Implementation of the Master Plan for Statewide Professional Staff Development for 2012-2013

An Evaluation Study

West Virginia Department of EDUCATION
Office of Research

Implementation of the Master Plan for Statewide Professional Staff Development for 2012-2013

An Evaluation Study

Patricia Cahape Hammer

West Virginia Department of EDUCATION
Office of Research

West Virginia Department of Education
Division of Teaching and Learning
Office of Assessment, Accountability, and Research
Building 6, Suite 825, State Capitol Complex
1900 Kanawha Boulevard East
Charleston, WV 25305
http://wvde.state.wv.us/research

April 2014

James B. Phares
State Superintendent of Schools
West Virginia Department of Education

Robert Hull
Associate Superintendent
West Virginia Department of Education

Juan D'Brot
Executive Director
Office of Assessment, Accountability, and Research

Keywords
Evaluation, professional development, state goals, implementation, effectiveness, quality

Suggested Citation

Hammer, P.C. (2014). *Implementation of the Master Plan for Statewide Professional Staff Development for 2012-2013: An evaluation study*. Charleston, WV: West Virginia Department of Education, Division of Teaching and Learning, Office of Assessment, Accountability, and Research.

Content Contact
Patricia Cahape Hammer
Coordinator
Office of Research
phammer@access.k12.wv.us

This research study was reviewed and approved by the West Virginia Department of Education Institutional Review Board (IRB-WVDE-006). Should you desire additional details about this study's approval status, you may contact the WVDE IRB chairperson, Patricia Cahape Hammer (phammer@access.k12.wv.us).

Executive Summary

West Virginia Code §18-2-23a[1] required the West Virginia Board of Education (WVBE) to establish annual professional development goals for public schools; to coordinate professional development programs; and to guide program development, approval and evaluation. Toward these ends, the WVBE (2012) adopted the following goals for professional development for the 2012–2013 school year:

To provide professional development that—

1. Aligns with curriculum standards to increase educator effectiveness in the arts, world languages, health, physical education, career/technical, reading/English language arts, mathematics, science, and social studies.
2. Focuses on developing in-depth understanding of the essential features of the growth and development of the personal, physical, social, and emotional needs of each student, including providing students with personalized pathways and guidance to help them have productive and satisfying lives.
3. Develops the leadership competencies, professional culture, and characteristics necessary to increase the support of teaching and learning.

West Virginia Code §18-2-23a further required that, each year, once the annual goals are set, the state board must submit the goals to the major state agencies responsible for providing professional development to teachers, administrators, and other professional education staff statewide, including the West Virginia Department of Education (WVDE), the West Virginia Center for Professional Development (CPD), the regional education service agencies (RESAs), and the Higher Education Policy Commission (HEPC). These agencies then are required to collaborate in the development of an annual master plan for professional development aligned with the goals. Additionally, the statute requires evaluation of the effectiveness of the professional staff development programs. The WVBE charged the WVDE Office of Assessment, Accountability, and Research to meet this requirement.

In this evaluation, as in previous years, we examined four main aspects of the implementation of the West Virginia Board of Education's Master Plan for Statewide Professional Development: (a) basic information reported by providers about the size and scope of the effort, including attendance, and adherence to the newly adopted standards for professional development; and participant reports (gathered through the administration of a randomized statewide survey) about the (b) quality of the sessions, (c) their alignment to Board goals for professional development, and (d) the impacts of the sessions on participants' knowledge, practice, and attitudes and beliefs. Each of these four areas is discussed below, including trends noted over the three years that the WVDE Office of Assessment, Accountability, and Research has conducted this evaluation.

Methods

[1] Effective July 1, 2013, this law was repealed and a new statute was written, §18-2I. However, both the new and old statutes require an evaluation of the implementation of the statewide professional development plan, including its effectiveness, efficiency, and impact.

The following results are based on 1,018 reports submitted by the PD providers using an online reporting tool, during three data collection periods that spanned the period from June 1, 2012 through May 31, 2013. This number of reports represents a large increase from the previous year, during which 572 reports were made. In addition to the provider reports nearly 6,000 individuals responded to a survey with collection periods in the late fall of 2012 and spring of 2013. This number of respondents represented a 65.6% response rate.

Findings and Discussion

With regard to basic issues of implementation, by far the most notable trend was the decrease in participation in the PD Master Plan by the RESAs during this period. Before providing details about this decline it should be noted that this trend was reversed in the 2013-2014 PD Master Plan (an evaluation of which is currently underway), making 2012-2013 a low point. This shift will be covered in subsequent evaluation reports; however for the 3-year time period from 2010-2011 through 2012-2013,

- the Center for Professional Development (CPD) increased its slate of sessions more than fivefold;
- institutions of higher education (IHEs) with teacher preparation programs held steady at a very low level of participation with only one (Marshall University) of 12 participating;
- the WVDE more than doubled its participation; and
- the RESAs reduced their collective contribution to the PD Master Plan by about two thirds.

As for attendance in professional development sessions offered by the four provider groups required to participate, the WVDE was responsible for more than three quarters of all participants in PD Master Plan sessions in 2012-2013.

RESA directors indicated on multiple occasions following the publication of the 2010-2011 evaluation report that one insurmountable impediment to their participation was the schedule they were required to follow in submitting their lists of sessions for inclusion in the plan. They argued that because they must provide PD in response to the strategic plans of the districts they serve (submitted in early fall), they could not predict at the time the PD Master Plan was being developed, what PD they would need to offer. For this reason, the Board allowed all providers to update their plans in late fall, beginning in 2012. Marshall University and seven WVDE offices took this opportunity to add sessions to their plans; none of the RESAs did.

In 2013-2014, however, RESAs seem to have changed their approach to the PD Master Plan. In that plan the RESAs vary in their number of offerings from a low of two sessions (RESA 8) to a high of 49 (RESA 1). The higher numbers of offerings by most RESAs more closely reflect their reports for professional development in their annual reports. This is a situation that will need continued monitoring, as RESAs take a larger role in providing professional development, and as the State Board works to develop a more coherent statewide system for professional learning.

Other notable implementation trends include the fact that nearly 7,400 educators in the state participated in sessions of 30 hours or more duration, which is the minimum that recent reviews of the research identify as producing changes in teacher practice and/or student performance (Yoon, Duncan, Scarloss, & Shapley, 2007). Of the sessions offered during the reporting period, about a third were brief, informational sessions, another third were half-day to slightly less than two-day technical training sessions and the remaining third were sessions of two or more days duration.

This was the first year that providers were asked to report how aligned their offerings were with the new Board standards for professional development, which are an adaptation of the Learning Forward standards. Overall, there was less than a 60% level of compliance with the standards. The Center for Professional Development reported 100% compliance for all standards for all sessions, while Marshall University reported a rate of compliance at about 78%, followed by the RESAs at 67% and WVDE at 48%. By their own self-reports providers, overall, are strongest with regard to the following Board professional learning standards, with which they reported about two-thirds of their sessions aligned:

1. Occurs within learning communities committed to continuous improvement, collective responsibility, and goal alignment.
5. Integrates theories, research, and models of human learning into learning designs to achieve its intended outcomes.
7. Aligns its outcomes with educator performance and student curriculum standards.

Weakest alignment (less than half of reported sessions) with the Board professional learning standards was reported for the following:

4. Uses a variety of sources and types of student, educator, and system data to plan, assess, and evaluate professional learning.
6. Applies research on change and sustains support for implementation of professional learning for long-term change.

The remaining standards ([2] Requires skillful leadership to develop capacity, advocate, and create support systems for professional learning; [3] Requires prioritizing, monitoring, and coordinating resources for educator learning) fell in between.

There seemed to be some confirmation in the participant survey responses for the lack of alignment with Standard 6; only two thirds of participants agreed or strongly agreed that the professional development session they attended had included "adequate embedded follow-up and continuous feedback." In other words, ongoing follow-up to help them succeed in their implementation was lacking in a third of participants' experiences.

The standards are new for state providers, and although they were included in information that went out to providers during the time the PD Master Plan was developed, it is unclear how aware of them most providers are. Data about the Board standards in this report should be considered baseline, and we will follow trends regarding providers' alignment with them in upcoming evaluation studies. Further, relying primarily on provider self-reports to measure alignment with Board standards for professional development is a limitation that should be noted.

Turning now to perceived quality, alignment with Board goals, and impacts, we note the following trends:

- This analysis showed no overall gain in quality since 2011-2012, with a score of 3.9 on a 5-point scale both years; there was only a slight gain compared with 2010-2011, which saw a score of 3.8.
- With regard to participants' recognition that the professional development was helpful in meeting Board goals for professional development, the overall agreement rate of 76.1%, exceeded the previous two years (i.e., 2010-2011, 67.8% and 2011-2012, 51.2%) There may be three factors at work in the relative high rate experienced this year: (a) providers were guided to a greater degree than previous years by the Board goals as they planned their sessions; (b) the goals were written more broadly, so it was easier for participants to see the connections; and/or (c) providers were required to select only one goal as aligned to the offerings in the PD Master Plan and were, therefore, less likely to select multiple, less closely tied goals for individual offerings.
- Although effect sizes ranged from moderate to very large, there was only a slight gain for perceived impacts on knowledge, and slight decreases for impacts on practice and attitudes/beliefs.

Taken together, these results show general satisfaction with the professional development participants experienced, but do not show much movement in improving the quality and impact. Further, the notable improvement in alignment with Board goals may have more to do with the goals themselves than with providers' efforts to align their offerings.

Limitations

Implementation findings in this report are based on self-reports by providers, which may be subject to bias. Further, the RESAs participated at very minimal levels both in terms of the number of sessions they submitted to be included in the 2012-2013 PD Master Plan and the numbers of participants they reported in those sessions. Consequently, it is unknown if the findings reported here are an accurate portrayal of RESAs offerings more generally. Lastly the use of a retrospective pretest/posttest methodology to assess changes in knowledge, behavior and skills, and attitudes and beliefs poses some concerns, especially its potential to inflate effect sizes. Therefore, we recommend cautious interpretation of our estimates of effect size, as they may be somewhat inflated.

Recommendations

As this report is written, the West Virginia Board of Education has engaged the National Commission on Teaching and America's Future to lead an effort to overhaul the state's approach to professional development. Recommendations in previous evaluations of the Board's Master Plan for Statewide Professional Development will likely be addressed in the course of this overhaul. In the meantime we offer the following recommendations:

- Find ways to increase the participation of institutions of higher education with teacher preparation programs from the current one IHE (Marshall University) to the full 12 IHEs that should be a part of it.
- Consider developing goals for professional development with a longer view, commit to those goals for a sustained period of time and publicize them broadly, so that those planning for and providing professional development at all levels will be fully aware of them and willing to align their efforts to form a more coherent statewide approach.
- Provide information about the Board standards for professional learning to all professional development providers working in the state, and develop training and incentives that will motivate providers to craft their offerings to meet those standards.

Contents

List of Figures

List of Tables

Introduction

West Virginia Code §18-2-23a[2] required the West Virginia Board of Education (WVBE) to establish annual professional development goals for public schools; to coordinate professional development programs; and to guide program development, approval and evaluation. The legislative intent of this section of state law was

> (1) To provide for the coordination of professional development programs by the State Board;
>
> (2) To promote high-quality instructional delivery and management practices for a thorough and efficient system of schools; and
>
> (3) To ensure that the expertise and experience of state institutions of higher education with teacher preparation programs are included in developing and implementing professional development programs.

Toward these ends, the WVBE (2012) adopted the following goals for professional development for the 2012–2013 school year:

> To provide professional development that—
>
> 1. Aligns with curriculum standards to increase educator effectiveness in the arts, world languages, health, physical education, career/technical, reading/English language arts, mathematics, science, and social studies.
> 2. Focuses on developing in-depth understanding of the essential features of the growth and development of the personal, physical, social, and emotional needs of each student, including providing students with personalized pathways and guidance to help them have productive and satisfying lives.
> 3. Develops the leadership competencies, professional culture, and characteristics necessary to increase the support of teaching and learning.

West Virginia Code §18-2-23a further required that, each year, once the annual goals are set, the state board must submit the goals to the major state agencies responsible for providing professional development to teachers, administrators, and other professional education staff statewide, including the West Virginia Department of Education (WVDE), the West Virginia Center for Professional Development (CPD), the regional education service agencies (RESAs), and the Higher Education Policy Commission (HEPC). These agencies then are required to collaborate in the development of an annual master plan for professional development aligned with the goals. The law states,

> The Master Plan shall serve as a guide for the delivery of coordinated professional staff development programs by the State Department of Education, the Center for Professional Development, the state institutions of higher education and the regional educational service agencies beginning on the first day of June in the year in which the Master Plan was approved through the thirtieth day of May in the following year. This section does not prohibit changes in the Master Plan, subject to State Board approval, to address staff development needs identified after the Master Plan was approved.

---

[2] Effective July 1, 2013, this law was repealed and a new statute was written, §18-2I. However, both the new and old statutes require an evaluation of the implementation of the statewide professional development plan, including its effectiveness, efficiency, and impact.

Additionally, the statute requires evaluation of the effectiveness of the professional staff development programs. The WVBE charged the WVDE Office of Research to meet this requirement.

Lastly, although not specifically required by law, the Board chose to adopt standards for professional development based on the Learning Forward (formerly National Staff Development Council) Standards for Professional Learning, and included them in the 2012-2013 Master Plan. According to the standards, professional learning that increases educator effectiveness and results for all students—

- Occurs within learning communities committed to continuous improvement, collective responsibility, and goal alignment.
- Requires skillful leadership to develop capacity, advocate, and create support systems for professional learning.
- Requires prioritizing, monitoring, and coordinating resources for educator learning.
- Uses a variety of sources and types of student, educator, and system data to plan, assess, and evaluate professional learning.
- Integrates theories, research, and models of human learning into learning designs to achieve its intended outcomes.
- Applies research on change and sustains support for implementation of professional learning for long-term change.
- Aligns its outcomes with educator performance and student curriculum standards.

Goals of the Evaluation

This evaluation study provides summative information about the implementation of the Master Plan for Professional Staff Development for 2012-2013 as follows:

- *Implementation of planned sessions,* including the number of teachers, administrators, and others who participated in the professional development sessions targeted at each of the goals listed in the PD Master Plan from June 1, 2012 through May 31, 2013; sessions planned versus sessions delivered; adherence to the Board standards for professional development duration of the sessions; their location; attendance at sessions conducted by each of the providers; and the delivery mode (i.e., online, face-to-face, blended, or other).
- *Participant perceptions about the sessions' adherence to research-based practices for high quality professional development,* including whether sessions were (a) intensive in nature; (b) specific and content-focused; (c) relevant to participants' current needs and professional circumstances; (d) hands-on with active learning opportunities; (e) supported by follow-up discussion or collaboration at participants' workplaces or online; (f) supported by related follow-up PD sessions; and (g) beneficial and had a positive impact on participants' students and/or schools.
- *Participant perceptions about the sessions' helpfulness with regard to reaching the specific goals for professional development as specified in the 2012-2013 PD Master Plan*
- *Participants' perceived (self-reported) outcomes resulting from their involvement in professional development associated with the PD Master Plan*—for ex-

ample, changes in educators' (a) knowledge; (b) behaviors and skills; and (c) attitudes and beliefs.

Methods

Population to be Studied

This study examines the performance of professional development providers in implementing the 2012–2013 Master Plan for Professional Staff Development (PD Master Plan), which was approved by the West Virginia Board of Education in May 2012. Providers in the list included the Center for Professional Development, two centers from Marshall University (the only institution of higher education [IHE] that participated in the plan), all eight RESAs, and 14 offices from the West Virginia Department of Education (WVDE)—a total of 25 providers in all.

Unlike previous years, in 2012–2013 all WVDE offices involved in teacher preparation, curriculum and instruction, or school leadership participated in the plan—an increase from eight offices in 2011–2012 to 14 offices in 2012–2013. Similar to previous years, participation by public IHEs with teacher preparation programs were largely absent from participation in the PD Master Plan. Only Marshall University participated.

Sampling Procedures

All 25 professional development providers in the PD Master Plan reported on sessions they conducted as part of the Plan, providing the (a) title of session, (b) alignment of the session with the Board standards for professional development, (c) beginning and ending dates, (d) duration of the session in hours, (e) format of the sessions (i.e., face-to-face, online, or blended), (f) number of participants, and (g) e-mail addresses for all participants.

Using the e-mail addresses of participants reported by the providers as attending sessions held from June 1, 2012 through March 31, 2013, we conducted two online surveys of teachers, administrators, and others who attended the professional development. For both the first and second participant surveys (conducted in late fall, November-December, 2012 and spring, April-May, 2013), we applied multistage sampling—systematic, stratified, and simple random—to select participants for this study, using the following procedure:

We combined the e-mail addresses—each e-mail address with its associated PD Master Plan session ID and provider—into one comprehensive Excel file (N = 6,528 for the first participant survey; N = 13,122 for the second).

- Participants were sorted by e-mail address and assigned a random number. The sample was then resorted by random number and the first occurrence of each individual's e-mail was selected. For the spring survey, an extra step was involved to avoid contacting any individual twice in one year. The sample was checked against the sample from the fall, and any case that had been previously surveyed was removed.
- The sample was then stratified by provider and a simple random sample was drawn for each provider.

Overall, sampling for each provider, inclusive of both survey periods, is shown in Table 1 (below).

Table 1. Total Attendance Reported, E-mail Addresses Provided, and Sample Selected for Participant Survey

Provider	Attendance reported	Email addresses provided	Sample selected
All providers	32,582	19,650	9,129
Provider groups			
Center for Professional Development	2,818	2,665	994
Public institutions of higher education (Marshall)	839	743	468
Regional educational service agencies (RESAs)	4,090	2,049	1,160
West Virginia Department of Education (WVDE)	24,835	14,193	6,507
Individual providers			
Center for Professional Development*	2,818	2,665	994
Marshall University Clinical Experiences and Professional Development Schools	120	200	134
Marshall University June Harless Center	719	543	334
RESA 1	912	500	211
RESA 2	259	165	91
RESA 3	566	73	49
RESA 4	460	197	99
RESA 5	200	173	96
RESA 6	708	265	159
RESA 7	798	516	318
RESA 8	187	160	137
WVDE Office of Assessment and Accountability	1,130	693	478
WVDE Office of Career and Technical Accountability and Support	1,268	412	295
WVDE Office of Career and Technical Innovations	115	43	43
WVDE Office of Career and Technical Instruction	1,587	404	324
WVDE Office of Child Nutrition	70	51	51
WVDE Office of Early Learning	2,624	2,650	718
WVDE Office of Federal Programs	62	34	26
WVDE Office of Healthy Schools	369	331	289
WVDE Office of Instruction	1,577	1,070	666
WVDE Office of Instructional Technology	6,802	2,567	943
WVDE Office of Optional Educational Pathways	596	463	354
WVDE Office of Professional Preparation	2,166	1,672	766
WVDE Office of School Improvement	1,244	1,110	508
WVDE Office of Special Programs	5,225	2,693	1,046

*The provider groups are specified in West Virginia Code §18-2-23a. Because the Center for Professional Development is a single entity, it appears in both the provider groups and individual providers lists above.

It should be noted that participants in professional development scheduled during the months of April and May, 2013 were not surveyed to avoid interfering with the *WESTEST 2* testing window and in recognition of the fact that teachers and others are difficult to reach with the onset of the summer break.

Sample Size, Power, and Precision

Knowing the population of each provider, we used sample size calculation software[3] to determine what sample size was needed to attain a 95% confidence level with a +/-3%, margin of error, and then drew samples sufficient to achieve that level of confidence for each provider with a 70% response rate. The sample amounted to about 46.5% of the e-mail addresses submitted by providers, and included more than 9,000 attendee e-mail addresses.

Measures and Covariates

As mentioned above, providers used an online SurveyMonkey tool to report essential information about each professional development session they conducted, including (a) name of provider, (b) contact information, (c) title of session, (d) alignment with Board goals, (e) duration in hours, (f) beginning and ending dates, (g) county location, (h) format (face-to-face, online, or blended), (i) number of participants, (j) e-mail addresses for all participants, and (k) comments (optional).

Information collected using this session report was combined with information about the planned sessions in the PD Master Plan, which allowed us to report on sessions held related to each of the West Virginia Board of Education (WVBE) goals for professional development, and other information about implementation of the plan.

To collect participants' perceptions about the quality, relevance, and effectiveness of the training, an online survey questionnaire posted via SurveyMonkey, the WV PD Master Plan: 2012-2013 Participant Survey, was used. Each participant in the survey was contacted up to five times, about only one PD session they attended between June 1, 2012 and March 31, 2013. Responses about these individual provider offerings were then aggregated to provide overall perceptions about various aspects of the training offered by each provider. The questionnaire included a section on participant demographics and three sections on participant perceptions about the PD they attended.

Independent variables related to participants included (a) county, (b) programmatic level, (c) professional role, and for teachers, (d) main content area taught. Dependent variables were participant perceptions about various aspects of the PD sessions, including (a) the sessions' adherence to research-based practices for high quality professional development; (b) the sessions' helpfulness with regard to the specific Board goals for professional development; and (c) perceived (self-reported) outcomes of participants' involvement in the professional development.

Lastly, we surveyed providers in early June 2013, to discover the reasons why some sessions listed in the PD Master Plan were not offered. To collect these data, we sent email messages to the executive directors of each provider organization which listed the sessions in the PD Master Plan for which we had not received any reports, and asked them to supply the main reason the session was not offered.

[3] MaCorr Research (n.d.) Sample Size Calculator. Available online at http://www.macorr.com/sample-size-calculator.htm.

Research Design

We used a multimethod research design for this project, and used descriptive statistics to explore five distinct areas: (a) implementation of the professional development sessions listed in the PD Master Plan, (b) description of participants, (c) participants' perceptions of the quality of professional development, (d) participant perceptions of the extent to which professional development met the goals established as part of the PD Master Plan, and (e) participant perceptions about the impact of the professional development on their knowledge, behaviors, and attitudes/beliefs. We also conducted a variety of post-hoc exploratory analyses to determine level of participation in the PD Master Plan by the various provider groups, which by law, are required to participate in the formation of the plan and its evaluation. Each of these investigations involved a variety of analyses, as described below.

Description of professional development

We used descriptive analyses including frequency distributions and cross-tabulations to provide an overview of the professional development offered by each provider during the 2012–2013 academic year and trends from 2010-2011 to 2012-2013. This analysis included a description of which events were published in the Master Plan and then provided, as well as those that were published, but never provided (e.g., canceled events). We analyzed results of the missing sessions reports submitted by providers that did not deliver all of the sessions in their plan.

Description of participants

We conducted additional frequency analyses to examine the composition of the participant survey sample with respect to key demographic variables noted above (see Measures and Covariates).

Participant perceptions about the extent to which the professional development used research-based practices

We calculated average ratings and frequency distributions to describe the extent to which participants described the PD session as adhering to research-based practices for high quality professional development, that is, whether the professional development was (a) intensive in nature, (b) specific and content-focused, (c) relevant to their needs as educators, (d) hands-on including active learning opportunities, (e) supported by follow-up discussion or collaboration at their school, office, or online, (f) supported by follow-up professional development sessions, and (g) beneficial and positive for students and/or schools. These results are presented for the overall sample as well as disaggregated by provider, provider group, and the duration of the training.

Participant perceptions about the extent to which the professional development met the goals established by the WVBE as part of the 2011–2012 PD Master Plan

We used descriptive statistics (i.e., mean and frequency distribution) to examine the extent to which the professional development provided in 2012–2013 met the goals set forth by the WVBE as part of the 20112–2013 PD Master Plan. To accomplish this, we first selected all response records in the data set involving respondents who attended a professional

development event that providers indicated was aligned to, for example, Goal 1 as listed in the PD Master Plan. Then we determined respondents' ratings regarding the extent to which the event met this specific goal, and reported the percentage of total respondents who indicated they agreed or strongly agreed that the professional development was helpful in meeting Goal 1. We repeated this procedure for Goals 2 and 3.

Participant perceptions about the impact of the professional development on their knowledge, behaviors, and attitudes/beliefs

The participant survey includes three pairs of items designed to assess the impact of the professional development experience upon participants' knowledge, behaviors, and attitudes/beliefs. Each pair consists of an item that asks respondents to rate their knowledge, behaviors, or attitudes/beliefs before participating in the professional development and then provide ratings for after having participated in professional development.

We used a retrospective pretest/posttest design to determine if respondents' posttest ratings are significantly different from pretest ratings (i.e., paired samples *t* tests). In addition, we conducted analyses of the effect size for the difference in respondents' pre-/posttest ratings to determine whether any statistically significant differences also have practical significance. Results were examined for the entire sample and disaggregated by provider, provider group, and duration of the training.

Results

Results in this section are presented in three major sections: the first is devoted to implementation of the plan, based on provider reports; the second focused on the quality, alignment with Board goals, and perceived effectiveness of the professional development sessions, based on a survey of participants; and the third includes ad hoc analyses of other qualitative data.

Implementation of the PD Master Plan: Analysis of Provider Reports

The following results are based on 1,018 reports submitted by the PD providers using an online reporting tool, during three data collection periods: November (covering June 1–October 31, 2012), April (covering November 1, 2012–March 31, 2013), and June (covering April 1–May 31, 2013). This number of reports represents a large increase from the previous year, during which 572 reports were made.

Level of implementation

The number of different professional development session titles offered by providers ranged from one (WVDE Office of Child Nutrition) to 85 (WVDE Office of Instructional Technology). The RESAs each submitted three session titles with, in each case, one session aligned with each of the Board's goals. In previous years, RESAs coordinated their session title submissions, all eight of them submitting the same set of titles (i.e., eight in 2011-2012 and seven in 2012-2013). This is a notable reduction in participation by the RESAs, during a time when other provider groups have increased their participation, especially CPD and offices in the WVDE. Figure 1 shows the overall trends for participation in the PD Master Plan—that is, the number of session titles each provider category submitted to be included in the plan.

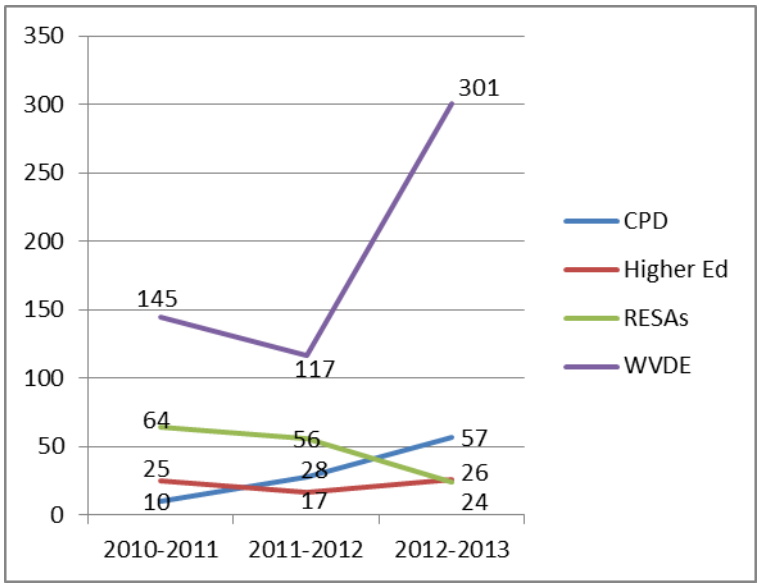

Figure 1. Number of Session Titles Submitted by Provider Category

Participation in the PD Master Plan by Offices in the West Viginia Department of Education rose dramatically in 2012-2013 while participation rose steadily for the Center for Professional Development, remained stable for institutions of higher education, and declined for regional education service agencies.

Overall, 81.2% of the professional development sessions included in the final 2012–2013 PD Master Plan (post addendum period in November 2013) were actually provided to educators across the state (Figure 2). This percentage is up slightly from 77.5% the previous year. PD providers were asked to report dates, locations, duration, alignment with the Board standards for professional development, attendance figures, as well as attendee e-mail addresses for all sessions they included in the PD Master Plan. If we received none of this information for a particular session, we counted that session as not provided or reported. In some cases, an individual session listed in the PD Master Plan was held several times with different groups of educators in various locations during the course of the academic year. In those cases, we aggregated the e-mail addresses and attendance numbers and reported them as one of the planned sessions listed in the PD Master Plan (PD provided column), and also broke out the number of individual repetitions of the sessions (repetitions) held (see Table 4 in the Appendix, page 29.

Figure 2 shows the level at which each of the providers followed the plan they submitted and had approved as part of the PD Master Plan (see the figure caption for a brief discussion). For details about each of the providers, see Table 4 in the Appendix (page 29). For session topics not reported as delivered, providers were asked to submit the main reason, in each case, why they did not hold any sessions under those topics. The most prevalent reasons included the following (next page):

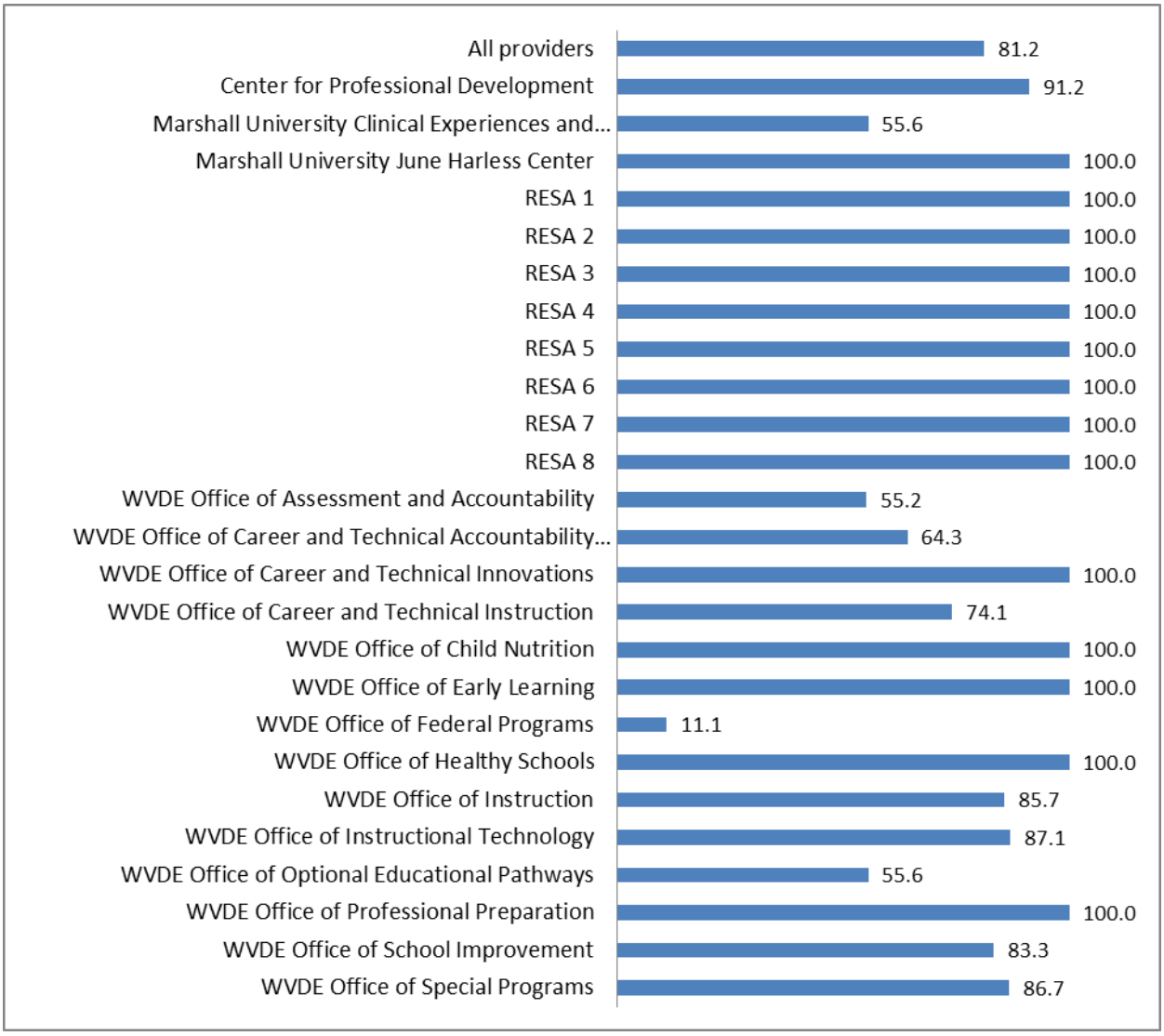

Figure 2. Percentage of Professional Development Included in the PD Master Plan That Were Provided During 2012-2013

Most providers were able to provide all or nearly all of the sessions they submitted for the PD Master Plan (including the addendum period in the fall of 2012). The remainder provided more than half of their planned sessions with one notable exception, the WVDE Office of Federal Programs. This office was affected by a WVDE reorganization that resulted in staff being reassigned from other offices to this office, with changed priorities. Other WVDE Offices were affected to a lesser extent by the shift in priorities resulting from the Board's response to the 2012 Education Audit.

- The session topic was combined with another, often in collaboration with a RESA or another WVDE office (19 responses).
- State Board or Department priorities or policies changed (17 responses).
- There was a lack of requests or sufficient participant registrations (12 responses).
- The session was scheduled just before or after the reporting year (11 responses).

Attendance trends

Overall attendance trends paralleled providers' levels of participation in the PD Master Plan. Attendance at WVDE- and CPD-sponsored sessions rose from the previous years, while attendance at IHE- and RESA-sponsored events fell. Overall, attendance was up by about 50% (Table 2). Attendance at WVDE-sponsored professional development accounted for over three quarters of the total attendance at sessions included in the PD Master Plan.

Table 2. Attendance Trends by Provider Category, 2011–2012 and 2012–2013

	Number of attendees	
Provider category	2011-2012	2012-2013
Total	21,552	32,582
CPD	1,109	2,818
Higher education	1,181	839
RESAs	4,657	4,090
WVDE	14,605	24,835

Format, duration, and time span

By far, the prevailing experience for participants in professional development was to meet face-to-face. More than three quarters of participants were in face-to-face sessions, followed by 15% in online experiences, which were offered primarily by the WVDE Office of Instructional Technology. The remaining participants—about 6%—were in sessions that blended online and face-to-face experiences (Figure 3).

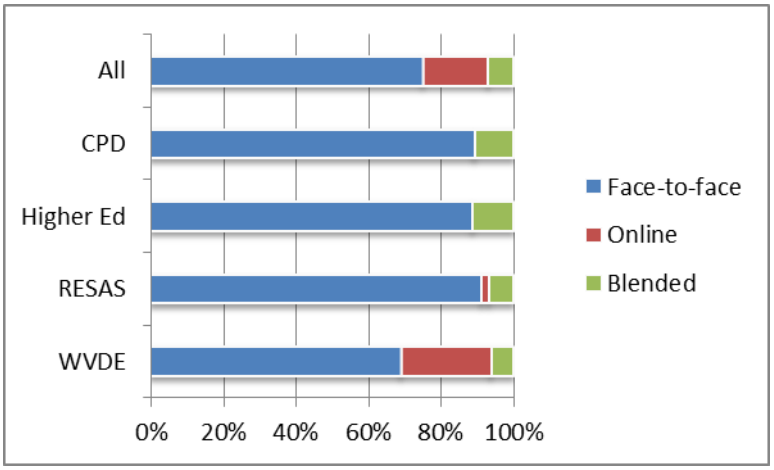

Figure 3. Percentage of Attendance in Face-to-Face Session Versus Other Formats, Overall and by Provider Category

Of the four provider categories, the West Virginia Department of Education was the source of most online professional development experiences for educators in 2012-2013.

Overall, professional development sessions provided through the PD Master Plan were about evenly divided among *information* sessions (up to 4 hours), *technical training* (5-13 hours), and *sustained professional development* sessions (14 or more hours). For details about each of the providers, see Table 5 in the Appendix (page 30).

Looking at numbers of participants in these sessions, however, provides a slightly different story (see Table 6 in the Appendix, page 31). The categories in descending order of

participation were sustained (38%), technical training (35%), and informational (28%). Four providers took the lead in providing sustained professional development to the greatest numbers of participants. They were, in descending order, the WVDE Office of Instructional Technology, the WVDE Office of Special Programs, the Center for Professional Development, and the WVDE Office of Instruction.

Recent research reviews, however, indicate that many more contact hours than 14 are needed to positively affect student achievement (Blank, de las Alas, & Smith, 2008; Clewell, Campbell, & Perlman, 2004), with 30 hours being considered the minimum (Yoon, Duncan, Lee, Scarloss, & Shapley, 2007). In light of these findings and for the purposes of this report, we devised a new category for duration, a *recommended* category of 30 or more contact hours. The WVDE Office of Instructional Technology far exceeded any other providers in the number of participants in sessions of 30 hours or longer duration, with 3,068 participants. Other providers offering relatively large numbers of participants in professional development at the recommended level of contact hours included the Center for Professional Development (1,323), The WVDE Office of Instruction (984), and the WVDE Office of Special Programs (864). Altogether, nearly 7,400 educators in the state participated in sessions of 30 hours or more duration (Table 6 in the Appendix). For a visual display of these data, see Figure 4 below.

On the other hand, half or more of some providers' offerings fell within the informational category—that is, having a duration of 4 hours or less. These providers included RESA 1 (56.1%), RESA 3 (69.2), RESA 6 (62.5%), WVDE Office of Assessment and Accountability (54.2%), WVDE Office of Career and Technical Instruction (71.6%), WVDE Office of Federal Programs (83.3%), and the WVDE Office of Professional Preparation (55.6%; Table 5).

As for timespan, the overall average timespan was 21.3 hours. The providers with the longest average timespans were Marshall University's Clinical Experiences and Professional Development Schools (146.3 days), Marshall University's June Harless Center (103.1 days), and RESA 4 (127.5 days; Table 6). The Marshall University June Harless Center and RESA 4 also had high percentages of sessions that had durations of at least 14 hours (sustained and recommended categories combined), with about 61% and 68% respectively of their sessions falling into those categories (Table 5).

Location of offerings

Professional development sessions offered by providers in the PD Master Plan were held in every county except Calhoun, Pendleton, and Tyler; however, results of the Participant Survey revealed that there were participants in PD Master Plan sessions from all counties (see next section). More than 4,300 participants took part in sessions held online, for which no county location was designated. Attendance was most concentrated in Kanawha (7,882 participants), Monongalia (2,675), Harrison (1,758), and Raleigh (1,756) counties. All in all, sessions were well dispersed across the state.

Adherence to Board Standards for Professional Development

For the 2012-2013 PD Master Plan, the State Board adopted the Learning Forward standards for professional development. As a baseline measure of the extent to which providers have adopted those standards, we included questions in the providers' online reporting form based on each of the Learning Forward standards.

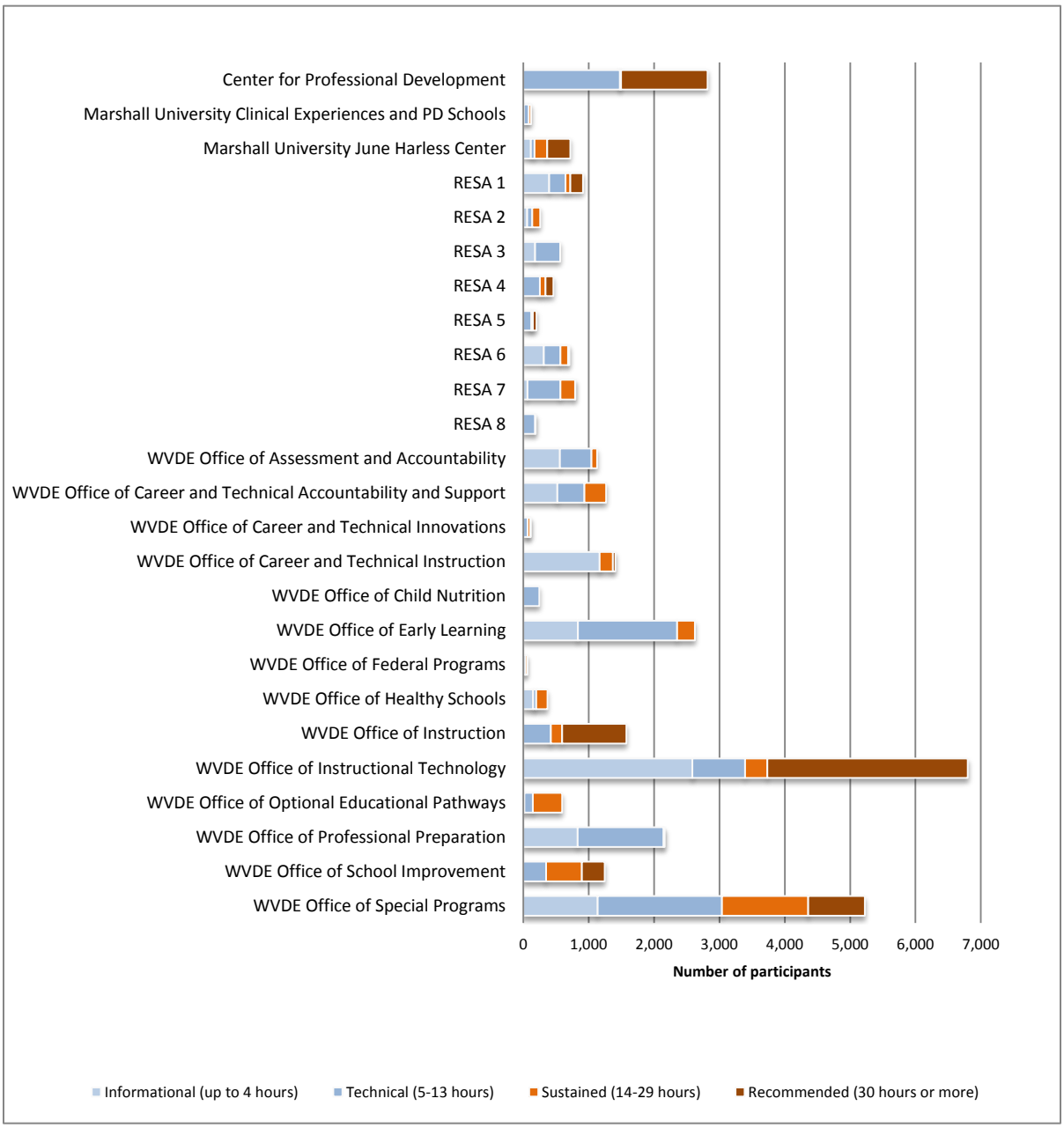

Figure 4. Number of Participants in Professional Development by Duration by Provider

Relatively large numbers of participants took part in professional development that included 14 or more contact hours, depicted here in orange and brown. The WVDE Office of Instructional Technology led in providing professional development at the recommended level of 30 hours or more to the greatest number of participants (more than 3,000). Still overall, the majority of participants (62%) attended professional development sessions lasting 13 hours or less (shown in blue). See Table 6 in the Appendix for details.

The Board calls for professional development experiences that meet the following standards:

1. Occurs within learning communities committed to continuous improvement, collective responsibility, and goal alignment.
2. Requires skillful leadership to develop capacity, advocate, and create support systems for profession learning.
3. Requires prioritizing, monitoring, and coordinating resources for educator learning.
4. Uses a variety of sources and types of student, educator, and system data to plan, assess, and evaluate professional learning.
5. Integrates theories, research, and models of human learning into learning designs to achieve its intended outcomes.
6. Applies research on change and sustains support for implementation of professional learning for long-term change.
7. Aligns its outcomes with educator performance and student curriculum standards.

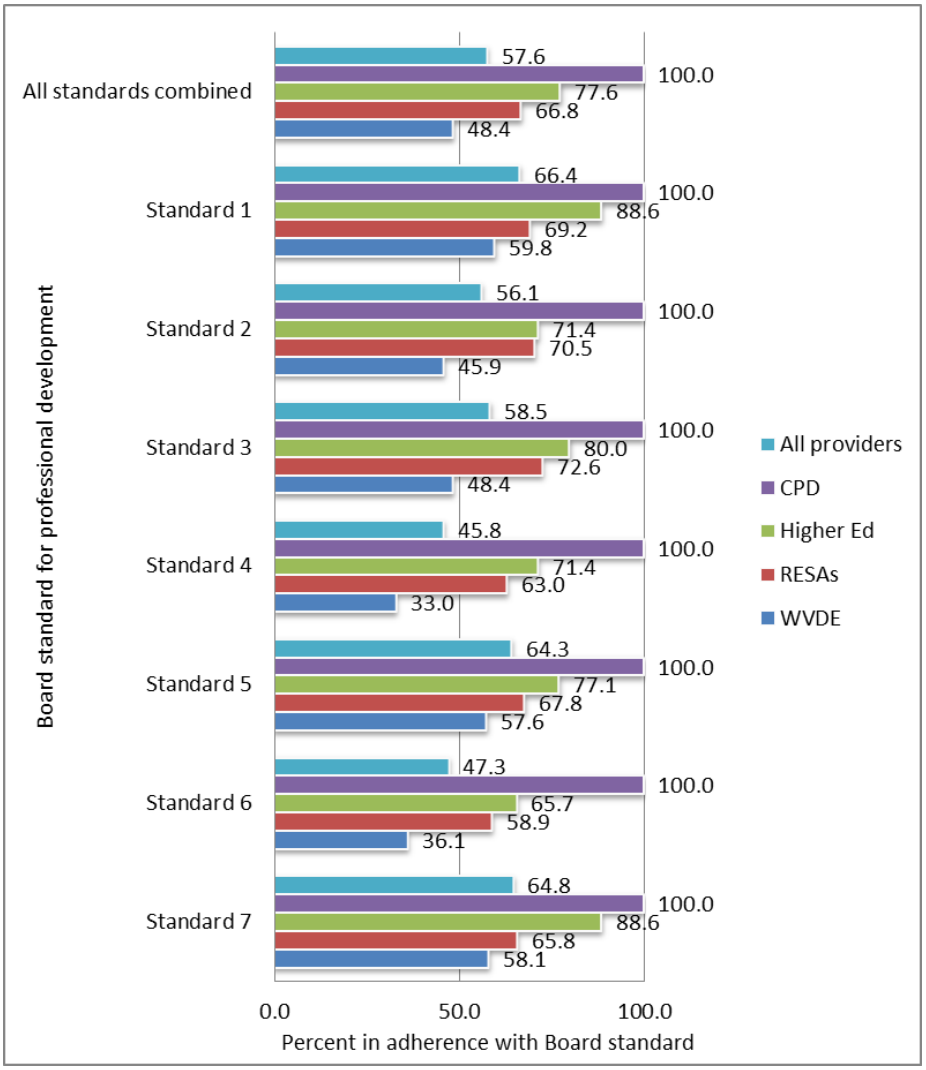

Figure 5. Adherence of Professional Development Sessions to Board Standards as Reported by Providers, by Provider Category

Overall, the West Virginia Department of Education (WVDE) reported the lowest level of adherence to Board standards followed in ascending order by the regional education service agencies (RESAs), institutions of higher education (Higher Ed), and the Center for Professional Development (CPD). CPD reported that all of their sessions met all seven standards.

Figure 5 displays the variation among provider categories, with WVDE reporting adherence to Board standards for a third to just over half of sessions. On the other hand, CPD reported that all of their sessions met all seven standards. The other provider groups, ranked between these two, with the higher education providers (i.e., two centers at Marshall University) reporting more frequent adherence to the standards than RESAs.

Overall, Standard 1 was most often cited as being met (66.4%), followed in descending order by Standard 7 (64.8%), Standard 5 (64.3%), Standard 3 (58.5%), Standard 2 (56.1%), Standard 6 (47.3%), and Standard 4 (45.8%).

For one last look at this implementation issue, Figure 6 displays the overall level of adherence to Board standards, as reported by each of the providers. There was much greater variation across providers than there was across the standards. A reminder is warranted here: These are self-reported data, and as such, may need to be confirmed in future evaluations with other measures—such as questions on the participant survey.

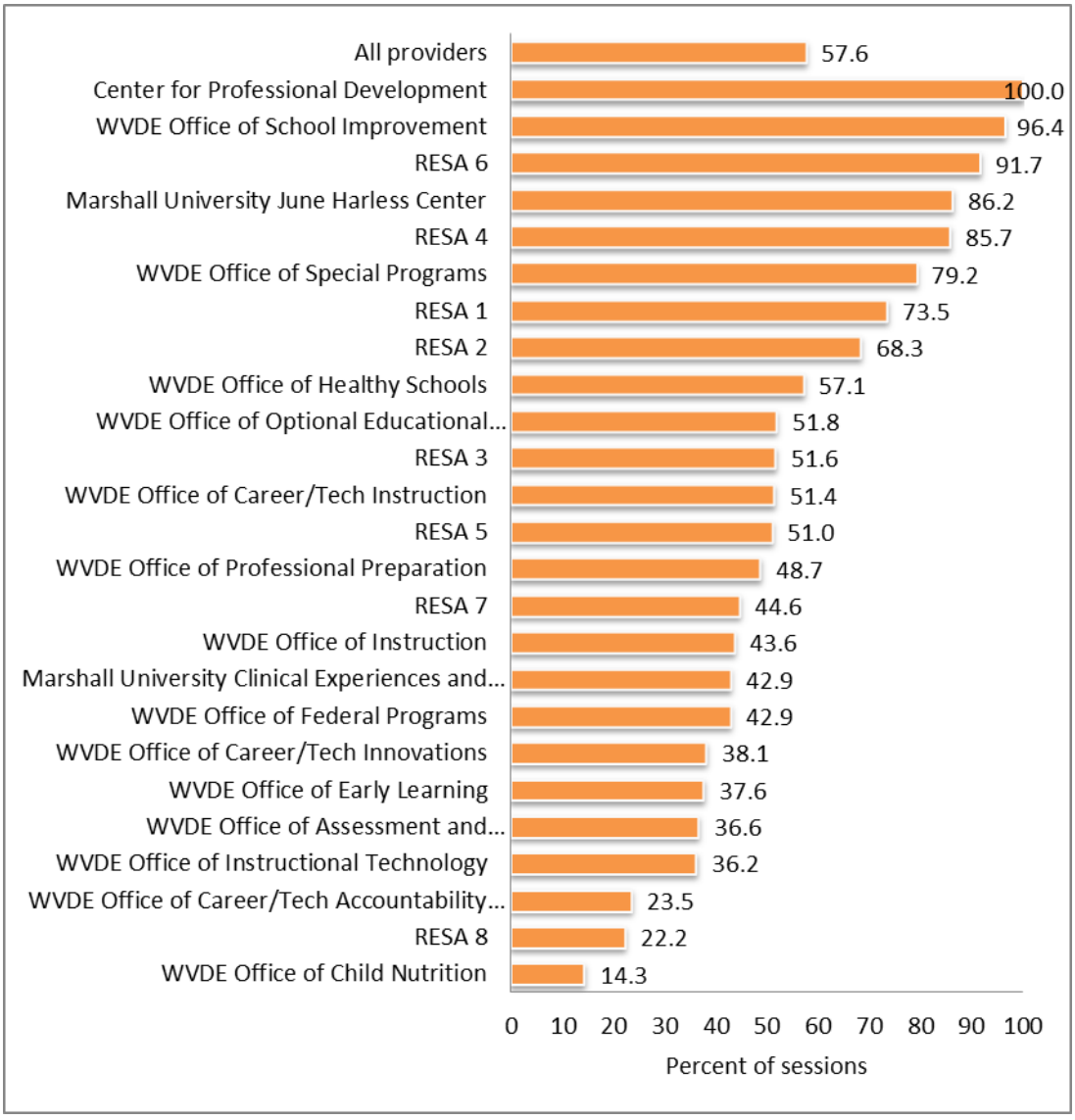

Figure 6. Adherence to Board Standards for Professional Development by Provider

Providers were asked to report for each session they conducted, which of the seven Board standards that session adhered to. Percentages of reported sessions were calculated for each of the standards, for each provider, and then a mean percent across all standards was calculated for each provider. Those are the values shown here.

Analysis of Participant Survey Responses

The remainder of the Results section is based on data collected via an online survey of PD participants who attended professional development sessions held from June 1, 2012 to March 31, 2013. The survey was conducted in two phases: late November through late December 2012, to cover professional development provided during the summer and early fall months, and mid-April through late May 2013 to cover professional development offered during late fall through March. Results here were aggregated from both data collection periods.

The survey random sample was made up of an unduplicated list of 9,129 participants, who were asked about one professional development event they attended (see Table 1, page 4, for details about the breakdown of the sample by provider and provider category). Of this sample, 619 were eliminated due to attrition (including bad e-mail addresses, and individuals who contacted us to report that they did not attend the event we asked them about or they attended as a facilitator or in some other nonparticipant capacity). After adjusting for attrition, the viable sample was reduced to 8,510; of these, we received responses from 6,360. After removing unusable responses, the dataset was reduced to 5,992 responses. This number represents a response rate of 65.6% for the full sample, or 70.4% for the sample adjusted for attrition.

Demographic characteristics of survey respondents .

Frequency analyses revealed characteristics of the respondents with respect to key demographic variables.

All PK–12 programmatic levels were well represented among the respondents to the survey (Figure 7).

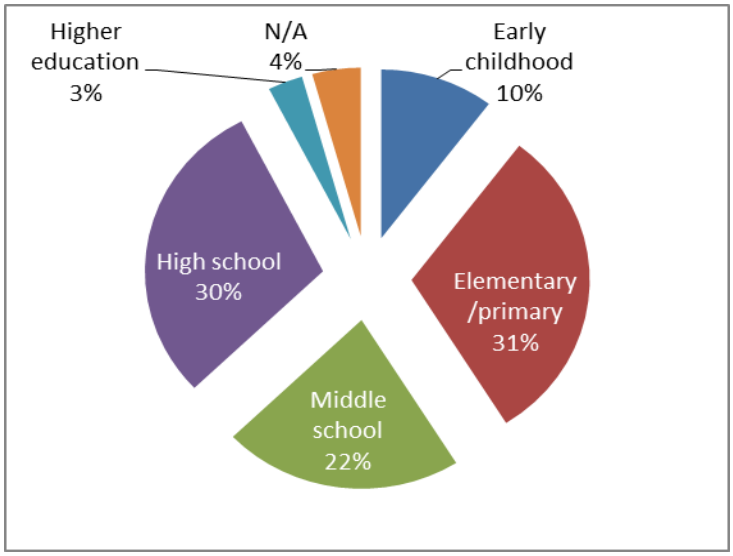

Figure 7. Percent of Respondents at Each Programmatic Level

Over half of the survey respondents (59%) were classroom or special education teachers, with administrators (including district central office staff and principals) coming in second (19%). The rest of the respondents occupied a variety of roles, as shown in Table 9 (page 34).

All 57 school districts (including Institutional Education Programs and the West Virginia Schools for the Deaf and the Blind) were represented among the respondents, as well as individuals from institutions of higher education, RESAs, the WVDE, and others, including about 2 dozen from out of state (Table 10, page 35 in the Appendix).

Adherence to research-based practices

Prior to the Board's adoption of the Learning Forward standards—which, among other things, outline roles, responsibilities, and contextual issues important when conducting professional development—this evaluation has focused on design elements of individual professional development sessions. We have referred to these elements as *research-based practices for high quality professional development* (see box). Survey respondents were asked to respond to seven items about the extent to which the professional development event they attended adhered to these practices. Respondents were instructed to respond to each statement using a 5-point Likert-type response format, that is, 1 (*strongly disagree*), 2 (*disagree*), 3 (*neutral*), 4 (*agree*), 5 (*strongly agree*). Before examining the results, it should be noted that the response format used for these items is most easily interpreted by examining the rate of agreement (i.e., agree or strongly agree) among respondents that the seven research-based practices were present, versus responses indicating disagreement (i.e., disagree or strongly disagree) or neutrality about the issue. Additionally we calculated a mean rate of agreement across the seven quality indicators to get an overall quality measure. For full results by individual indicator and provider, see Table 11 in the Appendix (page 36).

Research-Based Practices for High Quality Professional Development

- Was intensive in nature.
- Included adequate opportunities to practice new skills and receive feedback.
- Was adequately focused on core content knowledge.
- Was adequately tied to school and district goals for student learning.
- Included adequate opportunities for collaboration.
- Included adequate embedded follow-up and continuous feedback.
- Was beneficial and had a positive impact on our students and/or school, overall.

Looking at provider groups, overall, the Center for Professional Development received the highest levels of agreement (80.9%) that their sessions possessed research-based practices for high-quality professional development (Figure 8), followed closely by the other provider groups, which each received this endorsement from more than three quarters of respondents. In contrast with the analysis of adherence to Board standards, these ratings were received from representative samples of *participants*, not the *providers* themselves. Once again, there was a wide range of agreement when looking at individual providers, although only about a third of providers fell below the 75% level of agreement.

Our final disaggregation compared the ratings for sessions of different duration, including *informational* (up to 4 hours), *technical training* (5 to 13 hours), and *sustained professional development* (14 or more hours). Figure 9 (page 18) and Table 12 (page 37) show the results of these analyses. Overall, sustained professional development sessions received higher rates of agreement about their adherence to research-based practices (79.0%) than either informational or technical training sessions, which were nearly the same at 71.6% and 71.5% respectively. Practices for which sustained professional development sessions received notably higher ratings than the other two formats included *intensive, skill practice and feedback, content focused, opportunities for collaboration,* and *embedded follow-up and feedback.*

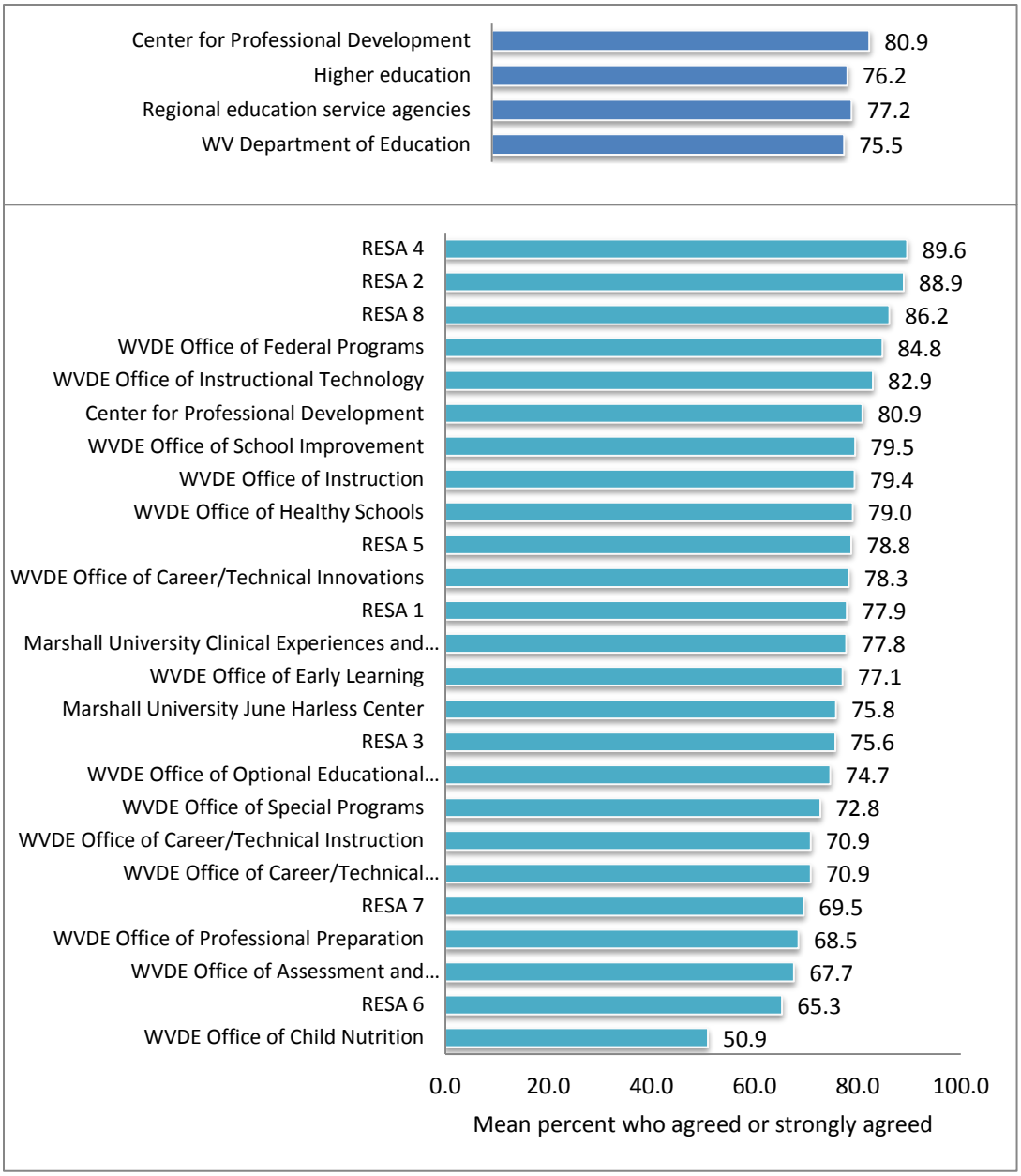

Figure 8. *Mean Percentage of Respondents Who Agreed or Strongly Agreed That the Session They Attended Used Research-Based Practices for High Quality Professional Development by Provider Group and Individual Provider*

Survey participants were asked to indicate the extent to which they agreed with statements that the professional development was intensive, had active learning, was content focused, was aligned to school goals, included collaboration, had embedded follow-up, and was beneficial overall. The bars in this graph show the aggregated rate of agreement across these seven measures, for provider groups and individual providers.

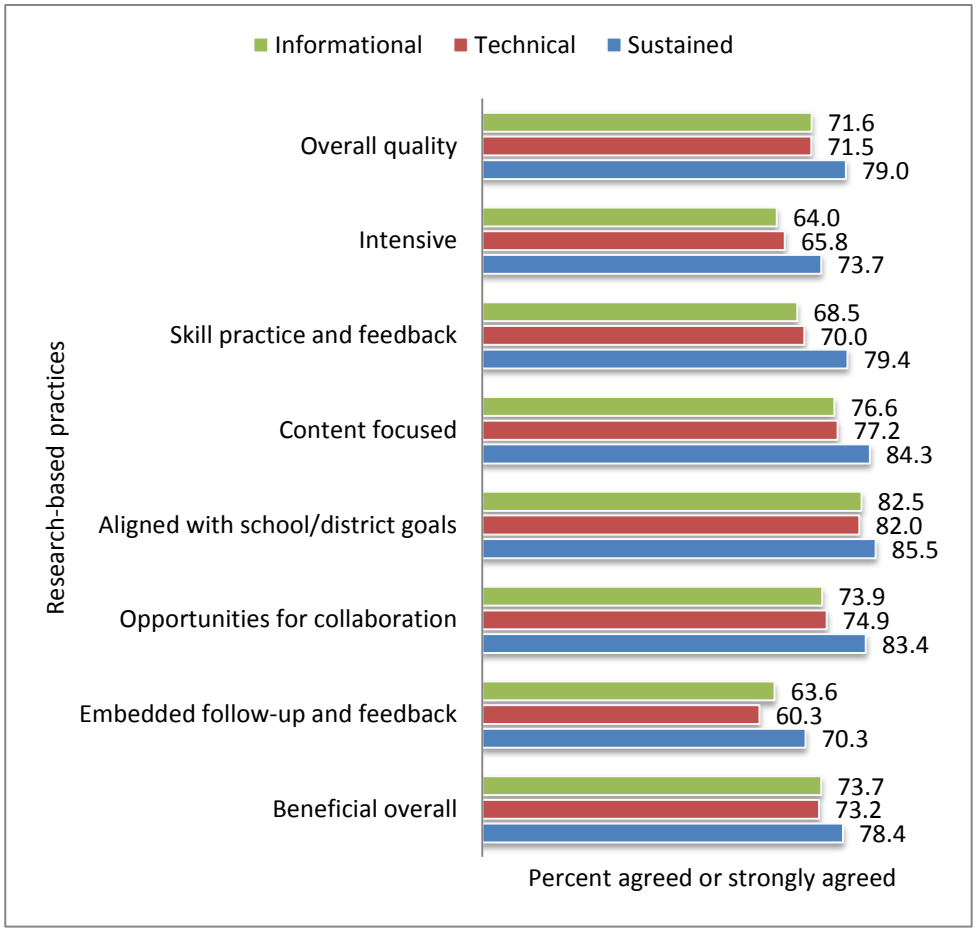

Figure 9. Mean Percentage of Respondents Who Agreed or Strongly Agreed That the Session They Attended Used Research-Based Practices for High Quality Professional Development by Duration of Session

The bars in this graph show the aggregated rate of agreement across these seven measures for research-based practice, for different durations of sessions: informational (up to 4 hours), technical training (5 to 13 hours), and sustained professional development (14 or more hours).

In a separate analysis, we calculated the mean score across the seven indicators, using the 5-point Likert-type response format, that is, 1 (*strongly disagree*), 2 (*disagree*), 3 (*neutral*), 4 (*agree*), 5, to derive a Quality Index score that could give us a sense of the overall quality, and compared this score to the previous two years. This analysis showed no gain in quality since 2011-2012, with a score of 3.9 both years; there was only a slight gain compared with 2010-2011, which saw a score of 3.8.

Perceived effectiveness in meeting Board goals for professional development

Each professional development session included in the 2012–2013 PD Master Plan was determined by providers to be aligned primarily to one of the Board's three goals for professional development; therefore, we sought to determine the extent to which each of the participant's professional development experience had helped them to realize the goal area aligned with the session each one attended.

We used descriptive statistical analyses to examine responses for all events associated with each goal area. First we disaggregated responses into four datasets:

- One associated with sessions aligned to Goal 1 (i.e., "Aligns with curriculum standards to increase educator effectiveness in the [content areas]);
- two associated with Goal 2 (i.e., [2A] "Focuses on developing in-depth understanding of the essential features of the growth and development of the personal, physical, social, and emotional needs of each student," and [2B] "Providing students with personalized pathways and guidance to help them have productive and satisfying lives."); and
- one associated with Goal 3 (i.e., "Develops the leadership competencies, professional culture, and characteristics necessary to increase the support of teaching and learning").

We then analyzed participants' responses for each goal area independently. Respondents were instructed to respond to statements about the professional development using a 5-point Likert-type response format as follows: 1 (*strongly disagree*), 2 (*disagree*), 3 (*neutral*), 4 (*agree*), 5 (*strongly agree*). A sixth category, *not applicable*, was included, and tallied along with the other responses as an indication of the lack of alignment with the goal in question—that is, if the respondent considered the goal in question as not applicable to the session he or she attended, we counted this response as a lack of agreement that the session was helpful in meeting the goal. The full results for each of the providers appear in Table 13 in the Appendix (page 38), organized by goal. A breakdown by provider group and overall is found in Figure 10.

For Goal 1, RESAs were the provider group that received the highest rate of agreement among participants that the session attended had been helpful, followed closely by CPD. Among individual providers the top quartile, with a median of 95.9%, included in descending order RESAs 2, 7, 4, and 8; while the bottom quartile (median 61.6%) included in descending order RESA 5, the WVDE Office of Assessment and Accountability, the WVDE Office of Career and Technical Accountability and Support, and RESA 6 (See Table 13 in the Appendix, page 38).

For both parts of Goal 2 (A and B), the IHEs (Marshall University) had the highest rate of agreement among the provider groups that the session attended had been helpful. Among individual providers the top quartile (median 86.6%) for Goal 2A included in descending order RESA 4, RESA 5, Marshall University June Harless Center, and the WVDE Office of Healthy Schools; the bottom quartile (median 50.6%) in descending order were WVDE Office of Career/Technical Accountability and Support, RESA 3, WVDE Office of Child Nutrition, and WVDE Office of Early Learning. (See Table 13 in the Appendix, page 38)

Among individual providers for Goal 2B, the top quartile (median 85.4%) included in descending order, RESA 4, Marshall University June Harless Center, WVDE Office of Instructional Technology, and the WVDE Office of Healthy Schools; the bottom quartile (median 51.9%) in descending order included RESA 8, RESA 7, WVDE Office of Early Learning, and the WVDE Office of Child Nutrition (See Table 13 in the Appendix, page 38).

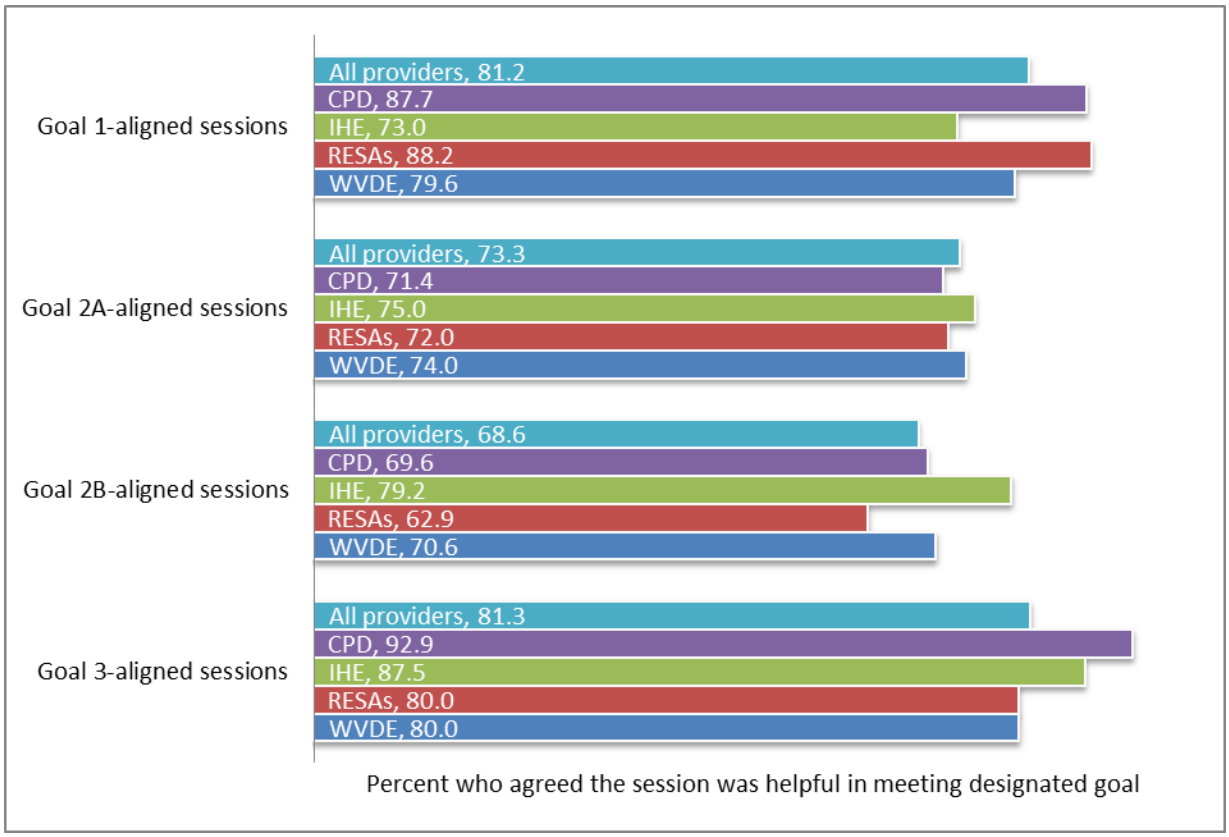

Figure 10. Participant Perceptions About Helpfulness of Session in Meeting Designated Board Goals
Overall greater percentages of participants—more than 80%—agreed the sessions they attended were helpful with regard to Goals 1 and 3 than with either part of Goal 2. Yet, even for Goal 2 more than two thirds agreed.

Finally, for Goal 3, CPD had the highest rate of agreement among provider groups. Among individual providers the top quartile (median 92.3%) included in descending order CPD, RESA 2, and Marshal University Clinical Experiences and PD Schools; the bottom quartile (median 73.9%) in descending order were WVDE Office of Special Programs, RESA 1, and the WVDE Office of Instructional Technology (See Table 13 in the Appendix, page 38).

With an overall agreement rate of 76.1%, 2012-2013 exceeded the previous two years (i.e., 2010-2011, 67.8% and 2011-2012, 51.2%) with regard to participants' recognition that the professional development was helpful in meeting Board goals.

Perceived impact of professional development

The survey contained three pairs of items that asked respondents to use a 4-point Likert-type scale (1 [*not at all*], 2 [*to a small extent*], 3 [*to a moderate extent*], 4 [*to a great extent*]), to rate the extent to which they agreed with statements about themselves both before and after having participated in the professional development session they attended, as follows:

Pair 1. Before participating in this PD, to what extent were you knowledgeable about the topic it covered?

After participating in this PD, to what extent are you knowledgeable about the topic it covered?

Pair 2. Before participating in this PD, to what extent did you practice behaviors or skills it taught?

After participating in this PD, to what extent do you practice behaviors or skills it taught?

Pair 3. Before participating in this PD, to what extent did you hold attitudes/beliefs it encouraged?

After participating in this PD, to what extent do you hold attitudes/beliefs it encouraged?

A fifth response category was included, but only used to allow respondents to indicate the item was *not applicable* to them. These responses were not used when calculating mean scores.

We used a retrospective pretest/posttest design to assess the extent to which survey respondents perceived a change in their own knowledge, behaviors, and beliefs and attitudes as a result of participating in professional development. A series of paired-samples *t* tests were conducted using respondents' pre- and post-ratings. These analyses tested for statistically significant differences between respondents' pre- and post-ratings, with time as the independent variable. When statistically significant differences were found (i.e., $p < .05$), it is reasonable to say that the difference observed between participants' pre- and posttest results are not likely to be due to chance. That is, there is some systematic reason underlying the difference. This analysis does not allow one to infer a cause for the difference. It merely describes the presence of a significant difference.

One limitation of significance testing is that it tells us very little about the magnitude of any observed differences. We detect a difference, but cannot tell from the *t* test if the difference is meaningful in a practical sense. Calculating an *effect size* is one way to explain the magnitude of any statistically significant differences. In this study, we used Cohen's *d* as a measure of effect size. This statistic is commonly used in simple pretest/posttest designs, although its interpretation is often debated in social sciences (see the Limitations of the Study section, page 27, for more about this debate). The guidelines we used for interpreting the meaning of the effect sizes in this study are found in Table 3. Paired-samples *t* tests were conducted for three impact items: (1) knowledge about the topic of professional development, (2) use of behaviors and skills related to the topic, and (3) presence of attitudes/beliefs advocated by the professional development.

Table 3. Interpretation of Effect Size Estimates Used in this Study

Value for Cohen's d	Interpretation
Less than .4	Small effect
.4 to .7	Moderate effect
.8 or 1.1	Large effect
1.2 and above	Very large effect

Aggregated mean presession scores hovered around *3*, indicating that participants, overall, thought they had a moderate level of knowledge, skill, and attitude/belief prior to engaging in the session. They assessed themselves at the midpoint between moderate and great levels after the session, indicating that participants, overall thought they had grown professionally as a result of the experience.

Significance testing revealed that the results were significant at the $p < .05$ level for all but one of the 90 tests we ran—and the great majority of those tests were statistically significant at the $p < .001$ level (see Table 14 in the Appendix, page 40).[4]

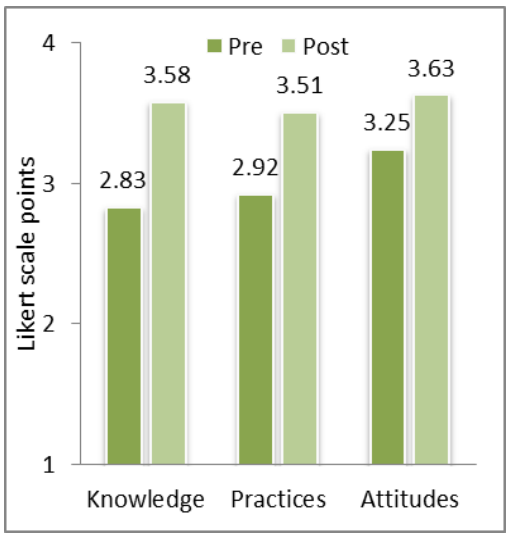

Figure 11. Mean Perceived Impact of Professional Development, Pre-/Postsession, Total Sample

Scale points ranged from *1* (not at all), *2* (to a small extent), *3* (to a moderate extent), and *4* (to a great extent).

Aggregating all results, respondents perceived a very large impact on the extent of their knowledge as a result of attending the session, with a large impact on their practice and moderate impact on their attitudes and beliefs (Figure 12). Similarly, across the provider groups, respondents registered very large impacts on knowledge, with large impacts on their practices for all but the WVDE, which missed that threshold by .1 to .2 points, placing it in the moderate impacts category. Respondents registered similar moderate change in their attitudes and beliefs, regardless of which provider group's session they attended.

Figure 13 displays the range of effects for individual providers, which generally follow the pattern described above, with larger effects for knowledge, more moderate effects for practice, and the smallest effects for attitudes and beliefs.

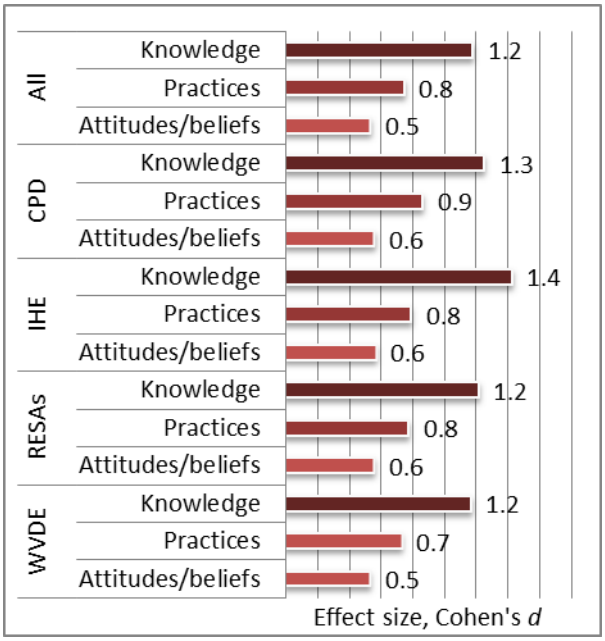

Figure 12. Perceived Impact of Professional Development (Pre-/Postsession), Effect Size, by Individual Provider

Dark brown indicates a very large effect, dark red a large effect, and medium red a moderate effect.

[4] Only the attitudes test for the WVDE Office of Child Nutrition registered a lack of statistical significance, with $p = .211$; however these participants entered the training with relatively high attitude scores, so the small amount of change may not be of any practical significance, either.

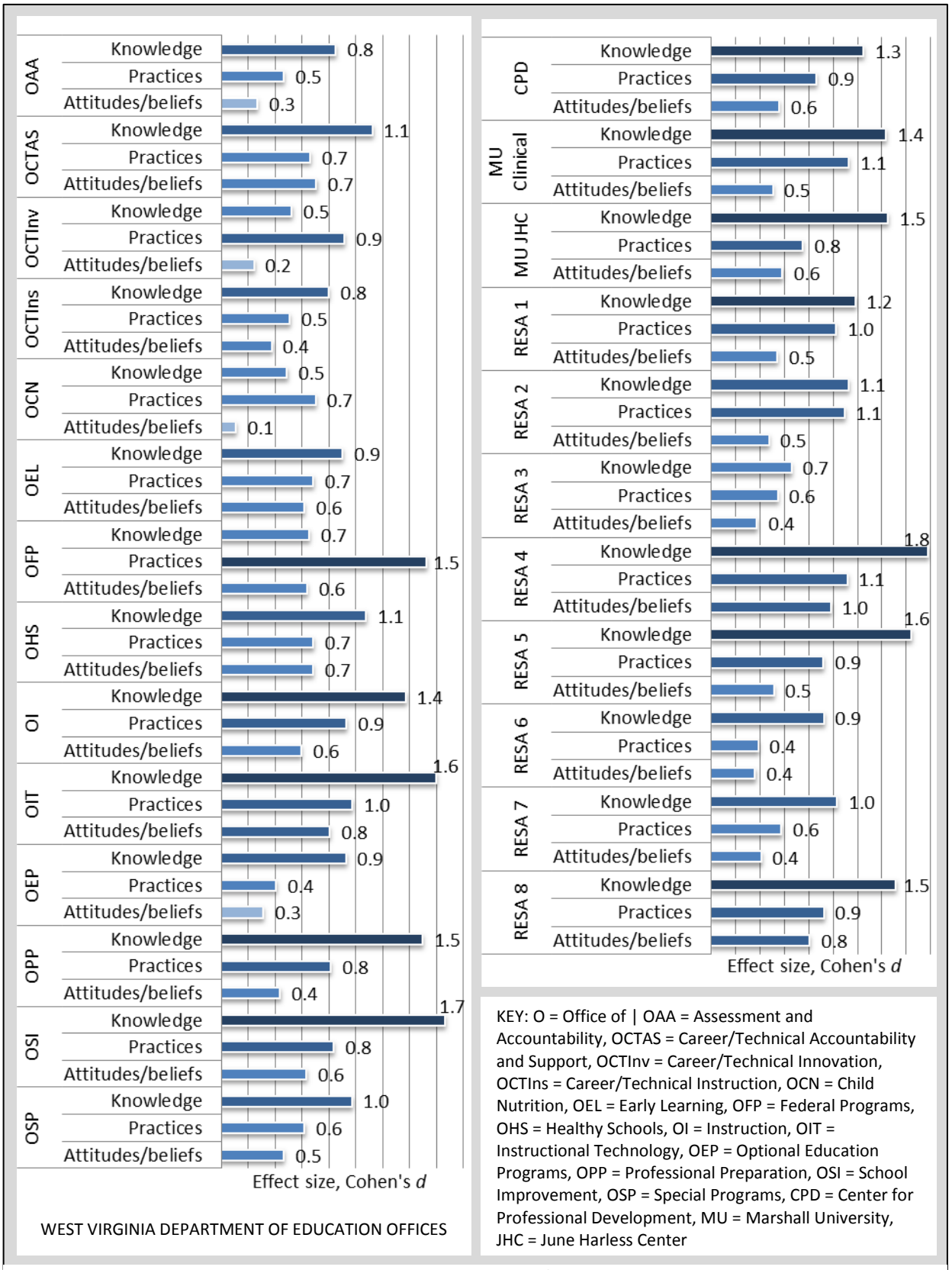

Figure 13. Perceived Impact of Professional Development (Pre-/Postsession), Effect Size, by Individual Provider
Light blue indicates small effects; medium blue, moderate effects, dark blue, large effects, dark navy blue, very large effects.

In one last, disaggregation, we compared impacts by duration of the training, that is, informational sessions lasting up to 4 hours, versus technical training lasting from 4 to 13 hours, or sustained professional development lasting 14 or more hours (Figure 14). As one would expect, the size of the effect reported for all three measures (i.e., knowledge, practices, and attitudes/beliefs) was proportionate to the amount of contact time. Informational sessions registered the smallest effects followed by technical training, with largest effects reported for sustained professional development.

Looking back at the past three years of this measure, Figure 15, shows only a slight gain for perceived impacts on knowledge, and slight decreases for impacts on practice and attitudes/beliefs.

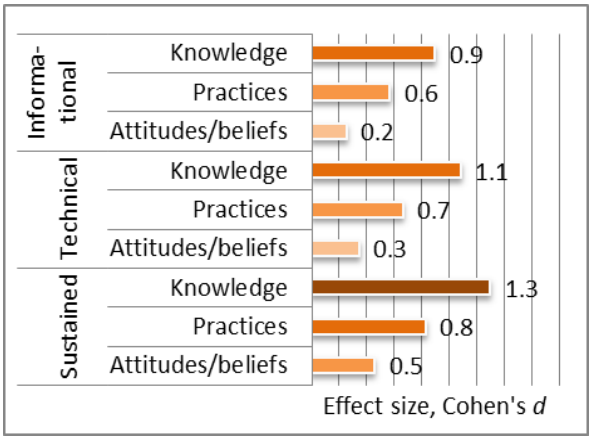

Figure 14. Perceived Impact of Professional Development (Pre-/Postsession), Effect Size, by Individual Provider

Light orange indicates a small effect; medium orange, a moderate effect; orange, a large effect; and dark rust, a very large effect.

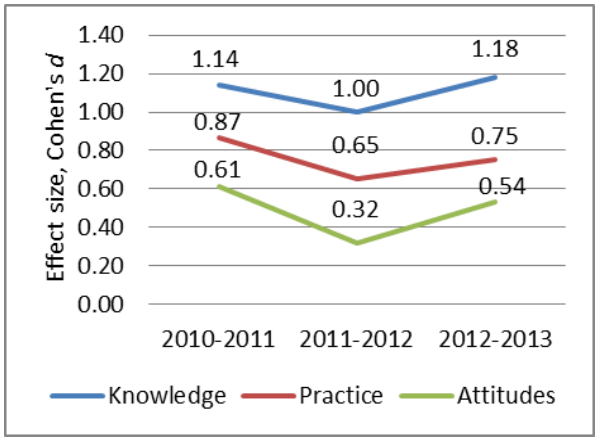

Figure 15. Trends in Perceived Impacts, 2010-2011 through 2012-2013

Using Cohen's *d,* effect sizes have been calculated for the total group of respondents to the Participant Survey for the past three years. Results show little overall movement during this period.

Discussion

In this evaluation, as in previous years, we examined four main aspects of the implementation of the West Virginia Board of Education's Master Plan for Statewide Professional Development: (a) basic information reported by providers about the size and scope of the effort, including attendance, and adherence to the newly adopted standards for professional development; and participant reports about the (b) quality of the sessions, (c) their alignment to Board goals for professional development, and (d) the impacts of the sessions on participants' knowledge, practice, and attitudes and beliefs. Each of these four areas are discussed below, including trends noted over the three years that the WVDE Office of Research has conducted this evaluation.

With regard to basic issues of implementation, by far the most notable trend was the decrease in participation in the PD Master Plan by the RESAs during this period. Before providing details about this decline it should be noted that this trend was reversed in the 2013-2014 PD Master Plan (an evaluation of which is currently underway), making 2012-

2013 a low point. This shift will be covered in subsequent evaluation reports; however for the 3-year time period from 2010-2011 through 2012-2013,

- the Center for Professional Development (CPD) increased its slate of sessions more than fivefold;
- institutions of higher education (IHEs) with teacher preparation programs held steady at a very low level of participation with only one (Marshall University) of 12 participating;
- the WVDE more than doubled its participation; and
- the RESAs reduced their collective contribution to the PD Master Plan by about two thirds.

As for attendance in professional development sessions offered by the four provider groups required to participate, the WVDE was responsible for more than three quarters of all participants in PD Master Plan sessions in 2012-2013.

RESA directors indicated on multiple occasions following the publication of the 2010-2011 evaluation report that one insurmountable impediment to their participation was the schedule they were required to follow in submitting their lists of sessions for inclusion in the plan. They argued that because they must provide PD in response to the strategic plans of the districts they serve (submitted in early fall), they could not predict at the time the PD Master Plan was being developed, what PD they would need to offer. For this reason, the Board allowed all providers to update their plans in late fall, beginning in 2012. Marshall University and seven WVDE offices took this opportunity to add sessions to their plans; none of the RESAs did.

In 2013-2014, however, RESAs seem to have changed their approach to the PD Master Plan. In that plan the RESAs vary in their number of offerings from a low of two sessions (RESA 8) to a high of 49 (RESA 1). The higher numbers of offerings by most RESAs more closely reflect their reports for professional development in their annual reports. This is a situation that will need continued monitoring, as RESAs take a larger role in providing professional development, and as the State Board works to develop a more coherent statewide system for professional learning.

Other notable implementation trends include the fact that nearly 7,400 educators in the state participated in sessions of 30 hours or more duration, which is the minimum that recent reviews of the research identify as producing changes in teacher practice and/or student performance. Of the sessions offered during the reporting period, about a third were brief, informational sessions, another third were half-day to slightly less that two-day technical training sessions and the remaining third were sessions two or more days duration.

This was the first year that providers were asked to report how aligned their offerings were with the new Board standards for professional development, which are an adaptation of the Learning Forward standards. Overall, there was less than a 60% level of compliance with the standards. The Center for Professional Development reported 100% compliance for all standards for all sessions, while Marshall University reported a rate of compliance at about 78%, followed by the RESAs at 67% and WVDE at 48%. By their own self-reports WV

providers, overall, are strongest with regard to the following Board professional learning standards, with which they reported about two-thirds of their sessions aligned:

1. Occurs within learning communities committed to continuous improvement, collective responsibility, and goal alignment.
5. Integrates theories, research, and models of human learning into learning designs to achieve its intended outcomes.
7. Aligns its outcomes with educator performance and student curriculum standards.

Weakest alignment (less than half of reported sessions) with the Board professional learning standards was for the following:

4. Uses a variety of sources and types of student, educator, and system data to plan, assess, and evaluate professional learning.
6. Applies research on change and sustains support for implementation of professional learning for long-term change.

There seemed to be some confirmation in the participant survey responses for the lack of alignment with Standard 6; only two thirds of participants agreed or strongly agreed that the professional development session they attended had included "adequate embedded follow-up and continuous feedback." In other words, ongoing follow-up to help them succeed in their implementation was lacking in a third of participants' experiences.

The standards are new for state providers, and although they were included in information that went out to providers during the time the PD Master Plan was developed, it is unclear how aware of them most providers are. Data about the Board standards in this report should be considered baseline, and we will follow trends regarding providers' alignment with them in upcoming evaluation studies. Further, relying primarily on provider self-reports to measure alignment with Board standards for professional development is a limitation that should be noted.

Turning now to perceived quality, alignment with Board goals, and impacts, we note the following trends:

- This analysis showed no overall gain in quality since 2011-2012, with a score of 3.9 on a 5-point scale both years; there was only a slight gain compared with 2010-2011, which saw a score of 3.8.
- With regard to participants' recognition that the professional development was helpful in meeting Board goals for professional development, the overall agreement rate of 76.1%,exceeded the previous two years (i.e., 2010-2011, 67.8% and 2011-2012, 51.2%) There may be three factors at work in the relative high rate experienced this year: (a) providers were guided to a greater degree than previous years by the Board goals as they planned their sessions; (b) the goals were written more broadly, so it was easier for participants to see the connections; and/or (c) providers were required to select only one goal as aligned to the offerings in the PD Master Plan and were, therefore, less likely to select multiple, less closely tied goals for individual offerings.
- Although effect sizes ranged from moderate to very large, there was only a slight gain for perceived impacts on knowledge, and slight decreases for impacts on practice and attitudes/beliefs.

Taken together, these results show general satisfaction with the professional development participants experienced, but do not show much movement in improving the quality and impact. Further, the notable improvement in alignment with Board goals may have more to do with the goals themselves than with providers' efforts to align their offerings.

Limitations of the Study

The participant survey conducted in November-December 2012 and April-May 2013 asked respondents to recall PD sessions they had participated in at some point in the past. In some cases, the sessions had taken place up to five months prior to the survey. For this reason, there is a possibility of temporal bias in survey participants' responses.

Furthermore, the use of a retrospective pretest/posttest methodology to assess changes in knowledge, behavior and skills, and attitudes and beliefs poses some concerns. We used this methodology primarily because some researchers have argued that a phenomenon called *response shift bias* can occur when conducting traditional pretest/posttest designs. Response-shift bias "occurs when a participant uses a different internal understanding of the construct being measured to complete the pretest and posttest" (Moore & Tananis, 2009, p. 190). Consider this in context of professional development. Some respondents begin their involvement in professional development with a misconception that they are already well-versed in the content to be covered. When given a pretest, they rate their own knowledge, behavior and skills, and attitudes and beliefs very positively. However, over the course of the professional development, as they develop a deeper understanding of the content being covered, they realize they did not know as much as they originally thought. As such, when presented with the posttest, their frame of reference has shifted and they could potentially rate their knowledge, behavior and skills, and attitudes and beliefs lower than they did on the pretest. This can lead to problems in analyzing the impact of the professional development. For this reason, some researchers advocate for using retrospective pretest/posttest designs as we did in this study.

Despite this strength of the retrospective pretest/posttest design, a recent research study conducted by Nimon, Zigarmi, and Allen (2011) found that using traditional pretest/posttest designs leads to less biased estimates of program effectiveness. The authors present a compelling case that presenting both pre- and posttest items simultaneously on a single survey is among the most biased design options available to researchers and can significantly inflate effect size estimates. The authors recommend traditional pretest/posttest designs when possible and advocate for the implementation of a separate retrospective pretest to allow researchers to determine the presence of any response-shift bias. This design option, despite its strength, was not feasible in this study due to a mismatch between the scale of professional development offerings in the state and available evaluation staffing resources. Therefore, we recommend cautious interpretation of our own estimates of effect size, as they may be somewhat inflated.

Recommendations

As this report is written, the West Virginia Board of Education has engaged the National Commission on Teaching and America's Future to lead an effort to overhaul the state's approach to professional development. Recommendations in previous evaluations of the Board's Master Plan for Statewide Professional Development will likely be addressed in the course of this overhaul. In the meantime we offer the following recommendations:

- Find ways to increase the participation of institutions of higher education with teacher preparation programs from the current one IHE (Marshall University) to the full 12 IHEs that should be a part of it.
- Consider developing goals for professional development with a longer view, commit to those goals for a sustained period of time and publicize them broadly, so that those planning for and providing professional development at all levels will be fully aware of them and willing to align their efforts to form a more coherent statewide approach.
- Provide information about the Board standards for professional learning to all professional development providers working in the state, and develop training and incentives that will compel providers to craft their offerings to meet those standards.

References

Blank, R. K., de las Alas, N. and Smith, C. 2008. *Does teacher professional development have effects on teaching and learning? Analysis of evaluation finding from programs for mathematics and science teachers in 14 states*. Washington, D.C.: Council of Chief State School Officers. Retrieved from http://www.ccsso.org/Documents/2008/Does_Teacher_Professional_Development_2008.pdf.

Clewell, B. C., Campbell, P. B., and Perlman, L. (2004). *Review of evaluation studies of mathematics and science curricula and professional development models*. Submitted to the GE Foundation. Creating the Context and Employing Best Practices for Teacher Professional Development. Washington, DC: The Urban Institute. Retrieved from http://www.urban.org/UploadedPDF/411149.pdf.

Yoon, K. S., Duncan, T., Lee, S. W.-Y., Scarloss, B., & Shapley, K. (2007). Reviewing the evidence on how teacher professional development affects student achievement (Issues & Answers Report, REL 2007–No. 033). Washington, DC: U.S. Department of Education, Institute of Education Sciences, National Center for Education Evaluation and Regional Assistance, Regional Educational Laboratory Southwest. Retrieved from http://ies.ed.gov/ncee/edlabs.

Appendix A. Tables

Table 4. Provision of Professional Development Included in the PD Master Plan and Attendance, by Provider

Provider	PD planned	PD provided	PD not provided*	Percent of planned PD provided	Individual sessions reported	Attendance all sessions
All providers	383	311	68	81.2	1,018	32,582
Center for Professional Development	57	52	5	91.2	110	2,818
Marshall Univ. Clinical Experiences and PD Schools	9	5	4	55.6	7	120
Marshall Univ. June Harless Center	17	17		100.0	28	719
RESA 1	3	3		100.0	41	912
RESA 2	3	3		100.0	9	259
RESA 3	3	3		100.0	13	566
RESA 4	3	3		100.0	19	460
RESA 5	3	3		100.0	7	200
RESA 6	3	3		100.0	24	708
RESA 7	3	3		100.0	24	798
RESA 8	3	3		100.0	9	187
WVDE Office of Assessment and Accountability	29	16	9	55.2	59	1,130
WVDE Office of Career and Technical Accountability and Support	14	9	5	64.3	31	1,268
WVDE Office of Career and Technical Innovations	3	3		100.0	3	115
WVDE Office of Career and Technical Instruction	58	43	15	74.1	74	1,587
WVDE Office of Child Nutrition	1	1		100.0	1	70
WVDE Office of Early Learning	10	10		100.0	49	2,624
WVDE Office of Federal Programs	9	1	8	11.1	6	62
WVDE Office of Healthy Schools	3	3		100.0	5	369
WVDE Office of Instruction	14	12	2	85.7	38	1,577
WVDE Office of Instructional Technology	85	74	11	87.1	270	6,802
WVDE Office of Optional Educational Pathways	9	5	4	55.6	8	596
WVDE Office of Professional Preparation	5	5		100.0	27	2,166
WVDE Office of School Improvement	6	5	1	83.3	24	1,244
WVDE Office of Special Programs	30	26	4	86.7	132	5,225

*PD was considered "not provided" if there were no reports submitted under an individual session title.

Table 5. Timespan and Duration of Professional Development Sessions Offered by PD Master Plan Providers

Organization:	Avg. time-span (days)	Avg. dura-tion (hours)	Total sessions N	Informa-tional (up to 4 hours)		Technical (5-13 hours)		Sustained (14-29 hours)		Recom-mended (30 hours or more)	
				N	%	N	%	N	%	N	%
All providers	21.3	16.2	1,018	335	32.9	353	34.7	92	9.0	238	23.4
Center for Professional Development	23.9	20.2	110	0	0.0	55	50.0	2	1.8	53	**48.2**
Marshall Univ. Clinical Experiences and PD Schools	146.3	11.1	7	1	14.3	4	57.1	2	28.6	0	0.0
Marshall Univ. June Harless Center	103.1	36.0	28	7	25.0	4	14.3	6	21.4	11	39.3
RESA 1	14.7	9.3	41	23	56.1	10	24.4	3	7.3	5	12.2
RESA 2	1.3	8.2	9	3	33.3	3	33.3	3	33.3	0	0.0
RESA 3	1.2	4.8	13	9	69.2	4	30.8	0	0.0	0	0.0
RESA 4	127.5	23.6	19	0	0.0	6	31.6	6	31.6	7	36.8
RESA 5	45.1	29.7	7	0	0.0	3	42.9	1	14.3	3	42.9
RESA 6	1.8	6.5	24	15	62.5	6	25.0	2	8.3	1	4.2
RESA 7	10.5	9.2	24	6	25.0	12	50.0	5	20.8	1	4.2
RESA 8	14.6	10.9	9	0	0.0	8	88.9	0	0.0	1	11.1
WVDE Office of Assessment and Accountability	1.0	4.9	59	32	54.2	25	42.4	2	3.4	0	0.0
WVDE Office of Career and Technical Accountability	1.4	6.9	31	14	45.2	11	35.5	6	19.4	0	0.0
WVDE Office of Career and Technical Innovations	6.0	38.3	3	0	0.0	1	33.3	1	33.3	1	33.3
WVDE Office of Career and Technical Instruction	6.0	6.1	74	53	71.6	9	12.2	10	13.5	2	2.7
WVDE Office of Child Nutrition	1.0	6.0	1	0	0.0	1	100.0	0	0.0	0	0.0
WVDE Office of Early Learning	11.9	5.3	49	18	36.7	28	57.1	3	6.1	0	0.0
WVDE Office of Federal Programs	1.3	4.8	6	5	83.3	0	0.0	1	16.7	0	0.0
WVDE Office of Healthy Schools	2.2	13.8	5	1	20.0	2	40.0	2	40.0	0	0.0
WVDE Office of Instruction	2.9	14.9	38	0	0.0	26	68.4	6	15.8	6	15.8
WVDE Office of Instructional Technology	26.2	26.8	270	95	35.2	32	11.9	6	2.2	137	**50.7**
WVDE Office of Optional Educational Pathways	1.8	8.8	8	3	37.5	3	37.5	2	25.0	0	0.0
WVDE Office of Professional Preparation	3.9	4.8	27	15	55.6	11	40.7	1	3.7	0	0.0
WVDE Office of School Improvement	28.2	17.0	24	0	0.0	19	79.2	3	12.5	2	8.3
WVDE Office of Special Programs	17.0	12.8	132	35	26.5	70	53.0	19	14.4	8	6.1

Table 6. Number and Percentage of Participants in Professional Development by Duration by Provider

Organization	All sessions	Informational (up to 4 hours)		Technical (5-13 hours)		Sustained (14-29 hours)		Recommended (30 hours plus)	
		N	%	N	%	N	%	N	%
All providers	32,582	8,980	27.6	11,349	34.8	4,864	14.9	7,389	22.7
Center for Professional Development	2,818	0	0.0	1,477	52.4	18	0.6	**1,323**	46.9
Marshall University Clinical Experiences and Professional Development Schools	120	7	5.8	79	65.8	34	28.3		0.0
Marshall University June Harless Center	719	116	16.1	56	7.8	194	27.0	353	49.1
RESA 1	912	397	43.5	250	27.4	73	8.0	192	21.1
RESA 2	259	58	22.4	78	30.1	123	47.5		0.0
RESA 3	566	179	31.6	387	68.4	0	0.0		0.0
RESA 4	460	0	0.0	255	55.4	84	18.3	121	26.3
RESA 5	200	0	0.0	125	62.5	20	10.0	55	27.5
RESA 6	708	314	44.4	255	36.0	116	16.4	23	3.2
RESA 7	798	63	7.9	504	63.2	226	28.3	5	0.6
RESA 8	187	0	0.0	181	96.8	0	0.0	6	3.2
WVDE Office of Assessment and Accountability	1,130	562	49.7	480	42.5	88	7.8		0.0
WVDE Office of Career and Technical Accountability and Support	1,268	522	41.2	414	32.6	332	26.2		0.0
WVDE Office of Career and Technical Innovations	115	0	0.0	70	60.9	39	33.9	6	5.2
WVDE Office of Career and Technical Instruction	1,410	1,170	83.0	0	0.0	199	14.1	41	2.9
WVDE Office of Child Nutrition	247	0	0.0	247	100.0	0	0.0		0.0
WVDE Office of Early Learning	2,624	834	31.8	1,519	57.9	271	10.3		0.0
WVDE Office of Federal Programs	62	33	53.2	0	0.0	29	46.8		0.0
WVDE Office of Healthy Schools	369	150	40.7	49	13.3	170	46.1		0.0
WVDE Office of Instruction	1,577	0	0.0	421	26.7	172	10.9	**984**	62.4
WVDE Office of Instructional Technology	6,802	2,589	38.1	803	11.8	342	5.0	**3,068**	45.1
WVDE Office of Optional Educational Pathways	596	17	2.9	129	21.6	450	75.5		0.0
WVDE Office of Professional Preparation	2,166	833	38.5	1,315	60.7	18	0.8		0.0
WVDE Office of School Improvement	1,244	0	0.0	350	28.1	546	43.9	348	28.0
WVDE Office of Special Programs	5,225	1,136	21.7	1,905	36.5	1,320	25.3	**864**	16.5

Table 7. Attendance by Location

Location	Attendance	Location	Attendance
All locations			32,582
Multiple locations	2,106	McDowell	47
Multiple and online	359	Mercer	206
PD was online	4,343	Mineral	222
Barbour	53	Mingo	298
Berkeley	775	Monongalia	2,675
Boone	131	Monroe	93
Braxton	410	Morgan	4
Brooke	89	Nicholas	637
Cabell	1,451	Ohio	762
Calhoun	0	Pendleton	0
Clay	28	Pleasants	57
Doddridge	34	Pocahontas	219
Fayette	181	Preston	97
Gilmer	220	Putnam	511
Grant	72	Raleigh	1,756
Greenbrier	80	Randolph	125
Hampshire	443	Ritchie	23
Hancock	113	Roane	57
Hardy	16	Summers	176
Harrison	1,758	Taylor	159
Jackson	134	Tucker	136
Jefferson	336	Tyler	0
Kanawha	7,882	Upshur	17
Lewis	493	Wayne	306
Lincoln	290	Webster	16
Logan	281	Wetzel	65
Marion	503	Wirt	36
Marshall	181	Wood	929
Mason	106	Wyoming	85

Table 8. Alignment with Board Standards for Professional Development by Standard by Provider

	Number and percent of sessions aligned with standards															
	All standards combined		Standard 1		Standard 2		Standard 3		Standard 4		Standard 5		Standard 6		Standard 7	
Organization:	Total N	Mean %	N	%	N	%	N	%	N	%	N	%	N	%	N	%
All providers	1019	57.6	677	66.4	572	56.1	596	58.5	467	45.8	655	64.3	482	47.3	660	64.8
Provider category																
Center for Professional Development	110	100.0	110	100.0	110	100.0	110	100.0	110	100.0	110	100.0	110	100.0	110	100.0
Institutions of higher education (Marshall University)	35	77.6	31	88.6	25	71.4	28	80.0	25	71.4	27	77.1	23	65.7	31	88.6
Regional education service agencies	146	66.8	101	69.2	103	70.5	106	72.6	92	63.0	99	67.8	86	58.9	96	65.8
West Virginia Department of Education	728	48.4	435	59.8	334	45.9	352	48.4	240	33.0	419	57.6	263	36.1	423	58.1
Individual providers																
Center for Professional Development	110	100.0	110	100.0	110	100.0	110	100.0	110	100.0	110	100.0	110	100.0	110	100.0
Marshall University Clinical Experiences and PD Schools	7	42.9	5	71.4	2	28.6	3	42.9	2	28.6	3	42.9	1	14.3	5	71.4
Marshall University June Harless Center	28	86.2	26	92.9	23	82.1	25	89.3	23	82.1	24	85.7	22	78.6	26	92.9
RESA 1	41	73.5	31	75.6	34	82.9	34	82.9	31	75.6	28	68.3	26	63.4	27	65.9
RESA 2	9	68.3	5	55.6	6	66.7	5	55.6	4	44.4	7	77.8	9	100.0	7	77.8
RESA 3	13	51.6	6	46.2	9	69.2	9	69.2	4	30.8	10	76.9	3	23.1	6	46.2
RESA 4	19	85.7	16	84.2	15	78.9	17	89.5	16	84.2	17	89.5	17	89.5	16	84.2
RESA 5	7	51.0	2	28.6	4	57.1	2	28.6	5	71.4	6	85.7	4	57.1	2	28.6
RESA 6	24	91.7	20	83.3	24	100.0	23	95.8	19	79.2	23	95.8	22	91.7	23	95.8
RESA 7	24	44.6	13	54.2	10	41.7	14	58.3	11	45.8	7	29.2	5	20.8	15	62.5
RESA 8	9	22.2	8	88.9	1	11.1	2	22.2	2	22.2	1	11.1	0	0.0	0	0.0
WVDE Office of Assessment and Accountability	59	36.6	47	79.7	35	59.3	15	25.4	20	33.9	19	32.2	4	6.8	11	18.6
WVDE Office of Career/Tech Accountability and Support	31	23.5	11	35.5	3	9.7	3	9.7	4	12.9	9	29.0	3	9.7	18	58.1
WVDE Office of Career/Tech Innovations	3	38.1	2	66.7	1	33.3	2	66.7	1	33.3	1	33.3	0	0.0	1	33.3
WVDE Office of Career/Tech Instruction	74	51.4	41	55.4	40	54.1	45	60.8	31	41.9	31	41.9	25	33.8	53	71.6
WVDE Office of Child Nutrition	1	14.3	0	0.0	1	100.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
WVDE Office of Early Learning	49	37.6	33	67.3	12	24.5	34	69.4	0	0.0	44	89.8	3	6.1	3	6.1
WVDE Office of Federal Programs	6	42.9	6	100.0	0	0.0	0	0.0	4	66.7	2	33.3	1	16.7	5	83.3
WVDE Office of Healthy Schools	5	57.1	4	80.0	4	80.0	4	80.0	1	20.0	2	40.0	2	40.0	3	60.0
WVDE Office of Instruction	38	43.6	14	36.8	14	36.8	10	26.3	9	23.7	31	81.6	16	42.1	22	57.9
WVDE Office of Instructional Technology	270	36.2	109	40.4	64	23.7	79	29.3	61	22.6	136	50.4	56	20.7	179	66.3
WVDE Office of Optional Educational Pathways	8	51.8	4	50.0	4	50.0	5	62.5	5	62.5	3	37.5	4	50.0	4	50.0
WVDE Office of Professional Preparation	27	48.7	17	63.0	23	85.2	19	70.4	5	18.5	11	40.7	5	18.5	12	44.4
WVDE Office of School Improvement	24	96.4	24	100.0	24	100.0	21	87.5	22	91.7	23	95.8	24	100.0	24	100.0
WVDE Office of Special Programs	132	79.2	122	92.4	108	81.8	114	86.4	76	57.6	106	80.3	119	90.2	87	65.9

Table 9. Roles of respondents

Role	Number	Percent
All role-group respondents	5,958	100.0
Classroom teacher	2,865	48.1
District central office staff	502	8.4
Instructional support teacher (non-special education)	216	3.6
Other	984	16.5
Paraprofessional/aide	29	0.5
Principal/assistant principal	646	10.8
RESA staff	67	1.1
Special education teacher	649	10.9

Table 10. Number of Participant Survey Respondents by County or Other Employer

Employer	Number	Employer	Number
Higher Education	48	Mason County Schools	44
Other	130	McDowell County Schools	53
Out of state	22	Mercer County Schools	105
Regional Education Service Agency	41	Mineral County Schools	41
WV Department of Education	54	Mingo County Schools	86
Barbour County Schools	41	Monongalia County Schools	136
Berkeley County Schools	182	Monroe County Schools	44
Boone County Schools	74	Morgan County Schools	33
Braxton County Schools	31	Nicholas County Schools	56
Brooke County Schools	51	Ohio County Schools	55
Cabell County Schools	209	Pendleton County Schools	26
Calhoun County Schools	18	Pleasants County Schools	33
Clay County Schools	32	Pocahontas County Schools	21
Doddridge County Schools	39	Preston County Schools	56
Fayette County Schools	114	Putnam County Schools	109
Gilmer County Schools	36	Raleigh County Schools	114
Grant County Schools	33	Randolph County Schools	54
Greenbrier County Schools	84	Ritchie County Schools	22
Hampshire County Schools	51	Roane County Schools	35
Hancock County Schools	54	Summers County Schools	29
Hardy County Schools	24	Taylor County Schools	41
Harrison County Schools	137	Tucker County Schools	18
Institutional Education Program	23	Tyler County Schools	22
Jackson County Schools	47	Upshur County Schools	49
Jefferson County Schools	149	Wayne County Schools	71
Kanawha County Schools	322	Webster County Schools	26
Lewis County Schools	41	Wetzel County Schools	48
Lincoln County Schools	91	Wirt County Schools	26
Logan County Schools	65	Wood County Schools	140
Marion County Schools	86	WV Schools for the Deaf and the Blind	17
Marshall County Schools	60	Wyoming County Schools	42

Table 11. Percentage of Respondents Who Agreed or Strongly Agreed That the Professional Development They Attended Had Met Standards for Research-Based Practice by Provider

	Number of respondents and percentage of those respondents in agreement														
	Agreement overall	PD intensive		PD had active learning		PD content focused		PD aligned to school goals		PD had collaboration		PD had embedded follow-up		PD was beneficial overall	
	Mean %	N	%	N	%	N	%	N	%	N	%	N	%	N	%
All providers	76.4	4050	70.4	4325	75.5	2986	81.7	4818	84.2	4564	79.9	3803	66.6	4373	76.4
Center for Professional Development	80.9	522	76.2	552	81.3	454	83.9	579	85.0	583	85.5	493	72.5	560	82.1
Marshall University Clinical Experiences and PD Schools	77.8	36	63.2	43	75.4	31	86.1	50	87.7	47	83.9	38	69.1	45	78.9
Marshall University June Harless Center	75.8	105	66.0	120	75.5	107	77.5	132	82.5	128	80.5	116	73.4	117	75.0
RESA 1	77.9	77	74.8	77	75.5	61	88.4	91	89.2	79	78.2	64	62.7	78	76.5
RESA 2	88.9	45	81.8	50	89.3	12	100.0	53	94.6	52	92.9	43	78.2	48	85.7
RESA 3	75.6	30	76.9	29	74.4	nd	nd	34	87.2	30	76.9	24	61.5	30	76.9
RESA 4	89.6	55	85.9	58	90.6	53	94.6	62	96.9	60	92.3	50	80.6	56	86.2
RESA 5	78.8	39	72.2	43	79.6	34	73.9	43	79.6	46	85.2	42	79.2	44	81.5
RESA 6	65.3	41	61.2	43	64.2	37	77.1	49	73.1	46	69.7	36	53.7	39	58.2
RESA 7	69.5	137	64.9	134	64.1	68	78.2	178	85.2	151	72.9	109	52.4	145	69.0
RESA 8	86.2	79	89.8	77	87.5	63	90.0	77	88.5	81	92.0	62	71.3	74	84.1
WVDE Office of Assessment and Accountability	67.7	179	63.5	189	68.0	124	72.5	229	81.5	180	64.5	154	55.4	191	68.2
WVDE Office of Career/Tech Accountability and Support	70.9	116	65.2	120	68.2	72	67.9	148	84.1	126	71.6	113	64.2	132	75.0
WVDE Office of Career/Tech Innovations	78.3	21	72.4	21	72.4	11	78.6	26	89.7	27	93.1	19	67.9	20	74.1
WVDE Office of Career/Tech Instruction	70.9	126	64.9	132	68.4	135	77.6	158	81.4	145	75.1	114	59.4	134	69.4
WVDE Office of Child Nutrition	50.9	22	57.9	16	42.1	nd	nd	19	50.0	20	55.6	19	50.0	19	50.0
WVDE Office of Early Learning	77.1	281	68.4	303	73.7	192	87.3	351	86.5	325	80.4	273	67.1	311	76.2
WVDE Office of Federal Programs	84.8	20	83.3	19	79.2	18	90.0	19	82.6	21	87.5	21	87.5	20	83.3
WVDE Office of Healthy Schools	79.0	125	64.1	163	84.0	58	81.7	163	84.0	167	85.6	133	68.2	167	85.6
WVDE Office of Instruction	79.4	365	78.8	366	79.2	353	86.5	397	85.9	401	86.8	296	64.1	343	74.6
WVDE Office of Instructional Technology	82.9	468	71.7	562	86.5	428	86.1	561	86.3	557	86.1	528	81.5	537	82.4
WVDE Office of Optional Educational Pathways	74.7	132	63.5	149	71.6	39	83.0	166	79.8	169	82.0	128	61.5	169	81.3
WVDE Office of Professional Preparation	68.5	278	60.0	307	66.5	173	68.4	367	79.6	335	73.3	278	60.8	327	70.9
WVDE Office of School Improvement	79.5	273	76.7	280	79.5	173	81.2	307	86.7	302	85.3	247	70.0	273	77.1
WVDE Office of Special Programs	72.8	477	70.3	471	69.7	290	81.5	558	83.0	485	71.9	402	59.7	493	73.4

Table 12. Percentage of Respondents Who Agreed or Strongly Agreed That the Professional Development They Attended Had Met Standards for Research-Based Practice by Format

	Number of respondents and percentage of those respondents in agreement														
	Agreement overall	PD intensive		PD had active learning		PD content focused		PD aligned to school goals		PD had collaboration		PD had embedded follow-up		PD was beneficial overall	
Format	Mean %	N	%	N	%	N	%	N	%	N	%	N	%	N	%
All formats	76.1	5,756	70.4	5,728	75.5	3,653	81.7	5,725	84.2	5,711	79.9	5,706	66.6	5,725	76.4
Informational	71.6	598	64.0	596	68.5	418	76.6	599	82.5	594	73.9	590	63.6	597	73.7
Sustained	79.0	3,475	73.7	3,456	79.4	2,383	84.3	3,455	85.5	3,454	83.4	3,448	70.3	3,456	78.4
Technical	71.5	1,683	65.8	1,676	70.0	852	77.2	1,671	82.0	1,663	74.9	1,668	60.3	1,672	73.2

Table 13. Percent of Respondents Who Agree That the Session Was Helpful in Meeting the Designated Board Goal for Professional Development

	Goal 1 Agree				Goal 2A Agree				Goal 2B Agree				Goal 3 Agree			
	Total N	Agree N	Non-agree N	Percent agree	Total N	Agree N	Non-agree N	Percent agree	Total N	Agree N	Non-agree N	Percent agree	Total N	Agree N	Non-agree N	Percent agree
Center for Professional Development	268	235	33	87.7	56	40	16	71.4	56	39	17	69.6	113	105	8	92.9
Marshall University Clinical Experiences and PD Schools	**	**	**	**	**	**	**	**	**	**	**	**	21	19	2	90.5
Marshall University June Harless Center	85	63	22	74.1	19	16	3	84.2	19	17	2	89.5	**	**	**	**
RESA 1	12	9	3	75.0	64	50	14	78.1	64	41	23	64.1	23	17	6	73.9
RESA 2	12	12	0	100.0	31	22	9	71.0	31	18	13	58.1	13	12	1	92.3
RESA 3	**	**	**	**	22	13	9	59.1	22	13	9	59.1	**	**	**	**
RESA 4	42	39	3	92.9	11	10	1	90.9	11	10	1	90.9	**	**	**	**
RESA 5	19	14	5	73.7	18	16	2	88.9	18	14	4	77.8	**	**	**	**
RESA 6	10	5	5	50.0	37	29	8	78.4	37	26	11	70.3	**	**	**	**
RESA 7	33	32	1	97.0	65	39	26	60.0	65	35	30	53.8	99	77	22	77.8
RESA 8	59	54	5	91.5	16	11	5	68.8	16	9	7	56.3	**	**	**	**
WVDE Office of Assessment and Accountability	146	97	49	66.4	**	**	**	**	**	**	**	**	74	61	13	82.4
WVDE Office of Career/Technical Accountability and Support	44	25	19	56.8	54	32	22	59.3	54	34	20	63.0	40	31	9	77.5
WVDE Office of Career/Technical Innovations	**	**	**	**	**	**	**	**	**	**	**	**	15	12	3	80.0
WVDE Office of Career/Technical Instruction	165	124	41	75.2	**	**	**	**	**	**	**	**	**	**	**	**

Table and notes continue on next page.

Table 13. Percent of Respondents Who Agree That the Session Was Helpful in Meeting the Designated Board Goal for Professional Development

	Goal 1 Agree				Goal 2A Agree				Goal 2B Agree				Goal 3 Agree			
	Total N	Agree N	Non-agree N	Percent agree	Total N	Agree N	Non-agree N	Percent agree	Total N	Agree N	Non-agree N	Percent agree	Total N	Agree N	Non-agree N	Percent agree
WVDE Office of Child Nutrition	**	**	**	**	38	16	22	42.1	38	13	25	34.2	**	**	**	**
WVDE Office of Early Learning	204	171	33	83.8	12	4	8	33.3	12	6	6	50.0	146	121	25	82.9
WVDE Office of Federal Programs	20	18	2	90.0	**	**	**	**	**	**	**	**	**	**	**	**
WVDE Office of Healthy Schools	**	**	**	**	184	154	30	83.7	185	145	40	78.4	**	**	**	**
WVDE Office of Instruction	414	345	69	83.3	**	**	**	**	**	**	**	**	**	**	**	**
WVDE Office of Instructional Technology	348	298	50	85.6	16	12	4	75.0	16	13	3	81.3	74	49	25	66.2
WVDE Office of Optional Educational Pathways	**	**	**	**	154	109	45	70.8	154	109	45	70.8	41	33	8	80.5
WVDE Office of Professional Preparation	**	**	**	**	**	**	**	**	**	**	**	**	211	178	33	84.4
WVDE Office of School Improvement	**	**	**	**	**	**	**	**	**	**	**	**	141	119	22	84.4
WVDE Office of Special Programs	176	131	45	74.4	138	114	24	82.6	138	102	36	73.9	232	175	57	75.4

**Data were suppressed for total Ns of fewer than 10 respondents because such small samples may not produce valid results. Percentages highlighted in green were among the top quartile of rates of agreement that the professional development was helpful in meeting this goal; the percentages highlighted in pink were among the bottom quartile.

Table 14. Perceived Impact of Professional Development (Pre-/Postsession) Overall and by Provider Group

		Treatment Group			Comparison Group			Pre/Posttest		Effect size
Provider	Dimension	Mean	SD	n	Mean	SD	n	Correlation	Sig	(Cohen's *d*)
All providers	Knowledge	3.58	.575	5446	2.83	.774	5446	.427	.000	1.1818
	Practices	3.51	.674	5185	2.92	.808	5185	.543	.000	0.7501
	Attitudes/beliefs	3.63	.596	5212	3.25	.729	5212	.569	.000	0.5360
PROVIDER CATEGORY										
Center for Professional Development	Knowledge	3.72	.499	668	3.03	.743	668	.355	.000	1.2521
	Practices	3.66	.578	659	3.07	.757	659	.502	.000	0.8676
	Attitudes/beliefs	3.74	.492	638	3.41	.639	638	.528	.000	0.5612
IHE	Knowledge	3.60	.551	193	2.66	.858	193	.404	.000	1.4278
	Practices	3.48	.659	187	2.87	.822	187	.537	.000	0.7949
	Attitudes/beliefs	3.67	.543	190	3.28	.722	190	.561	.000	0.5709
RESAs	Knowledge	3.52	.578	640	2.78	.701	640	.453	.000	1.2167
	Practices	3.46	.673	619	2.88	.756	619	.541	.000	0.7783
	Attitudes/beliefs	3.60	.610	622	3.19	.729	622	.580	.000	0.5589
WVDE	Knowledge	3.57	.585	3945	2.81	.781	3945	.430	.000	1.1675
	Practices	3.49	.687	3720	2.91	.821	3720	.545	.000	0.7325
	Attitudes/beliefs	3.62	.610	3762	3.23	.741	3762	.569	.000	0.5324
INDIVIDUAL PROVIDERS										
Center for Professional Development	Knowledge	3.72	.499	668	3.03	.743	668	.355	.000	1.2521
	Practices	3.66	.578	659	3.07	.757	659	.502	.000	0.8676
	Attitudes/beliefs	3.74	.492	638	3.41	.639	638	.528	.000	0.5612
Marshall University Clinical and PD Schools	Knowledge	3.65	.526	48	2.96	.617	48	.281	.000	1.4376
	Practices	3.69	.468	48	3.08	.647	48	.439	.000	1.1333
	Attitudes/beliefs	3.69	.512	48	3.35	.635	48	.609	.000	0.5108
Marshall University June Harless Center	Knowledge	3.59	.560	145	2.56	.904	145	.432	.000	1.4560
	Practices	3.41	.700	139	2.79	.864	139	.538	.000	0.7565
	Attitudes/beliefs	3.67	.555	142	3.26	.750	142	.549	.000	0.5877

Table 14 continues on next page.

Table 14. Perceived Impact of Professional Development (Pre-/Postsession) Overall and by Provider Group

		Treatment Group			Comparison Group			Pre/Posttest		Effect size
Provider	Dimension	Mean	SD	n	Mean	SD	n	Correlation	Sig	(Cohen's *d*)
RESA 1	Knowledge	3.43	.582	90	2.66	.752	90	.474	.000	1.1872
	Practices	3.55	.586	87	2.91	.709	87	.459	.000	1.0290
	Attitudes/beliefs	3.57	.562	89	3.22	.670	89	.529	.000	0.5465
RESA 2	Knowledge	3.65	.520	54	2.94	.656	54	.550	.000	1.1276
	Practices	3.68	.510	53	3.04	.649	53	.501	.000	1.0969
	Attitudes/beliefs	3.69	.648	51	3.31	.678	51	.638	.000	0.4778
RESA 3	Knowledge	3.41	.743	34	2.79	.687	34	.705	.000	0.6625
	Practices	3.38	.779	34	2.82	.797	34	.698	.000	0.5513
	Attitudes/beliefs	3.62	.697	34	3.26	.790	34	.684	.002	0.3763
RESA 4	Knowledge	3.71	.490	63	2.79	.722	63	.287	.000	1.7826
	Practices	3.52	.620	62	2.73	.772	62	.506	.000	1.1221
	Attitudes/beliefs	3.71	.555	62	3.05	.798	62	.477	.000	0.9845
RESA 5	Knowledge	3.61	.529	54	2.70	.633	54	.438	.000	1.6487
	Practices	3.46	.771	48	2.75	.668	48	.558	.000	0.9237
	Attitudes/beliefs	3.64	.663	50	3.14	.808	50	.706	.000	0.5191
RESA 6	Knowledge	3.48	.596	60	2.92	.720	60	.411	.000	0.9302
	Practices	3.33	.795	60	2.98	.770	60	.618	.000	0.3908
	Attitudes/beliefs	3.53	.671	62	3.21	.704	62	.697	.000	0.3653
RESA 7	Knowledge	3.48	.585	197	2.88	.632	197	.442	.000	1.0382
	Practices	3.44	.558	188	3.06	.651	188	.556	.000	0.5788
	Attitudes/beliefs	3.57	.557	190	3.28	.637	190	.616	.000	0.4162
RESA 8	Knowledge	3.50	.567	88	2.48	.742	88	.519	.000	1.5190
	Practices	3.34	.860	87	2.46	.900	87	.574	.000	0.9281
	Attitudes/beliefs	3.58	.680	84	2.95	.849	84	.508	.000	0.8139
WVDE Office of Assessment and Accountability	Knowledge	3.39	.642	266	2.75	.809	266	.528	.000	0.8495
	Practices	3.28	.768	249	2.83	.859	249	.647	.000	0.4640
	Attitudes/beliefs	3.41	.719	249	3.13	.803	249	.727	.000	0.2687

Table 14 continues on next page.

Table 14. Perceived Impact of Professional Development (Pre-/Postsession) Overall and by Provider Group

Provider	Dimension	Treatment Group Mean	Treatment Group SD	Treatment Group n	Comparison Group Mean	Comparison Group SD	Comparison Group n	Pre/Posttest Correlation	Sig	Effect size (Cohen's *d*)
WVDE Office of Career and Technical Accountability and Support	Knowledge	3.52	.589	167	2.84	.779	167	.355	.000	1.1226
	Practices	3.41	.703	153	2.96	.794	153	.395	.000	0.6619
	Attitudes/beliefs	3.56	.615	154	3.14	.750	154	.356	.000	0.7090
WVDE Office of Career and Technical Innovations	Knowledge	3.62	.571	26	3.15	.732	26	.722	.000	0.5247
	Practices	3.38	.590	21	2.86	.655	21	.407	.002	0.9156
	Attitudes/beliefs	3.52	.586	25	3.28	.792	25	.751	.031	0.2432
WVDE Office of Career and Technical Instruction	Knowledge	3.49	.627	184	2.91	.798	184	.512	.000	0.8003
	Practices	3.41	.738	181	2.97	.819	181	.598	.000	0.5083
	Attitudes/beliefs	3.51	.739	177	3.19	.772	177	.628	.000	0.3742
WVDE Office of Child Nutrition	Knowledge	3.27	.693	37	2.86	.713	37	.638	.000	0.4907
	Practices	3.43	.698	35	2.89	.676	35	.605	.000	0.7018
	Attitudes/beliefs	3.29	.789	35	3.17	.707	35	.754	.211	0.1070
WVDE Office of Early Learning	Knowledge	3.55	.589	386	2.96	.753	386	.470	.000	0.8994
	Practices	3.53	.635	367	2.99	.806	367	.577	.000	0.6837
	Attitudes/beliefs	3.68	.547	379	3.28	.707	379	.511	.000	0.6150
WVDE Office of Federal Programs	Knowledge	3.79	.509	24	3.08	.776	24	.817	.000	0.6534
	Practices	3.71	.464	24	2.67	.702	24	.623	.000	1.5208
	Attitudes/beliefs	3.78	.518	23	3.35	.714	23	.582	.002	0.6372
WVDE Office of Healthy Schools	Knowledge	3.72	.450	182	3.20	.592	182	.401	.000	1.0744
	Practices	3.65	.523	178	3.25	.609	178	.527	.000	0.6839
	Attitudes/beliefs	3.73	.483	179	3.34	.591	179	.545	.000	0.6813
WVDE Office of Instruction	Knowledge	3.61	.607	451	2.71	.770	451	.439	.000	1.3687
	Practices	3.55	.660	428	2.86	.816	428	.502	.000	0.9298
	Attitudes/beliefs	3.64	.608	434	3.20	.785	434	.552	.000	0.5933
WVDE Office of Instructional Technology	Knowledge	3.68	.521	622	2.78	.755	622	.327	.000	1.5988
	Practices	3.48	.681	592	2.74	.834	592	.512	.000	0.9717
	Attitudes/beliefs	3.69	.558	599	3.18	.749	599	.457	.000	0.8059

Table 14. Perceived Impact of Professional Development (Pre-/Postsession) Overall and by Provider Group

Provider	Dimension	Treatment Group Mean	Treatment Group SD	Treatment Group n	Comparison Group Mean	Comparison Group SD	Comparison Group n	Pre/Posttest Correlation	Sig	Effect size (Cohen's *d*)
WVDE Office of Optional Educational Pathways	Knowledge	3.66	.498	187	3.13	.694	187	.429	.000	0.9274
	Practices	3.52	.661	173	3.16	.758	173	.684	.000	0.4070
	Attitudes/beliefs	3.70	.494	178	3.49	.604	178	.680	.000	0.3096
WVDE Office of Professional Preparation	Knowledge	3.43	.607	425	2.41	.806	425	.447	.000	1.4956
	Practices	3.40	.802	379	2.71	.891	379	.509	.000	0.8115
	Attitudes/beliefs	3.49	.700	393	3.10	.795	393	.635	.000	0.4383
WVDE Office of School Improvement	Knowledge	3.67	.529	344	2.74	.782	344	.287	.000	1.6633
	Practices	3.61	.671	322	2.97	.825	322	.527	.000	0.8351
	Attitudes/beliefs	3.67	.607	325	3.22	.766	325	.534	.000	0.6317
WVDE Office of Special Programs	Knowledge	3.53	.604	643	2.90	.737	643	.472	.000	0.9685
	Practices	3.49	.647	617	3.00	.783	617	.592	.000	0.6213
	Attitudes/beliefs	3.63	.564	611	3.30	.679	611	.613	.000	0.4637
DURATION OF TRAINING										
Informational	Knowledge	3.49	.611	556	2.84	.809	556	.510	.000	0.8966
	Practices	3.39	.748	511	2.90	.881	511	.558	.000	0.5693
	Attitudes/beliefs	3.41	.747	507	3.21	.786	507	.520	.000	0.2495
Technical	Knowledge	3.52	.585	1576	2.79	.801	1576	.468	.000	1.0839
	Practices	3.47	.683	1489	2.95	.807	1489	.559	.000	0.6635
	Attitudes/beliefs	3.48	.672	1467	3.26	.715	1467	.423	.000	0.3440
Sustained	Knowledge	3.63	.560	3314	2.85	.754	3314	.389	.000	1.2950
	Practices	3.54	.654	3185	2.92	.795	3185	.534	.000	0.8261
	Attitudes/beliefs	3.54	.656	3158	3.25	.724	3158	.406	.000	0.4540

Table 14 continues on next page.

James B. Phares Ed.D.
State Superintendent of Schools