field because they are usually shorter in duration, making it easier for part-time adult education teachers to attend. Reform activities, such as study circles, practitioner inquiry, and mentoring, are less common but they may also be appropriate for adult education because they can be based in the program, making it more convenient for teachers with limited time for travel and participation. However, we do not know whether reform activities are more effective than traditional activities (workshops) within our field, and even in K–12, “there is a clear need for new, systematic research on the effectiveness of alternative strategies for professional development” (Garet, Porter, Desimone, Birman, & Yoon, 2001).

Key stakeholders in the adult education field supported our idea of designing this study as a comparison of appropriate models of professional development. At the beginning of our design phase, we organized a one-day meeting of 22 professional development experts and providers, teachers, and policymakers in Washington, DC in February 1997, cosponsored with Pelavin Research Institute. We asked the participants to discuss and prioritize the key needs for information and research about professional development in the field of adult education. The results indicated four main questions for research around professional development:

1. What impact can we expect from professional development?
2. How can impact be measured?
3. Which approaches to professional development are most effective in achieving this impact?
4. Which professional development systems best support effective professional development?

The synthesis of responses from this group of experts confirmed our intention to compare different models of (or approaches to) professional development. Although we did not feel we had the resources to measure student achievement as a result of professional development, we were able to investigate the impact on teacher change. Therefore, we felt that the immediate and most important research question for our field concerned the design of professional development and the factors that influence its effectiveness.

After further discussion with stakeholders in the field, we decided to test three models of professional development appropriate to adult education:

1. **Multisession workshops**—a traditional professional development activity, but organized in multiple sessions and including experiential, active learning activities.
2. **Mentor teacher groups**—a “reform” type of professional development activity, blending features of study circles with features of peer coaching and observation.
3. **Practitioner research groups**—a “reform” type of professional development activity where teachers investigate their own classroom practice by collecting and analyzing data to answer a question of concern to them.

To aid us in designing the highest quality professional development to test, and to help us understand the type of data we should collect about the individual, professional development, program, and system factors that might influence the effectiveness of the different models, we conducted a literature review of the existing research on professional development in both K–12 and adult education.

Overall, our review of the literature on professional development in both K–12 and adult education provided us with a rationale for the design of the study (testing multiple models of professional development that could be appropriate for the field of adult education), and the elements of professional development that make it most effective for teacher growth. The review also informed our understanding of what is already known about how teachers change and about the factors that have been shown to affect change, and it confirmed the factors related to adult education that should be investigated in our study.

Methodology

We conducted the study in Massachusetts, Connecticut, and Maine in order to make data collection cost-effective yet allow us to achieve a sample size of 100 teachers, large enough to permit a quantitative analysis of data. Locating the study across three states also provided the advantage of including a wider range of program and system factors. All three states offered the full range of services to adult basic education, ESOL, and GED learners, and in all states the administrative home of the adult education system was the state education agency. Key differences among states include type of program (Maine and Connecticut programs were primarily school-based Local Educational Agencies, or LEAs, whereas Massachusetts has a mix of LEAs and Community-Based Organizations, or CBOs) and type of curriculum (Connecticut is a CASAS⁸ state;

⁸ Comprehensive Assessment System for Adult Students.

curriculum in Massachusetts is program-driven but influenced by state curriculum frameworks; curriculum in Maine is program-driven but influenced by the Equipped for the Future standards⁹).

The sample consisted of a total of 106 women and men from these three New England states. One hundred of these teachers participated for up to 18 hours of professional development in either the multisession workshop, mentor teacher group, or practitioner research group); the other six people were nonparticipant teachers who served as a comparison group.¹⁰ From the 100 participants, 18 teachers were randomly selected (six from each model) to serve as a subsample. Participants were listed as completers if they attended at least two thirds (12 of the 18 hours) of the professional development required. If they completed less than 12 hours, they were considered dropouts. Total dropouts equaled 16 out of 100.

In each state, five different professional development groups were conducted (one multisession workshop, two mentor teacher groups, two practitioner research groups), so that a total of 15 different professional development groups across three models and three states were conducted between July 1998 and June 1999.

The topic of the NCSALL professional development—learner motivation, retention, and persistence¹¹—was the same across all models and all states. Our goal was to develop high-quality professional development in three different models appropriate for adult educators. The research team designed all three professional development models, using the best methods and accepted principles of adult learning and effective professional development. Experienced teachers or professional development leaders in each state, recruited and trained by the research staff, facilitated the professional development.

⁹ Equipped for the Future (EFF) is a system reform initiative of the National Institute for Literacy, designed to provide learner content standards.

¹⁰ These were teachers who had originally registered for one of the professional development activities but then either did not show up or confirm their registration, thus constituting a very small “comparison group” for this study.

¹¹ Sometimes referred to in this report as LMRP: learner motivation, retention, and persistence. We define “learner motivation” as learners being engaged in learning while in class. “Retention” refers to learners attending class regularly and staying enrolled in the program until they reach their goals. We define “persistence” as learners seeing themselves as successful, lifelong learners, even if they “stop out” or drop out at any given point.

We collected data from participants at three points in time: (1) Wave One, before the professional development started; (2) Wave Two, immediately after the professional development finished; and (3) Wave Three, one year after the professional development finished. Of the 106 individuals for whom we collected data in Wave One, we were able to collect usable follow-up data in Wave Three from 99 individuals.¹²

Teachers in our Sample

To be eligible to participate in the NCSALL professional development, participants had to be an adult basic education teacher, adult English for speakers of other languages teacher, or adult secondary education teacher who taught at least one class or tutored at least one student. Each state recruited participants as they would for any other professional development activity. Interested teachers were not assigned to a particular model; they were free to participate in any model they wanted to attend. In most cases, because of geography, teachers participated in the model offered closest to them. We paid participating teachers a stipend, which was less than they would have been paid hourly for the same number of teaching hours but adequate for the time they spent providing us data.

General individual and program characteristics of teachers in our sample include:

RACE & GENDER:	The overwhelming majority of participants were white females.
AGE:	About two thirds of the teachers (67%) were between 41 and 60 years old.
EDUCATION:	Approximately half of the teachers had completed formal education higher than a Bachelor’s degree (either a Master’s or Doctoral degree) and less than 8% had either an Associates degree or a high school diploma or GED. More than half of the sample (53%) reported that they had not completed any <i>formal</i> coursework in adult education (undergraduate- or graduate-level courses in adult education, adult basic education, adult literacy, or English for adult speakers of other languages). Fewer than 20% of the respondents in this study had participated in more than three formal courses in the field of adult education.
ROLE:	The composition of teachers, by role, was approximately even among teachers of ABE/preGED students (lower literacy levels), ESOL students, GED students, and those who taught multiple types of students (ABE/preGED/GED). Eighty-five percent of the respondents reported that teaching was their primary role. The remaining 15% reported their primary role as administrator (9%), counselor (2%), professional developer (1%), or equal part teacher and counselor or teacher and director (3%).

¹² Out of 104 individuals who gave us such data, 13 individuals reported they had left the field sometime between Wave One and Wave Three. Of the 91 still in the field, 82 reported that they were still teaching in a program and the remaining 9 were still working in an adult education program or in an adult education-related organization but not teaching. This equals a teacher turnover rate of 21% over approximately 18 months.

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TEACHING EXPERIENCE:	Sixty-five percent reported that they had, at some point, taught in the K–12 school system, while 30% of respondents indicated that adult education was their first teaching experience. ¹³ Combining their experiences in K–12 and adult education, teachers in this study ranged from teaching less than one year to teaching for 34 years.
TEACHING STATUS:	Twenty-four percent of the sample was full time (full time being defined as working across all adult education jobs 35 hours or more a week). The average number of hours worked per week across the sample was 23.5. The average number of hours they taught was 16.5.
TEACHING SITUATION:	The majority of the teachers (80%) reported that their primary teaching situation was a classroom setting while 17% of the sample reported teaching individual students.
TEACHING CONDITIONS:	Forty-eight percent of the teachers received benefits as part of their adult education job, and 54% received paid prep time. Twenty-three percent of the sample reported receiving no paid professional development release time during the previous year; about three quarters of the sample (73%) reported that they received fewer than three days a year to participate in professional development activities.
PROGRAM SETTING:	About half of the teachers came from programs that were urban, half were based in school district settings (local education agency), and more than half came from programs with between five and twenty staff members.

No statistically significant differences among teachers participating in the three professional development models emerged in: venue of their first teaching experience (adult education or K–12); access to paid prep time; opportunities for collegiality; age; number of annual hours of paid professional development release time; access to benefits as part of their adult education job; teaching situation (ABE, GED, ESOL, etc.); or program type. The only significant differences among teachers by model were in number of hours per week working in adult education (mentor teacher group participants worked significantly fewer hours in adult education on average than did teachers in the other models) and number of years working in the field of adult education (practitioner research group participants had been working in adult education for longer periods, on average, than teachers in the other models).

Defining and Measuring Teacher Change

In order to gauge change as a result of professional development, we had to define “change.” We defined “change” as differences in thinking and acting, on and off the topic. Change “on the topic” included increased knowledge about the topic (learner persistence) and reported action taken to address learner persistence in the classroom, in the program, or in the field. Change “off the topic” included increased awareness of the

¹³ We assume that the other 5% of the sample gained initial teaching experience outside these two arenas (e.g., church, overseas programs).

adult education field, increased confidence in teaching, decreased feelings of isolation, or use of a new teaching technique. In order to differentiate levels of change and to acknowledge that change, in itself, may not always be change for the better, we defined the “preferred direction” of change as: thinking integrated with acting in multiple arenas (in one’s own learning, in the classroom, in the program, and/or in the field).

To gauge such changes, we developed a set of outcomes (differences in thinking and acting) on and off the topic that we expected to see in teachers as a result of participating in these three models of professional development. In other words, any of these outcomes, based on the objectives and design of the professional development, would “count” as change,¹⁴ as presented in Table 1 below:

Table 1: Outcomes that “Counted” as Change

	CHANGES ON THE TOPIC	CHANGES OFF THE TOPIC
THINKING CHANGES	Learning about the topic and learning strategies for addressing learner motivation, retention, and persistence (LMRP)	<ul style="list-style-type: none"> • Gaining general teaching knowledge • Learning strategies (tools) for research • Expressing importance of collegiality in program or in field • Becoming more aware of and/or critically analyzing the weaknesses or strengths of: <ul style="list-style-type: none"> • The community within which they or learners live • Their program • The field of adult basic education • How they best learn
ACTING CHANGES	Taking action to: <ul style="list-style-type: none"> • Find out about forces affecting the motivation and persistence of the learners with whom they worked • Address LMRP in the classroom • Address LMRP in the program • Address LMRP in the field 	Making a general change, without intention to affect LMRP: <ul style="list-style-type: none"> • In class, using a new teaching technique • In the program, initiating a policy change • In the field of adult education, contribution to field or community

¹⁴ By looking at the range of outcomes emerging from preliminary analysis of the second wave of data, we confirmed and organized the set of outcomes shown here.

Data Collection

Our goal was to collect data that would help us see the change (differences in thinking and acting) for each participant, on and off the topic, in their roles as learners, teachers, program members, and members of the field, as a result of their participation in the professional development. To do this, we needed to collect a range of data related to their thinking and acting, both before and after they participated in the professional development. We collected data through questionnaires from the whole sample (106) and through questionnaires and interviews from the subsample (18 teachers from across the three models and three states).

All data are self-reports from the teachers; however, we didn't just ask: "did you take any action?" We asked for specific examples of action they had taken (before and after participating in the professional development) related and unrelated to the topic, what exactly they did, why they did it, for how long, and what the outcome of their action was. To measure whether they changed their thinking on the topic we asked them to state specific strategies that could be used to address the issue of learner motivation, and specific concepts related to the topic that they remembered from the professional development. To see if, over the course of the professional development, they changed the way they thought they learned best, we asked them (in each wave) to tell us how they best learn to improve their teaching and why. Although self-reports in no way substitute for multiple and repeated observations and documentation of teachers' behavior change (which would have been beyond the resource scope of our study, given the sample size), we feel we were able to gauge changes in thinking and acting by looking at the details of their self-reports over time (before, after, and one year after taking part in the professional development).

We collected data to gauge change by asking about:

- **Their thinking and acting on the topic.** What helps or hinders learners to persist, what strategies are effective for increasing persistence, what is the main concept on the topic you got out of the professional development, what have you done to address learner persistence (with individual learners, in the class, in the program, in the field)?
- **Thinking and action off the topic.** Besides the topic, what is the main concept you walked away with and what did you do with this?

For the whole sample, then, we had two measures of change (our dependent variables):

1. Overall amount of change (thinking and acting on and off the topic)
2. Type of change (thinking and acting on the topic of learner persistence)

To collect data about factors influencing teacher change as a result of professional development, we created a set of hypotheses from the literature and built questions into both the questionnaire and interviews to collect data about these factors for each teacher. We collected data for three categories of factors: (1) individual factors, (2) professional development factors, and (3) program and system factors, including working conditions of teachers. We conducted class observations and interviews with the program director, but only for the purpose of understanding the teacher's teaching situation and program context, rather than to collect data about teacher performance.

In addition to the data collected from participants, we audiotaped each of the 15 different professional development group sessions, with a note taker in attendance; we also kept attendance records, audiotaped conversations between facilitators and note takers after each session was over, and took notes during a reunion of facilitators several months after the professional development concluded. Using this data, the research team developed a rating of group quality based on the quality of the group dynamics, quality of facilitation, and the integrity of the model (the extent to which the professional development was conducted as designed).

Data Analysis Strategy

We analyzed the data from the whole sample quantitatively, and the additional data collected from the subsample was analyzed qualitatively. The analysis plan called for using the data from the whole sample (quantitative) and the data from the subsample (qualitative) iteratively to understand the types and amount of change among participants. For example, after Wave Two, we began analyzing the data qualitatively, looking for patterns and types of change. This informed our quantitative coding scheme. Once all data had been collected, we analyzed the quantitative data, and then used the results of the quantitative data to test against the qualitative data for important factors that emerged in both types of data.

Limitations

Two (sometimes competing) priorities influenced the design of this study: one, the need for a rigorous and high-quality research design, and, two, the need for the professional development we offered to be as realistic as possible. In order for the findings to be valid, we felt that the professional development should be offered through the existing professional development systems in our test states so that findings would be most relevant to the actual contexts in which adult education professional development is offered. In most cases, the "research" and "reality" priorities did not conflict; however, there were instances when decisions made to uphold research or data collection rigor may have affected the quality of the professional development, or when decisions made in order to offer the most realistic professional development may have affected the research design.

Other limitations of this study include: small sample size, which limits the generalizability of quantitative results; the fact that all research was conducted in New England; not all participants had the choice, because of geography, to participate in a particular professional development model; tape recording and observation of professional development sessions may have influenced the level of openness in responses; and our views may have biased us toward designing professional development activities and interpreting findings that are consistent with a learner-centered approach to education.

FINDINGS

Participation in the Professional Development Activities

The hours of participation among the sample of 100 participants ranged from 2.5 to 18. The average number of hours that teachers participated in the professional development activities was 15 and that was consistent across the three states. However, teachers in the practitioner research group model participated fewer hours on average than teachers in either the workshops or the mentor teacher groups. Statistical tests indicate that the differences in number of hours attended across the professional development models were statistically significant (ANOVA, $F=3.4$, $p<.05$).

Sixteen out of the original 100 participants left the NCSALL professional development before completing two thirds (12) of the required hours. Of the 11 dropouts who provided a reason for dropping out: Five indicated “lack of time, other commitments” as the primary reason; three reported health problems; two indicated a change of job; and one reported not liking the professional development.

Our quantitative data suggest other possible explanations for why teachers dropped out:

- *Type of model.* Chi-square tests show a significant difference among the three models in dropouts ($\chi^2=14.2$, $df=2$, $p<.001$, $n=100$): Twelve out of 37 (38%) participants dropped out of practitioner research groups; 4 out of 28 (14%) dropped out of mentor teacher groups; and 0 out of 35 dropped out of the multisession workshops. Dropouts were evenly distributed across the states, with no significant differences.
- *Hours of paid professional development release time* a teacher received annually was positively correlated with number of hours attending ($r=.299$, $p<.01$, $n=100$).

- *The rated quality of the professional development groups (as rated by the researchers) was significantly related to hours attended ($r=.345$, $p<.001$, $n=100$), but not to perceived quality (how the teachers rated the professional development after they had participated in it). In other words, if the professional development was of low quality (according to our rating), teachers attended for fewer hours, but the number of hours they attended was not related to teachers' perception of its quality, as reported afterward.*
- *Teachers who worked part time were more likely to drop out than teachers who worked full time ($\chi^2=6.8$, $df=2$, $p<.05$, $n=97$).*
- *How much of a priority the teacher assigned to this particular topic (LMRP), compared to other topics on which she or he could seek professional development, was negatively correlated ($r=-.21$, $p<.05$, $n=100$). The less of a priority the teacher rated the topic, the more hours the teacher attended the NCSALL professional development; we can't explain why that would be significant.*

In addition, our qualitative data offers possible reasons for the higher number of dropouts from the practitioner research groups:

Recruitment information. Recruitment was the same for all three models. We did not advertise the practitioner research groups differently from the way we advertised the workshops or mentor teacher groups. However, we now feel that teachers should have been given a better description and clearer expectations beforehand about the type and amount of work involved in practitioner research.

Teachers' developmental level. Practitioner research may also interact with a teacher's particular learning style or developmental level, perhaps negatively. Further research should investigate how teachers at different developmental levels (different ways of knowing) respond to various types of professional development that call on them to play roles beyond that of just listening to or being exposed to new teaching techniques.

Quality of the group. There may be a reciprocal relationship between dropouts and quality.

How Teachers Changed

We measured amount and type of change in thinking and acting on and off the topic. We looked at change in four roles: as a learner, as a teacher, as a program member, and as a member of the field. We judged change within the context of what the professional development covered and recommended for knowledge and action, specifically:

- Teachers' *thinking changes* (on and off the topic of learner motivation, retention, and persistence), including learning about the topic of LMRP and strategies for addressing LMRP; gaining general teaching knowledge; learning strategies for research; expressing importance of collegiality in program or in field; becoming more aware of and/or critically analyzing weaknesses or strengths of communities, programs, field of adult basic education; or how they best learn.
- Teachers' *acting changes* (on and off the topic), including taking action to find out about forces affecting the persistence of learners; addressing LMRP in the classroom, program, or field; or making a general teaching change such as using a new teaching technique, initiating a program policy change, or taking action in the community or field.

How Much Did Teachers Change?

When coding teachers' open-ended answers on the questionnaires, we assigned scores for amount of change for each teacher, according to the different outcomes (thinking and acting, on and off the topic). This gave us an overall amount of change¹⁵ for each teacher, plus some indication of whether change occurred mostly in thinking or in acting, on or off the topic. Overall, we found that:

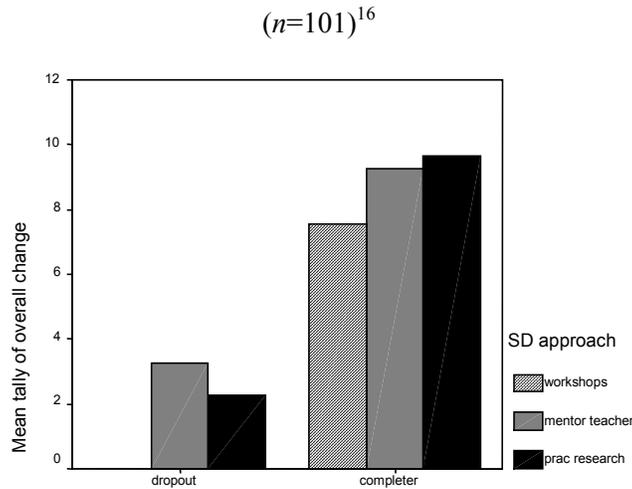
- Most teachers, even dropouts, changed at least minimally through gains in knowledge or actions in their classrooms; relatively few experienced no change at all.
- Almost all (90% of the whole sample, 95% of completers) gained some knowledge on the topic, but for many the gain consisted of only one or two concepts.
- The majority (78% of the whole sample, 87% of completers) took some action, on or off the topic, but for many it was very minimal.

Among the whole sample (completers, dropouts, and comparison group), the amount of overall change was a mean of 7.5, on the lower end of the 51-point scale. Only 8 out of the 101 in the whole sample and only 2 of the 83 completers demonstrated no change at all, either on or off the topic.

¹⁵ Total possible change score was 51. For overall amount of change, scores ranged from 0-30 out of a possible 51. The total possible score for thinking changes was 30, for acting changes it was 21; total possible score for change on topic was 15, and for change off topic it was 36. In order to score the maximum, a participant would have had to demonstrate significant change in thinking and acting both on and off the topic.

Figure 1 below shows amount of overall change by professional development model in the dropout and completer groups.

Figure 1: Amount of Change by Professional Development Model



Dropouts, overall, made significantly less change than did completers. Mentor teacher group dropouts ($n=4$) demonstrated more change than practitioner research group dropouts ($n=12$) but these numbers are too small to test for any statistical differences among the groups. The difference in amount of change by model of professional development among completers was not statistically significant.

Changes in Thinking

Only 10 (9.9%) out of the 101 completers, dropouts, and comparison group for whom we have complete data demonstrated no change in thinking, either on or off the topic. Among the 83 completers for whom we have data, only 4 (4.8%) demonstrated no change in thinking.

Table 3 provides information about the percentage demonstrating changes in thinking on topic (one measure) and off topic (eight measures).

¹⁶ This number includes completers, dropouts, and comparison group members for whom we have complete data. There was a teacher who attended all workshops but provided us with no data, so we dropped him completely from the sample; therefore, no dropouts from the workshop model appear.

Table 3: Changes in Thinking, On and Off the Topic

(n=101, *indicates missing data for one respondent)

	ON/OFF TOPIC	PERCENT CHANGED	DEMONSTRATED CHANGE	NO CHANGE	TOO VAGUE TO JUDGE ¹⁷
Learned about the topic	On	82%	83	14	4
Increased general teaching knowledge*	Off	38%	38	54	1
Increased awareness of:	Off				
• the field of adult education		44%	44	53	4
• how best they learn to teach		34%	34	57	10
• program strengths and/or weaknesses		25%	25	76	0
• own or learners' community		5%	5	95	1
Expressed importance of:	Off				
• field collegiality		49%	49	51	1
• program collegiality		24%	24	77	0
Learned research tools and strategies	Off	18%	18	81	2

Table 3 above shows that, not surprisingly, the most common change involved learning on the topic; most teachers in the study gained some knowledge about learner motivation, retention, and persistence. Eleven of these 83 gained significant knowledge, and 20 gained moderate knowledge; the remaining 52 demonstrated minimal knowledge gain.

Interestingly, the next two highest areas of thinking change (after changes in thinking about the topic) relate to the field of adult basic education: the importance of collegiality in the field and an increased awareness of the field. These are changes that would be expected to occur when teachers have time to share experiences during discussions that are part of the professional development activity. It is an indication that teachers experience changes in thinking about issues unrelated to the topic of the professional development itself.

Thirty-four teachers demonstrated changes in how they feel they best learn to improve their practice. Most of these changes were minimal, and a larger proportion of mentor teacher group participants (14 out of 25) and practitioner research group participants (11 out of 27), as compared to workshop participants (9 out of 33) changed how they feel they learn best, but differences among models were not statistically

¹⁷ These were cases where the information provided by the respondent was too confusing and insubstantial to merit a clear judgment about whether a change in thinking in this area had occurred.

significant ($\chi^2=8.95$, $df=6$, $p>.05$, $n=85$). Typically, mentor teacher group participants talked about the benefits of being observed, while practitioner research group participants talked about the value of conducting and reading research.

Changes in Acting

The professional development encouraged teachers first to ask learners about the forces supporting and hindering their persistence, and then to take action in their classroom, program, or in the field based on what learners told them. We collected information from teachers to help us gauge how much and what type of action they took. We also collected information about actions teachers may have taken not related to the topic of the professional development (learner persistence), such as trying out a new teaching technique or initiating change in the program unrelated to learner persistence.

Of the sample for which we have data on this question ($n=101$), 78% took some action on or off the topic. Out of the group who completed the professional development ($n=83$), 87% took action.

Table 4 below provides information about the percentage of teachers that demonstrated changes in acting on topic (four measures) and off topic (three measures).

Table 4: Change in Acting, On and Off the Topic

($n=101$, *indicates missing data for one or more respondents)

	ON/ OFF TOPIC	PERCENT CHANGED	<i>DEMONSTRATED CHANGE</i>	<i>NO CHANGE</i>	<i>TOO VAGUE TO JUDGE</i>
Took action to: <ul style="list-style-type: none"> • find out forces related to LMRP with learners* • address LMRP in class* • address LMRP in program • address LMRP in field 	On	42%	42	55	3
Took general action in: <ul style="list-style-type: none"> • class, teaching technique* • program, initiate policy change* • field, contribution to field or community* 	Off	26%	24	67	2
		7%	7	90	1
		7%	7	87	1

The table shows that the three top actions were related to taking action on the topic, but that, in general, fewer teachers took action than made changes in their thinking

(see Table 3): while 83 demonstrated increased knowledge on the topic, only 57 took any action and 34 of these were coded as having taken “minimal” action, usually making one or two changes in their classroom that were not sustained over time.

Most (18) of the 24 teachers who made a general change in practice in the classroom made a minimal change, and this was usually the addition of a new technique or activity learned during the professional development that they used to teach other content in their class. The 24 teachers who made a change in their general teaching practice were almost evenly spread across models, but the 2 teachers who made significant change in this area were practitioner research group participants.

Action taken within the program off the topic usually involved an effort by the teacher to initiate more opportunities for collegiality in the program, through teacher-sharing meetings. We did not see much reported change in the type or amount of interactions with colleagues within the program as a result of this professional development, although some practitioners in the sample did talk about how they shared the information from the professional development with colleagues during their regular interactions.

Action taken within the field on the topic usually entailed providing professional development in other programs or at a conference about the changes the teacher or his or her program had made to address learner persistence, or action within the local community to support the needs of learners (such as seeking funding support for new facilities). Action taken within the field off the topic, for the few teachers who undertook such action, was usually related to seeking more contact with colleagues or providing professional development for other teachers on a topic other than learner persistence. Regardless of whether the actions taken by teachers were on or off the topic of learner persistence, the teachers who reported them attributed their actions to their participation in the professional development.

In What Roles Did Teachers Change?

For each respondent, two researchers independently made a judgment about the primary arena of change (as a learner, as a teacher, as a program member, or as a member of the field), based on the arena of thinking and action where most change occurred. In some cases, the change seemed equally distributed between two of these arenas, usually as a teacher and a program member. The data indicate that:

Changes were most often seen in teachers' roles as classroom teachers (53%), rather than their roles as learners (7%), program members (20%), or members of the field (1%).

In What Ways Did Teachers Change?

Using the categories developed by looking at patterns in the qualitative data, which identified four types of change, and then coding the whole sample, we found that the percentage of *completing* teachers ($n=83$) in each type of change was:

1. Integrated Change: 24%
2. Acting Change: 13%
3. Thinking Change: 35%
4. No or Minimal Change: 28%

The characteristics that emerged for these four types of change are presented in Table 5:

Table 5: Characteristics of Types of Change

TYPE OF CHANGE	CHARACTERISTICS
Integrated	<ul style="list-style-type: none"> • Demonstrated thinking <i>and</i> acting changes, which were balanced and integrated: actions tied to new thinking, expressed theories and critical reflection related to topic and to existing theories. • Made changes: <ul style="list-style-type: none"> - that were not haphazard or random: thoughts and actions linked and integrated into teachers' understanding of the topic and theories of good teaching and student success. - that were sustained over time. - on one of two levels: (1) minimal-to-moderate integrated and (2) significant integrated. - that were limited overall and that usually occurred in one arena (i.e., as a teacher), if they showed minimal-to-moderate change. - that were "transformational": significant overall and occurred in multiple arenas (i.e., as a learner, teacher, program member), if they showed significant integrated change. • Most often used an inquiry approach¹⁸ and achieved all three objectives of the professional development.¹⁹
Acting	<ul style="list-style-type: none"> • Demonstrated change (at least minimally) in thinking and acting, but acting changes outweighed thinking changes. • Scored minimally in a few thinking categories but scored minimally or moderately across more acting categories. • Took actions that didn't have significant link to thinking change: limited rationale for action, actions not tied to thinking on topic or theories of teaching. • Took actions (trying new techniques or implementing different strategies) that appeared random in nature, and did not appear to lead in any particular direction (either to a next step or another insight). • Took actions that were typically not sustained over longer periods of time.
Thinking	<ul style="list-style-type: none"> • Demonstrated change (at least minimally) in thinking and acting, but thinking changes outweighed acting changes. • Scored minimally or not at all in acting categories but scored minimally or moderately across more thinking categories. • Took actions not linked significantly with changes in thinking; any actions small or short-lived. • May have demonstrated a clear idea about an inquiry approach to addressing the topic but took little or no action either to find out about forces affecting their own learners or to choose a strategy for addressing the problem.
No or minimal	<ul style="list-style-type: none"> • Demonstrated little change in thinking or action. • Scored minimally in a very few categories (on or off the topic). • Showed little breadth or depth of thinking or acting change over time: gained a concept or two, tried out an activity when directed to as part of the professional development, but little indication that any of three objectives of the professional development achieved. • Showed no connection between even minimal thinking and acting changes; any changes not sustained.

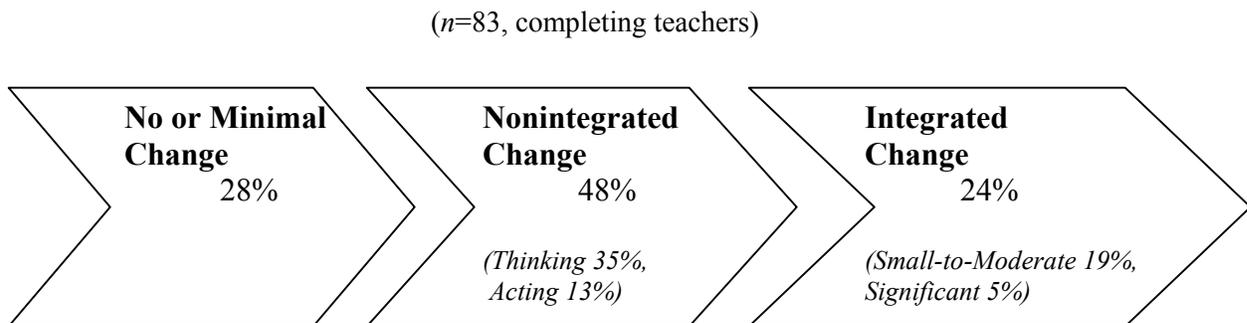
¹⁸ Inquiry approach/cycle: (a) learn about topic and strategies for addressing the problem, and (b) gather information from learners about the specific supports and barriers to persistence experienced in the learners' classrooms; (c) think about the implications of this information for choosing a specific strategy for addressing the problem; (d) take action (implement strategy); (e) think about how the strategy worked and repeat the inquiry cycle.

¹⁹ (1) Increase knowledge of the topic (learner motivation, retention, and persistence); (2) critically reflect on their learning and make plans for taking action; and (3) take action to increase learner persistence.

The ordering of the four types of change described above represents the direction of “preferred change”:²⁰ from “no or minimal change” at one end of the spectrum to “significant integrated” change at the other. However, we made no qualitative distinction between “thinking change” and “acting change”; both are preferable to “no change,” but less preferable than “integrated change.” There is a natural dividing line between the types, based on the key factor of whether or not demonstrated changes in thinking and acting were integrated: that participants—regardless of the amount of change—reached all three objectives of the professional development in an integrated way and/or used the inquiry process/cycle.

Therefore, we combined these four types of change into a three-category spectrum of change: (1) no change, (2) nonintegrated change, and (3) integrated change. This allowed us to use larger cell sizes for further quantitative data analysis to test hypotheses about factors influencing type of change. This spectrum of change, including the percentage of *completing* teachers in the sample who demonstrated change in each type, is presented in Figure 2 below:

Figure 2: Spectrum of Change by Type (Among Completers)



The majority (72%) of the 83 completers demonstrated change, most of which was nonintegrated (thinking or acting) change. Teachers who fell into the “integrated change” type also demonstrated a higher overall amount of change. Those who demonstrated integrated change also demonstrated change in more arenas (classroom, program, and field), more sustained change, and change off the topic.

Participation in the professional development was a factor in type of change. Most of the dropouts and comparison group members demonstrated “no change.” Two of the 18 dropout/comparison group members for whom we have data demonstrated what could be called “integrated” change, and three demonstrated nonintegrated change. This

²⁰ “Preferred change” is defined as thinking integrated with acting in multiple arenas (in one’s own learning, in the classroom, in the program, and/or in the field).

may be a result of their participation in other professional development; the numbers are too small, however, to make any judgment about contributing factors.

The evidence indicates that, with only 24% demonstrating integrated change, it was difficult for teachers to integrate thinking and acting change. Those teachers who did demonstrate integrated change also changed more overall, even in thinking and acting not related to the topic of the professional development.

Regardless of type of change, many teachers also made changes in thinking and acting off the topic of learner persistence, such as improved self-confidence as a teacher, increased appreciation of the importance of collegiality, greater awareness of the field and of program and system strength and weaknesses, and increased understanding of research.

Overall, far fewer teachers changed in ways that we would have preferred, even when they attended up to 18 hours of professional development, but almost all at least gained some knowledge on the topic. It is possible that teachers who took limited action may eventually put their new knowledge into play months or years later, perhaps after attending future professional development that triggers some motivation to act. However, it is also possible that teachers who changed little encountered some combination of individual, program, and system factors that prevented them from changing more.

Factors Influencing Teachers' Change

The data from our study indicate that multiple factors interact to influence teacher change as a result of participating in professional development. Across our sample, change was either supported or hindered by the extent to which these factors applied; for any individual teacher, a combination of individual, professional development, program, and system factors interacted to influence the amount and type of change undergone.

We characterized factors as important when sufficient evidence was present in both the whole sample (quantitative) data and the subsample (qualitative) data to support their connection to either amount or type of change, or when the evidence for the factor was particularly strong in either the quantitative or qualitative data. Table 6 (see p. 22) outlines all the factors we examined in this study by their *level of importance*. **Most important** factors are those for which we have strong evidence, either through statistical significance found in that variable in the whole sample (quantitative data) or through clear, consistent findings in the subsample (qualitative data). Factors that are **somewhat important** are those for which there are trends but no strong statistical confirmation in the whole sample or those for which there are emerging but not conclusive trends in the subsample. **Not important** factors are those for which there is no statistically significant relationship with change and no clear trend in the qualitative data.

Table 6: Factors that Influence Teacher Change, by Level of Importance

FACTOR TYPE	MOST IMPORTANT	SOMEWHAT IMPORTANT	NOT IMPORTANT
Individual (out of 12 factors)	<ul style="list-style-type: none"> • Motivation to attend the professional development • Years of experience in adult education • Venue of first teaching experience • Level of formal education 	<ul style="list-style-type: none"> • Level of commitment to working in adult education 	<ul style="list-style-type: none"> • Level of professional development consumption • Belief in purpose of literacy instruction • Type of teaching (ABE, ESOL, GED) • Teaching situation (one-on-one, small class, large class) • Teaching experience in K–12 • Age • Belief that knowledge about the learner is important
Professional Development (out of 5 factors)	<ul style="list-style-type: none"> • Hours of NCSALL PD attended • Rated quality of PD (as rated by researchers) • Perceived quality of PD (as rated by teachers) 	<ul style="list-style-type: none"> • Type (model) of professional development • “Coparticipation” in professional development (with teachers from the same program) 	
Program or System (out of 14 factors)	<ul style="list-style-type: none"> • Access to prep time • Program situation²¹ • Access to benefits 	<ul style="list-style-type: none"> • No required curriculum • Number of working hours • Amount of paid professional development release time • Opportunities for collegiality among teachers 	<ul style="list-style-type: none"> • Student enrollment policy • State in which participant worked • Access to resources • Program working on the same issue • Teachers’ perception of leadership in the program • Perceived freedom to decide what and how to teach • Program type

²¹ “Program situation” refers here specifically to how much programs were already addressing problems of learners’ persistence *and* how much voice teachers had in decision making in their program.

In other words, teachers who gained the most from the NCSALL professional development were those who:

- Had a strong motivation to learn about the topic or about theories of good teaching and wanted to integrate new learning with their actions.
- Began their teaching in the field of adult education, had fewer years of experience in the field, and did not have a post-graduate degree.
- Participated in high-quality professional development (as rated by the researchers), for more hours, and perceived it to be of high quality.
- Worked in programs where they had a voice in decision-making *and* where strategies suggested in the professional development had not yet been implemented.
- Received benefits as part of their adult education jobs and had access to prep time.

To a lesser extent, teachers tended toward more change when they were not required to use a particular curriculum, worked more hours in adult education, had more paid professional development release time, expressed a weaker level of commitment to staying in the field of adult education, participated in professional development groups where all participants were from the same program, and had access to opportunities to share ideas with colleagues during and after participating in the professional development. Model of professional development was not one of the most important factors, although there were different patterns of change related to model.

The most important and somewhat important individual, professional development, and program or system factors investigated in our study are presented below. Since we already know that the level of participation in the professional development activities is significant (the more a teacher participated, the more she or he was likely to demonstrate change), the findings presented here are for the completers only.

How much did individual factors matter?

We found that the *most important individual* factors influencing change among the teachers in our sample included:

- **Motivation to attend the professional development.** Teachers with a strong need to learn, either on the topic or about good teaching and student success, changed more.
- **Years of experience in adult education.** Teachers with fewer years of experience changed more.

- **Venue of first teaching experience.** Teachers who began their teaching career in adult education (not K–12) changed more.
- **Level of education.** Teachers with a bachelor’s degree *or less* changed more.

One individual factor emerged as *somewhat important* in influencing teacher change: Level of commitment to working in adult education: Those teachers with a weaker level of commitment to the field changed more.

How Much Did Type, Amount, and Quality of Professional Development Matter?

We found that the *most important professional development* factors that influenced change among the teachers in our sample included:

- **Hours of NCSALL professional development attended.** Teachers who participated for more hours demonstrated more change.
- **Rated quality of professional development groups (as rated by researchers).** Teachers who participated in professional development groups of higher quality demonstrated more change. (Higher quality groups had good facilitation, good group dynamics, and good integrity to the model (facilitators made small adaptations based on the needs of the group).)
- **Perceived quality of professional development (as rated by teachers).** Teachers who gave the professional development activity a higher rating demonstrated more change.

Professional development factors that were *somewhat important* to type or amount of change included:

- **Type (model) of professional development.** The model of professional development was not significantly related to type of change. We did, however, identify different patterns of change among the models, and a larger sample size might have produced significant differences.
- **Being in professional development with others from the same program (“coparticipation”).** Coparticipation, coupled with more opportunities for teachers to share ideas between and after professional development sessions, may support change. More research on this topic is recommended.

How Much Did Program or System Factors Matter?

We found that the *most important program and system* factors that influenced change among the teachers in our sample included:

- **Access to prep time.** Those who received prep time were more likely to change.
- **Program situation.** Teachers who worked in programs that were not already taking action to address learner persistence *and* where teachers had a voice in decision-making were more likely to change.
- **Access to benefits.** Teachers who received one or more benefits from their adult education job (health or dental insurance, vacation, etc.) were more likely to change.

Of lesser importance, but still contributing to change, were factors such as fewer restrictions on curriculum design required of teachers, more working hours in adult education per week, more hours of paid professional development release time, and more opportunities for collegiality in one's program.

Other Factors That May Influence Change

While it was not surprising that the teachers who attended because they had a strong need to learn (either about the topic of the professional development or about teaching in general) changed more, we see this result as a reminder that not all teachers attend professional development with a strong desire to learn about the topic the professional development covers. This is where Joyce's (1983) concept of categories of teachers as learners and consumers of professional development (omnivores, active consumers, passive consumers, entrenched, and withdrawn teachers) is supported by our findings, although we would prefer to simplify it to two categories: "settled" teachers and "hungry" teachers.²² Our research leads us to propose a hypothesis (rather than a finding) about the teachers' dispositions as learners: motivation to attend was a factor in what appeared to be an overall portrait of teachers who were either "settled" or "hungry" to learn. Among our sample, teachers who were more satisfied with their teaching or who had no strong need coming into the professional development (perhaps attending at the request of their director), and did not regard learner persistence as a problem that they either could or wanted to solve, appeared "settled." Those teachers who had a strong need to address the problem of learner persistence or a need to develop their theories of teaching and student success fit the portrait of "hungry" teachers: they wanted to learn new techniques, new theories, or new ways to address learners' problems in their classrooms and programs. Our impression is that settled teachers were more likely to demonstrate minimal or no change and hungry teachers were more likely to demonstrate integrated change. As noted above, we offer this concept not as a conclusion of our research but as an emerging hypothesis about an individual teacher disposition that might

²² Because we did not collect data that would allow us to type teachers either according to Joyce's categories (as far as we know, Joyce did not develop a data-collection protocol for these categories) or as "settled" or "hungry," we do not present this as a formal factor, but rather as a concept for further research.

play a role in teacher change. Further research might use this construct of “settled” and “hungry” as a way to characterize teachers’ dispositions toward learning and develop data-collection protocols for explicitly researching its role in teacher change.

It appeared that being new to the field, teaching for the first time in this field, and having less formal education made teachers seek techniques or theories about learner persistence, good teaching, or student success. In our study, teachers who had more years of experience in the field of adult education, who began their teaching in K–12, and who had advanced degrees were more likely to seem satisfied with their practice and to demonstrate a stronger commitment to the field. This finding mirrors recent research by Livneh and Livneh (1999) among K–12 school teachers. They found that participation in professional development was predicted by (1) high internal motivation to learn, (2) high external motivation to learn (wanted career advancement or to network with others), and (3) lower levels of formal education.

We also discovered that some teachers who identified an “off the topic” need during the course of the professional development subsequently developed a motivation to change related to that need. These teachers were dissatisfied with some aspect of their program or working situation (isolation, difficulty with program administration, etc.). Through some aspect of the professional development (typically, sharing with colleagues), these teachers recognized this need, developed their thinking about collegiality or program strengths and weaknesses, and then took action to address the problem. Although such action did not address directly learners’ needs or persistence, it was action based on a need they had identified and as such denotes change for those teachers.

Discussion of Findings

We conclude that teachers’ pathways to change were neither simple nor linear; change was complex and shaped by interaction among who they were as individuals, the quality and amount of professional development in which they participated, and the features of the programs and systems in which they work. Adult education teachers work within a particular ecosystem of funding, structure, and policies, and these factors intertwine with individual factors and with the professional development in which they participate. While we, in this research project, have endeavored to isolate the most important factors in order to propose recommendations for action that states, programs, and professional developers can take to increase the effectiveness of professional development, the reality is that the likelihood of any individual teacher to change is determined by a unique interaction of these factors.

The complex interaction between individual, professional development, program and system factors that influenced how and in what ways teachers changed is demonstrated best through two examples: one of a teacher (Penny) who made little change, and one of a teacher (Meg) who made significant change.

Penny's lack of change was influenced by the strong individual factors (lack of motivation to learn about the topic or, for that matter, about anything related to her teaching, and a greater amount of formal education), professional development factors (a dislike of the professional development facilitator, mentor teacher group model, and group in which she participated), and program and system factors (part-time status, a requirement to use a particular curriculum, program structure that emphasized individualized instruction for GED test prep). The interaction of these factors contributed to no real change: her lack of motivation to learn, based on her experience and her satisfaction with the personal teaching style she had developed, interacted with what she considered poor-quality professional development and led her to reject both the topic and any suggestions the professional development had to offer. Also, since the program's goal was to prepare as many students as possible to pass the GED test, it had adopted a policy of cycling students through workbooks individually. As such, Penny was not encouraged to care about students who dropped out; both she and her program took the stance that students who didn't persist were not ready to study for the GED, and so they were not concerned about them—other, more motivated students would readily take their place. Penny already felt that their program served students as well as it could, and being only a six-hour-a-week employee with no prep time, she was neither motivated nor supported to try new strategies for improving students' motivation, retention, and persistence. In sum, almost all factors—individual, professional development, and program/system—interacted to contribute to her lack of change.

On the other hand, Meg, who also participated in a mentor teacher group, had multiple factors that supported change. She had a strong motivation to learn, as a teacher who started teaching in adult education/family literacy without a master's degree. She loved the mentor teacher group in which she participated, partially because it was high quality and partially because all of the other participants were teachers in her program. Her program had not addressed learner persistence as an issue but was relatively open to input from both teachers and students; her director was approachable to discuss problems. Meg worked as a full-time teacher with benefits and prep time, so she had the time to seek collegial support to take action in the classroom and program. What she initially learned in the professional development, which both she and the researchers rated as high quality, fueled by her motivation to know more about teaching and serving students, led her to make changes in her classroom in both curriculum and class structure. The fact that other teachers in her program were also participants in the professional development led them together to seek changes at the program level. With a responsive program director, Meg could also encourage her students to suggest changes at the program level. Discussions with the teachers in her program also motivated Meg to talk to teachers

outside of her program about working conditions that she sensed influenced teachers' persistence. These multiple factors interacted to support transformational change in both her thinking on and off the topic and her actions at all levels.

CONCLUSIONS AND RECOMMENDATIONS

For the teachers in our study, change did not occur in a vacuum. How—and how much—a teacher changed was influenced by a complex interaction of factors: who teachers were coming into the professional development, the professional development itself, and the program and system in which teachers worked. While most teachers who participated in the professional development made some change, change was limited among teachers who felt less of a need to learn, who attended professional development that was not of high quality, and/or who worked in programs and situations where they were not supported to change. (Those who dropped out made very little change on average.)

Slightly more than one third of the teachers who completed the professional development changed their thinking as a result, but this did not always translate into changes in practice in the classroom and program. This lack of concrete action was due partly to individual motivation and partly to working conditions and program factors that hindered teachers from taking action. However, about one quarter of those teachers who completed the professional development made significant change across multiple roles, and this professional development had a strong effect on them and their practice: in particular, these were teachers who had less experience in the field and less formal education, had a strong motivation to learn more about the topic or about theories of teaching and student success, participated in high-quality professional development groups, and had access to working conditions that supported change (prep time, benefits, opportunities for sharing with colleagues, a voice in decision-making in the program).

While the small sample size and design of the study limit the generalizability of these findings to *all* adult education teachers, the implications of these findings are applicable to the teachers, programs, and states that participated in the study. Professional development decision-makers in other states must decide for themselves whether these implications apply to their own population of teachers, based on the extent to which their teachers and programs resemble those that participated in our study.

The fact that 28% of the 83 teachers who completed the professional development demonstrated little or no change (and 16% of the original 100 teachers dropped out and also demonstrated little change) should be of interest to our field. Eighteen hours of professional development is longer in duration than most development opportunities to

which adult education teachers typically have access.²³ When even 18 hours of professional development does not lead to significant change—as was the case for about one third of our sample—we need to consider the implications for the field. We need to ensure that teachers are willing, able, and supported to participate in professional development and use it as a springboard to better practice since, arguably, teachers are the most critical factor in student success. We propose the following recommendations, based on the findings from our study, for policymakers in programs and states, for professional developers, and for teachers themselves to better support teachers so that they are able to make the most of professional development and contribute to the positive differences we seek in students' lives.

Recommendations for Program Directors and States

Improve teachers' working conditions, including access to decision-making in the program. Programs and systems had a big effect on the teachers in our study. Teachers' access to benefits and paid prep time seemed to be the most critical. To a lesser extent, the level of change was influenced by access to paid professional development release time, more working hours, ongoing discussions and teacher sharing with colleagues during and after participating in professional development, and decision-making in the program. The presence of these factors in teachers' jobs made it easier for teachers to learn more and do more as a result of participating in professional development. However, many teachers in our study lacked access to such conditions. Programs and states should consider the costs and benefits of providing such types of support to teachers in their states, not only to enhance the effectiveness of the professional development they offer but also to decrease teacher turnover within the field.

Pay teachers to attend professional development. Attending more hours of professional development contributed to an increased amount of change. The stipend we gave participants may have played a role in their continued participation: although some participants undoubtedly dropped out because they considered the quality of the professional development to be low, and others dropped out because of illness or new jobs, others said they left because they did not have the time to continue.²⁴ Eighteen hours of professional development is quite an investment for some state adult education systems, especially for those managed by planners who feel they only have the resources to offer an annual one-day conference. It is also quite an investment of time and effort for teachers who may teach only six hours per week. However, if adult education

²³ Almost one quarter of our sample reported receiving no hours of paid professional development release time in the year prior to our study.

²⁴ Although there was no direct and significant relationship between amount of annual paid professional development time and change, there was a positive relationship between paid professional development release time and hours of attendance in the NCSALL professional development, which in turn was related to change, suggesting at least an indirect link between supported time and change.

teachers receive payment for the hours they attend professional development as well as the hours they teach, they may attend for longer periods, leading to higher returns from investments in professional development.

Increase access to colleagues and directors during and after professional development. Teachers felt better supported to make change when they participated with colleagues from their program and also had opportunities to discuss what they learned with others following professional development sessions. Programs should find mechanisms, as part of professional development and as part of teachers' paid jobs, for teachers to share ideas about teaching. Particularly for teachers who feel isolated, program-based professional development may be a model that deserves more thought and more research. As long as the professional development is of high quality and is designed using principles of effective professional development, the convenience of attending professional development in one's own program with other colleagues from the program may support change. Program-based professional development may also allow teachers to work together to suggest action at the program level in environments where this is not ordinarily encouraged. When teachers have paid opportunities to continue to talk with their colleagues outside professional development sessions, integrated change appears even more likely. However, states and programs also need to provide opportunities for teachers to meet colleagues outside of their programs, so that teachers develop a critical sense of their programs' assets and needs and an awareness of being part of the field of adult education.

Establish expectations at the state and the program level that all teachers must continue to learn. Help teachers identify their highest-priority learning needs and provide professional development to match, recognizing that not all change is related to the topic of the professional development. When we recommend setting expectations for continued learning, we are not here talking about certification requirements or formal competencies; our study did not investigate the influence of those on teacher change. However, using the concept of the "settled" teacher, professional developers should realize that some teachers attend professional development without a strong desire to learn more about the topic, about theories of teaching and learning, or about good teaching practice. In our sample, not all teachers viewed this particular professional development as necessary. Some had no strong motivation to be there; they were not driven because they had a problem related to the topic and were essentially satisfied with their teaching and their program. While these teachers may have gained some knowledge on the topic, we did not see much change in them. We are *not* saying that these teachers were not good teachers; we have no data about that. We are saying, rather, that we discovered teachers in our sample who were attending professional development for reasons other than to learn about the topic or to develop their theories of good teaching and student success, and that this was a factor in how much they changed. Some of these teachers did acquire new concepts and benefits unrelated to the topic that affected them positively including: collegiality, knowledge of the broader field, and strategies for how

to survive in or change the program within which they worked. Just as adult learners may gain something from education that is as, or more, important to them than reading, writing, or math skills, such as self-esteem, working in teams, goal setting, and so on, we found teachers in our study who gained confidence in their teaching, an awareness of what the “field” of adult education is all about, or a feeling of companionship with other teachers, even if they did not do much to address learner persistence in their classroom or program. These are not inconsequential results from professional development, but there’s no reason to believe that they wouldn’t also result from professional development on topics that match teachers’ learning needs more closely.

The fact that there were teachers participating in the NCSALL professional development who did not have a strong need to learn about the topic means that professional developers must strive to provide professional development, in convenient venues, that does address a strong learning need. As we have learned from teaching adult students, needs assessment and identification of priority learning goals take time. It involves more than choosing from a menu of professional development topics. It requires teachers to think about what they already feel they know and don’t know, and to look within their classrooms at how their teaching is tied to student learning: where are students struggling and not making as much progress as either they or the teacher would like, and why? These needs should drive the type of learning and professional development a teacher seeks and the type of professional development a program or state offers. Teachers need then to have access to multiple opportunities for professional development on a broad range of topics, some of which they may not even have considered before.

Perhaps such a “learning assessment process” for teachers would be best offered at the program level; it is easier for programs to know the learning needs of their staff than for the state professional development system. It requires programs, however, to establish teachers’ participation in formal processes for both individual teacher improvement and program improvement initiatives, where teachers help identify priority program needs and these priorities, in turn, influence teachers’ professional development needs. The fact that a few of the teachers who attended our professional development seemingly did not have a strong need to learn on any topic means that programs and states should figure out how to help all teachers adopt the stance that, despite one’s qualifications, experience, or even success as a teacher, all teachers need to maintain an intrinsic motivation to continue learning. The mandate for teachers to “learn more and do better” also suggests that administrators hold themselves to the same expectations.

Recommendations for Professional Developers

Teachers are adult learners, and, as with the adult learners they teach, teachers are not all alike: they work in a variety of program and system situations, have different backgrounds, and have a range of approaches and motivations for learning. In each

professional development group, we found new and experienced teachers, teachers with more and less formal education, teachers with and without K–12 experience, teachers with and without access to working conditions such as benefits, teachers with and without decision-making power in their programs, and teachers with and without a strong desire to learn about the topic or about theories of good teaching and student success: groups of teachers who attend professional development are indeed “multilevel.” These differences influenced how teachers changed as a result of participating in the professional development. What we think we know about the best ways to teach adult learners is probably true for educating teachers too. Specifically, our research recommends that professional developers pay attention to the following.

Ensure that professional development is of high quality. The quality of the professional development, as rated by us and by the participants themselves, was an important factor influencing change. It wasn’t necessary for the professional development to be run by a professional trainer; mentor teachers ran some of the highest-quality groups. We assessed three quality factors: group dynamics, clear facilitation, and design. We didn’t assess the relative importance of any of these factors compared to the others, but all three played a role in the quality of the group. The facilitator was a crucial element, and the best facilitators were those who followed the design while making changes that allowed time for addressing participants’ concerns as they arose.

Offer a variety of professional development models for teachers to attend. All three models of professional development tested in the study (multisession workshops, mentor teacher groups, practitioner research groups) supported teacher change. However, the finding that none of these models was superior to the others (in terms of supporting teacher change) should not be taken to mean that they would be equally effective in every situation. We built similar design features into all the professional development models we tested,²⁵ so we cannot provide guidance or assurance about the efficacy of professional development models that don’t have these features. In other words, our study sheds no light on whether “training” is as good as practitioner research, if that “training” consists of only one session with no follow-up. The subtle differences we found among the models—that teachers completing practitioner research group professional development showed slightly higher overall change and that teachers completing mentor teacher group professional development were slightly more likely to demonstrate integrated change—might have been stronger with a larger sample. Therefore, while there is no reason to reject any of these models as less effective than the others, there is also no reason to suppose that there are no differences among them.

²⁵ More than one session, scheduled over time; expectations and support for practitioners to try something out in their classrooms or programs between sessions and bring their experience back to the next session; time for planning what they will do with their new learning; time for participants to share their own experiences and ideas of what worked; emphasis on an inquiry process/cycle of learning and taking action.

There is, however, every reason to believe that a single model of professional development wouldn't have sufficed for all the teachers in our study, year in and year out. Teachers participated for different reasons, with different levels of experience in the field and in professional development, and so had different reactions to the professional development. These reactions in some cases influenced how long teachers stayed in the professional development and in other cases influenced the change they made afterward. For example, we found that practitioner research groups had a greater number of teachers with more experience in the field, whereas mentor teacher groups had a greater number of teachers who worked fewer hours per week in adult education. This is an indication that teachers may opt to participate in different models based on their experience or situation. No one model of professional development is sufficient for the range of adult education teachers in our field.

Be clear during recruitment for “reform” models of professional development about what participation will be like for teachers. Providing enough information about the professional development during recruitment is important, because participants' expectations of the professional development affected group dynamics, and this was especially true for newer, “reform” types of professional development such as mentor teacher groups or practitioner research groups. When participants did not have a clear idea of what they would be expected to do during the professional development, they were confused, and this sometimes annoyed other teachers in the group who were ready and willing to engage in the professional development activities. Adequate information about what to expect from nontraditional forms of professional development would have helped those teachers who were more familiar and comfortable with traditional professional development models, such as workshops, that ask them to listen to the knowledge produced by others rather than produce knowledge of their own.

Help teachers acquire skills to build theories of good teaching and student success. Teachers, especially new teachers, often say that they need new techniques and practical ideas; however, a larger “bag of tricks,” while helpful to those “acting” teachers in our study, did not lead to sustained, integrated change. Teachers need to understand *why* a particular technique should be used, not just *how* to use it; they need the underlying foundational theory of teaching and learning that will allow them to integrate new thinking with new actions.

Teachers in our study who had the skills and desire to build such theories gained more from professional development, and even those teachers who didn't have the skills but had the desire gained something. While we discovered teachers who fit the description of “settled” teachers, in that they did not express a desire to build theories of teaching and learning, we also discovered other teachers who had a desire to refine their theories based on practice, but did not have the skills to do so on their own. They knew they needed some overarching theoretical framework, and some even knew they needed to create this framework through a combination of knowledge and practice, but they

didn't know how to go about taking what they had learned in the professional development and building on it through practice and reflection of their own. We found that reflecting critically on one's practice in order to build continually one's theories of teaching and learning was not a skill that some teachers simply acquired by dint of being teachers, and it was also not a certain by-product of attending a particular professional development model (such as practitioner research) that endeavors to develop reflectiveness. Rather, building theories of good teaching and student success through a process of learning, practice, and reflection is a skill that teachers need to be taught deliberately and consciously. A corollary to this expectation is the recommendation that programs and states should work hard to reach new adult education teachers, especially those who are teaching for the first time. Our study demonstrated that these teachers may be more open to change, more apt to act upon what they learn, and more in need of developing theories of teaching and learning. These teachers need the skills to reflect critically on what they learn and tie it to a process of integrated thinking and acting.

Add activities to professional development to help teachers strategize how to deal with the forces that affect their ability to take action. Teachers need support in order to translate their new ideas into practice. Teachers in our study were affected by program and system factors that acted as barriers or supports to taking action based on what they learned in the professional development. Whether the barrier is lack of time to prepare new classroom activities, fear of trying something new within the constraints of curriculum and established program policies, or lack of help from colleagues or directors in assessing how well something new worked, teachers need time in professional development to strategize how they will deal with these barriers once back in their program.

We feel that teachers in our sample would have been helped had we created an activity within the final session of the professional development where they could brainstorm about supports and hindrances to taking action. If they had time during the professional development to recognize and then strategize about how to overcome common barriers, they might have left the professional development with ideas for increasing supportive factors and reducing hindering factors. Professional development cannot remove entirely the barriers to change that exist in teachers' working contexts, but it can provide time and a platform for teachers to discuss these barriers, and strategize how to deal with them on their own.

Recommendations for Teachers

We recognize, as do teachers, that teachers do not always have power to change the working conditions and situations that would support them to get the most out of professional development. Yet our research findings do support some recommendations for teachers to consider and work toward, together with their colleagues:

Expect high-quality professional development. Facilitators should be well organized and follow a clear plan but be able to adapt the activities in the professional development to teachers' particular needs. Teachers should consider how they best learn and request professional development models that match, being aware that different models have different requirements of them as participants and learners.

Think clearly about what they want to learn in professional development. Start by looking at students' learning and considering the areas where teachers and students feel they are achieving well and where they are not, and what this means for their teaching. Teachers should work with program and state professional development decision-makers and make their needs known, so that they can attend professional development on topics that will be most relevant to their needs (and which will, consequently, have the greatest impact on learners' achievement).

Recognize the need to develop a philosophy and theory of good teaching and student success. Teachers should use professional development activities to help them continually revise, expand, and test that theory as they take action to improve the quality of their teaching. They should also recognize that no theory will ever be "finished"; as long as they teach, there is always something more to learn.

Work to increase opportunities for collegiality and teacher decision-making in their program.

Work with other colleagues to improve working conditions. Teachers should advocate for paid prep time, professional development release time, and benefits as part of their adult education job.

Final Thoughts

Many professional development studies in K–12 have investigated how teachers change over time as a result of professional development, but few studies of this type have been conducted in adult education. The important contribution of this study is that it offers, for the first time in the field of adult education, an understanding of the factors that affect how teachers change. A key finding of this study is that teachers change in different amounts and ways as a result of participating in professional development, and individual, professional development, program and system factors interact to affect this change. These factors, some of which are unique to adult education, such as lack of prep time and benefits, influence how teachers change and benefit from the professional development in which they participate.

Given that few adult education teachers enter adult education classrooms with formal preparation specifically in teaching adults, professional development is even more important. As the field moves into an era of stronger accountability, it is important for

program directors, professional development leaders, and state staff to understand how factors support or hinder the improvements in quality that are being promoted at the federal, state, and program level. Programs and states increasingly will expect professional development to prepare teachers to adopt evidence from research in their classrooms and programs, in order to improve outcomes for learners. This study demonstrates that professional development, while necessary, is not sufficient by itself to drive changes in practice. Professional development is one tool for change but needs to be offered within a context that supports teachers to make change. While teachers are always the link between professional development and student outcomes, they are never the only influence, and this research draws attention to some of the program and system factors that will need to be addressed in our field for change to happen. This may require those who make decisions about how to structure services for learners to think seriously about devoting more funding to better supporting teachers, at the expense of serving more students.

Our study indicates that models for improvement *do* exist in our field. There are programs in the field worth emulating, programs that find ways to support teachers to attend and make change. There are states that invest in teachers' working conditions in ways (more working hours, paid prep time, benefits) that will also "stretch" their professional development dollars. Certainly there are teachers ready to take advantage of professional development offered.

There is still much we don't know about professional development in adult education, such as the connection between professional development and student achievement among different learner populations. Our study provides information to professional development decision-makers about how to help teachers and programs make the most of the professional development that is offered, and we hope that future research will provide more information about other factors influencing teacher change that we were not able to test here. In the meantime, our field will have to continue to learn from the K-12 research on professional development and from what we can glean from evaluations of professional development activities. What is clear to us from our study, however, is that professional development can play a critical role in improving teachers' knowledge and supporting teacher change in our field, but even the hungriest teachers attending the best designed, highest-quality professional development cannot do it alone.

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