

Collaborative Center for Literacy Development (CCLD)
University of Kentucky

**Addendum to CCLD Impact and Achievement Report, 2014:
Impact of Professional Development for Improved Literacy Instruction, 2015**

June 30, 2015

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Executive Summary:

The Collaborative Center for Literacy Development (CCLD) was created by the Kentucky legislature in 1998 to provide high quality teacher professional development (PD) for improved literacy instruction, early childhood through adulthood. CCLD's PD is provided through the literacy education faculty of Kentucky's 8 state universities, and is designed to be of sufficient intensity and duration to merit 3 hours of graduate course credit for teachers who complete the 9-month programs, in accordance with requirements set by Kentucky's Educational Professional Standards Board (EPSB).

The following report update presents evidence of the impact of CCLD's teacher PD for improving literacy instruction and student literacy achievement. It stands as an addendum to CCLD's four-year impact and achievement report, released January, 2014 (appended to this document), and to CCLD's annual report for 2014-2015, to be released September 1, 2015, as per legislative mandate.

This brief report presents four sets of indices. All four sets are positive.

The first set presents teacher survey data on the professional development experience through both the Kentucky Reading Project (KRP; for grades K-5), and the Adolescent Literacy Project (ALP; for middle and high school teachers). This data demonstrates a highly favorable response to KRP & ALP professional development, clearly in excess of that typically found through student surveys of post-graduate education courses at state universities.

The second set presents open response data on teachers' experiences of CCLD's PD. This qualitative data is presented to share the flavor of participants' experience, and includes recommendations for improvement of the programs. The responses are both positive and insightful.

The third set of indices tally and report the result of the KRP-ALP Principals and School Leaders Survey results. These, too, are highly positive.

The fourth set of indices presents a quantitative data analysis of KRP effects on students' K-PREP reading scores in Grades 3, 4, & 5 for 2015. The data indicates a positive impact for KRP on both 4th and 5th grade scores. The analysis has been calculated in such a way as to guarantee statistical reliability, and the result is of practical significance. Noted limitations to this kind of quantitative analysis are reviewed.

KRP and ALP Participant and School Leaders' Perceptions

Data Sources:

- ALP (LALLI) participant teachers end-of-year surveys (2013-2014)
- ALP (LALLI) participant teachers interviews (2013)
- KRP participant teachers end-of-summer-institute evaluations (2012-2013, 2013-2014, 2014-2015)
- KRP principals and school leaders surveys (2014)

Data Collected:

1. ALP (LALLI) participant teachers end-of-year surveys (2013-2014)
 - Middle school = 52, high school = 7, other (e.g. special ed.) = 1
 - 7 sites
 - Eastern Kentucky University (3 middle schools, 3 high schools; science = 2, ELA = 3, social studies and drama)
 - Kentucky State University (3 middle schools; reading, writing, vocabulary, language arts)
 - Morehead State University (11 middle schools; language arts = 2, reading/SS, reading = 3, geography, science = 2, writing, SS-CSI reading, math = 2, history, life skills)
 - Murray State University (15 middle schools, 1 high school; language arts = 3, art, reading, reading/LA, Spanish, science, science/social studies = 2, reading/English, math/science, social studies, 9th grade English)
 - Northern Kentucky University (11 middle schools, 3 high schools; reading/math/science, language arts = 4, reading/science, reading, English = 2, special education, social studies = 4, science)
 - University of Kentucky (5 middle schools; social studies, world civilization, language arts, RTI, social studies, math)
 - University of Louisville (4 middle schools; science, language arts, special Ed., literacy)
2. ALP (LALLI) Summer Institute participant teachers semi-structured interviews (2013)
 - Total interviewed = 70; 58 females, 12 males; average age = 37; age range = 24-65
3. KRP participant teachers end-of-summer-institute evaluations (2012-2013, 2013-2014, 2014-2015)
 - 2012-2013: 3 sites, 51 participants
 - Murray State University (16 teachers: 15 primary, 1 ESL)
 - Northern Kentucky University (18 teachers; 10 primary, 8 intermediate)
 - University of Kentucky (17 teachers; 13 primary, 4 intermediate)

- 2013-2014: 5 sites, 94 participants
 - Kentucky State University (20 teachers; 14 primary, 5 intermediate, 1 special ed.)
 - Murray State University (15 teachers; 7 primary, 4 intermediate, 3 special ed., 1 intervention)
 - Northern Kentucky University (20 teachers; 10 intermediate, 8 primary, 2 special ed.)
 - University of Louisville (24 teachers; 7 intermediate, 12 primary, 2 special ed., 1 goal clarity coach, 2 NA)
 - Western Kentucky University (15 teachers; 11 primary, 2 intermediate, 2 special ed.)

- 2014-2015: 7 sites, 98 participants
 - Eastern Kentucky University (13 teachers; 4 intermediate, 7 primary, 1 substitute teacher, 1 NA)
 - Kentucky State University (8 teachers; 5 primary, 1 intermediate, 1 special ed., 1 NA)
 - Morehead State University (20 teachers; 14 primary, 4 intermediate, 2 special ed.)
 - Murray State University (10 teachers; 6 primary, 4 intermediate)
 - Northern Kentucky University (17 teachers; 9 primary, 5 intermediate, 1 special ed., 1 world humanities, 1 NA)
 - University of Louisville (17 teachers; 8 primary, 6 intermediate, 2 reading recovery, 1 ESL)
 - Western Kentucky University (13 teachers; 10 primary, 1 intermediate, 1 special ed., 1 NA)

- 4. KRP principals and school leaders surveys (2014)
83 responses

Adolescent Literacy Project (ALP)

Impacts

For the Adolescent Literacy Project (ALP) (formerly LALLI - Leveraged Adolescent Literacy and Learning Initiative), participants during the 2013-2014 academic year completed an end-of-year evaluation form (see Appendix 1). This evaluation included seven open-ended questions to collect participant feedback on the training program.

A total of 61 evaluation responses were collected, representing seven ALP training sites, 52 middle school teachers, seven high school teachers, one elementary school teacher (5th grade), and one special education/ESL teacher. These teachers taught a variety of subject areas, including social studies (18%), language arts (18%), science (15%), reading (15%), math (6%), ELA (5%), English (5%), writing (3%), special education (3%), geography (2%), history (2%), life skills (2%), art (2%), Spanish (2%), world civilization (2%), RTI (2%), and literacy (2%).

In these evaluations, ALP participants expressed overwhelmingly positive views about the effects of their training. When asked about the program's impact on their instructional practices, 40% of the participants reported incorporating multiple newly-learned instructional strategies, activities and ideas in their everyday teaching of various content areas. 14% used resources and materials provided by ALP in their classrooms. 10% of the participants said that the program had helped them evaluate their own teaching and become more intentional in classroom practices in order to increase student engagement. 9% of the participants expressed a better awareness of good instructional practices to meet the needs of diverse learners. Another 9% gained a better understanding of the Common Core standards, and utilized standards-based research and activities in their instruction. 6% of the participants reported collaborating with other colleagues to make literacy a school-wide focus. One teacher said, "ALP/LALLI has impacted my instructional practices beyond belief. I went from just a science teacher to a literacy leader".

All participants reported various degrees of success in implementing what they had learned from ALP (particularly activities such as Literacy Circles and the Poetry Project). As a result, most participants observed positive changes in their students' learning: (1) students became more active, motivated, and confident readers, and showed increased engagement and interest in the content. In one teacher's words, the children were "becoming captains of their own ship". (2) Students' reading comprehension levels were judged to have increased. They engaged in deeper, more intentional interactions with text, gained deeper understanding of concepts, and began to question the material more frequently. (3) Students demonstrated increased engagement in learning vocabulary, and achieved higher vocabulary scores. (4) Students showed improvements in writing fluency and writing assessment performance. (5) Increased MAP and K-Prep scores showed evidence of improved student learning after their teachers' participation in ALP.

In addition to the end-of-year evaluation, a post-training interview (see Appendix 2) was conducted in the summer of 2013 with 70 ALP participants consisting of 9% elementary school teachers, 60% middle school teachers, and 31% high school teachers. This semi-structured interview focused on participants' perspectives on ALP as a professional development experience.

The interview results revealed that from the participants' perspectives, ALP had the following major strengths as a professional development program: (1) the training was interactive and encouraged active participation; participants were provided opportunities to practice what they learned. (2) The teaching and learning strategies introduced were useful and practical. (3) The program provided opportunities for networking, so that participants could share ideas and learn from each other. (4) The program focused on literacy across the content areas. (5) Participants were deeply inspired by the speakers and presenters at the institutes. (6) The writing component of the training was very beneficial.

In particular, ALP participants seemed to perceive the following as the most important and beneficial components of the program:

- (1) Hands-on activities and instruction were critical to participant learning and overall satisfaction with the institute.

It was very engaging... we actually did something. We actually participated. It wasn't just someone talking for six hours, giving us a few handouts, going over a power point. It was very interactive, it got you up and moving, thinking like a teacher, but thinking like a student as well. It was very much a non-traditional way of having a PD.

ALP participant

- (2) Having an environment where participants felt comfortable to share and learn with teachers from other schools as well as their own schools; opportunities to collaborate with others.

I like the size, it's a small group and (I like) that we do activities to encourage us to get to know each other and discussion is encouraged, everybody feels safe and there's not really a competitive edge to this... It was completely relevant.

ALP participant

It has built a better community, fostered friendships with other colleagues in different schools because of the (extensive) time. I like the idea of us switching around and not always sitting with our close friends...you get to pick up different areas that you normally wouldn't be using in your classroom.

ALP participant

- (3) Being able to take away useful, practical strategies and use them right away.

This PD was much more thought provoking and it challenged me and my processes in my classroom and I would actually leave every day taking something with me. I can leave (this PD) and automatically implement (strategies) in my classroom that I know would make an impact on the students as well as school wide. We've worked a lot on how we're going to take this back to our school.

ALP participant

- (4) Opportunities to become more familiar with technology.

I plan to utilize Edmodo and some of the technology that I've always felt a little intimidated by, now I feel a lot more comfortable to use it.

ALP participant

- (5) Having presenters and fellow participants for follow-up support.

I now have a community of teachers that I can email or call (that I) I feel comfortable with. Most PDs you go to are three days long and you kind of get to know the other teachers but not to the level where I'd feel comfortable saying, "I'm having some difficulties in this area, I need some help". Because this was two weeks, I feel like I could easily call any of the teachers or professors that were here teaching us.

ALP participant

Future Needs

In the ALP end-of-year evaluations, respondents listed the following areas that they believed could be improved:

- Some respondents wished the program could go on for another year, where a 2nd or 3rd year cohort could follow up with a blog or other online resources.
- More strategies for writing instruction
- More collaboration time for teachers of the same content area
- Introducing more technologies
- More vocabulary strategies
- More focus on students who are below benchmark
- More information about resources for gifted and talented students
- Techniques to incorporate writing and career readiness
- More information about school involvement
- Information about how to grade reading and writing activities
- Choices for available workshops should be given beforehand

Kentucky Reading Project (KRP)

Impacts

A program evaluation form (see Appendix 3) was completed by KRP (Kentucky Reading Project) participants every year at the end of the summer institute. The evaluation consists of five Likert scale statements and four open-ended questions to collect participant feedback on the training program. During the past three academic years (2012-2013, 2013-2014, and 2014-2015), a total of 243 evaluations have been collected, representing increasing numbers of training sites (3 sites in 2012-2013, 5 sites in 2013-2014, 7 sites in 2014-2015) and participant teachers (51 responses in 2012-2013, 94 responses in 2013-2014, 98 responses in 2014-2015). Of all the respondents in the past three years, 61% were primary level teachers, 27% were intermediate level teachers, 6% were special education teachers, and 6% taught areas such as ESL, reading recovery, and world humanities.

Evaluation responses were similar across KRP training sites and academic years. In the past three years, an average of 96% of the respondents agreed that they had learned useful instructional skills/concepts from KRP presentations, 94% agreed that they had learned useful theoretical and developmental concepts, 98% agreed that they had opportunities to construct new understandings through dialogue and participation, 98% agreed that they had received valuable classroom resources, and 95% agreed that they had opportunities to reflect on what they learned.

According to the evaluations, KRP participants found the following components of the program the most beneficial: (1) presentations on how to implement effective strategies in classroom instruction (26%), (2) networking and sharing with other teachers (23%), (3) Reading workshops/reading comprehension strategies (13%), (4) Resources to use in the classrooms (10%), (5) strategies to involve families in the learning process (9%), (6) hands-on activities (7%), (7) sessions on phonics (5%) and phonemic awareness (5%), and (8) using data to inform assessment (2%).

The respondents believed that what they had learned from KRP would benefit their students in the following aspects: (1) new strategies and activities would be used to make the classes more engaging (40%), (2) reading instruction would be more intentional and focused, and the literacy program would become more balanced (19%), (3) teachers would adopt differentiated instruction to meet the needs of all students (17%), (4) students reading and writing skills would increase (7%), (5) students would be more motivated to read, and have more opportunities to read for pleasure (7%), (6) family members would be involved in the learning process (7%), and (8) teachers would be better able to assess student learning (3%).

Future Needs

In their evaluations, KRP participants listed the following areas that they believed could be improved:

- More information on grammar instruction
- How to connect reading to other curriculum areas
- More opportunities to share with other teachers/across schools
- More strategies on teaching English language learners
- More time for LAP
- More information on how literacy centers are planned and organized
- More intermediate/gifted strategies
- More modeling of Literacy Action Plan
- Examples of different schedules for literacy blocks
- An example lesson plan showing whole group and small group plans

KRP-ALP Principals and School Leaders Survey Results

In 2014, CCLD conducted a survey (see Appendix 4) with the principals and leaders of KPR and ALP participant schools. The survey assessed the school administrators' familiarity with the KRP/ALP programs, collected their opinions on the types of professional development needed for Kentucky literacy educators, and invited suggestions for future research topics in this area. A total of 83 survey responses were collected.

The survey results showed that the majority of school administrators (84%) were familiar with one or both of the programs.

In regards to PD preferences, 51% of the school administrators preferred face-to-face programs, 6% preferred online programs, and 43% preferred a hybrid of online and face-to-face deliveries. In terms of preferred literacy areas to be addressed in future PDs, the five most frequently mentioned areas were: struggling learners (54%), comprehension (53%), writing (51%), vocabulary (45%), and content literacy (27%).

According to the school administrators, some of the biggest literacy problems/challenges in Kentucky included: early childhood literacy/children entering school without basic reading skills (22%), struggling readers/special needs learners (14%), lack of family engagement (10%), lack of funds and/or resources (9%), comprehension issues (7%), low writing abilities (7%), literacy in high poverty areas (5%), vocabulary development (5%), lack of student engagement (5%), lack of differentiated/individualized instruction (3%), and children reading below grade level (3%).

Survey respondents believed that in order to improve literacy achievement, the focus of research most needed in the state of Kentucky included: early intervention/kindergarten readiness (21%), how to engage struggling readers (21%), differentiated instruction (15%), how to increase parent involvement (12%), research on successful reading strategies (9%), and how to teach comprehension to learners of all levels (9%).

Value-added Analysis of KRP PD Based on Student Test Data

We examined the impact on students' reading achievement at 3rd, 4th and 5th grade in Spring of 2014 of students who had had a teacher who had successfully completed KRP. Both reading achievement scale scores and K-PREP performance scores were used to examine the effect of KRP teachers. (Middle school scores and the impact of ALP have not been calculated because ALP had only been in existence for three years in 2014 and thus could not provide sufficient data for a reliable analysis.)

Percentage of KRP participated teachers' teaching levels

Teaching Levels	n	%
Pre-K	6	0.01
P1(Kindergarten)	73	6.91
P2 (1st grade)	91	8.62
P3(2nd grade)	94	8.90
P4(3rd grade)	115	10.89
4th grade	122	11.55
5th grade	76	7.20
P 1-2 (5-6 yr)	81	7.67
P 1-2-3	44	4.17
P 2-3 (6-7 yr)	30	2.84
P 2-3-4	13	1.23
P 3-4 (7-8 yr)	25	2.37
Librarian/Media Specialist	11	1.04
Reading Specialist	16	1.52
Special Ed.	66	6.25
other	73	6.91
missing	120	11.36
Total	1056	100

The value-added analysis is based on one year's worth of test scores (2014). Students were matched to their teachers, and their teachers were identified as to whether they had ever been through the Kentucky Reading Project PD program. KRP has been in existence for 18 years, and the number of years since the teacher had been in KRP was not calculated, but probably quite broad. Teachers were not aggregated on the basis of number of years since receiving the PD.

To achieve statistical reliability (i.e., in order to have a sufficient number, or *n*, of students in each sample), students were flagged as to whether they had had one or more KRP teachers at sometime during a six-year period (2008-2014).

Percentage of students by number of KRP teachers:

	3 rd grade		4 th grade		5 th grade	
	n	%	n	%	n	%
NO KRP Teacher	45,675	95.1	44,044	97.66	43,799	97.41
With 1 KRP Teacher	2,119	4.4	929	2.06	1,008	2.24
With 2 KRP teachers and above	234	0.5	127	0.28	156	0.35
Total	48,028		45,100		44,963	

As can be seen, only a small percentage of teachers have been through CCLD's KRP PD.

The challenge this analysis presents is that any one teacher's effect on a student will be diluted by the effects of the other teachers a student had during the six-year period. Similarly, any other PD (or none) a teacher may have had during the six years would dilute the impact of KRP. It is simply mathematically impossible, therefore, to demonstrate traditional levels of statistical significance, as the analyses below demonstrate. The situation is akin to trying to observe cell structure with a hand-held magnifying glass; the instrument is not adequate to the objective (see discussion in Ballou & Springer, 2015). CCLD's Research Office hopes to work with KDE and EPSB to identify suitable measures for future reports. In the meanwhile, the current analysis is as follows:

3rd grade

The final student sample size of 3rd grade was 48,028, where 2,353 students were taught by KRP teachers. A 4×3 Chi Square test was conducted to examine the relationship between students' K-PREP reading performance levels and the number of KRP teachers a student had experienced. $\chi^2 = 6.357$, $df = 6$, $p = .384$, suggesting that the number of KRP teachers has no significant impact on students' reading K-PREP levels. The frequency of each category is listed in Table 1.

Table 1.

Number of KRP teachers		K-PREP Level				Total
		N	A	P	D	
0	n	10489	10381	13617	11188	45675
	% within KRP group	23.0%	22.7%	29.8%	24.5%	100.0%
1	n	518	489	612	500	2119
	% within KRP group	24.4%	23.1%	28.9%	23.6%	100.0%
2 and above	n	58	62	63	51	234
	% within KRP group	24.8%	26.5%	26.9%	21.8%	100.0%
Total	n	11065	10932	14292	11739	48028
	% of Total	23.0%	22.8%	29.8%	24.4%	100.0%

In addition, One-Way ANOVA was conducted to test the relationship between students' reading scale scores and the number of KRP teachers. The final analytical sample consist of 47,501 students, where 527 cases were deleted due to univariate outliers. The descriptive statistics are shown in Table 2. In the ANOVA test results, $F(2, 47498) = 2.993, p = .05$, indicating that none of the groups had significantly higher reading achievement scores than others.

Table 2

Number of KRP teachers	<i>n</i>	<i>M</i>	<i>SD</i>
0	45157	211.36	19.47
1	2111	210.57	19.25
2 and above	233	209.24	18.42
Total	47501	211.32	19.46

4th grade

The final 4th grade student sample size was 45,100, where 1,056 students were taught by KRP teachers. A 4×3 Chi Square test was conducted to examine the relationship between students' K-PREP reading performance levels and the number of KRP teachers a student had experienced during a six-year period. $\chi^2 = 7.599, df = 6, p = .269$, suggesting that the number of KRP teachers has no significant impact on students' reading K-PREP levels. The frequency of each category is listed in Table 3.

Table 3.

Number of KRP teachers		K-PREP Level				Total
		N	A	P	D	
0	n	8985	11227	16423	7409	44044
	% within KRP group	20.4%	25.5%	37.3%	16.8%	100.0%
1	n	181	253	333	162	929
	% within KRP group	19.5%	27.2%	35.8%	17.4%	100.0%
2 and above	n	21	35	41	30	127
	% within KRP group	16.5%	27.6%	32.3%	23.6%	100.0%
Total	n	9187	11515	16797	7601	45100
	% of Total	20.4%	25.5%	37.2%	16.9%	100.0%

In addition, One-Way ANOVA was conducted to test the relationship between students' reading scale scores and the number of KRP teachers. The final analytical sample consist 44,584 students, where 516 cases were deleted due to univariate outliers. The descriptive statistics are shown in Table 4. The ANOVA test results, $F(2, 44581) = .281, p = .755$, indicate that none of the groups have significantly higher reading achievement scores than others. **However, the results show that students who had one KRP teacher did**

better than those who had none, and that students who were taught by 2 or more KRP teachers had the highest average achievement score, whereas the students who had not been taught by any KRP teachers had the lowest average achievement score compared to the two other groups.

Table 4

Number of KRP teachers	<i>n</i>	<i>M</i>	<i>SD</i>
0	43543	210.67	16.63
1	916	210.78	15.98
2 and above	125	211.75	17.50
Total	44584	210.68	16.62

5th grade

The final sample size of 5th grade is 44,963, where 1,164 of them were taught by KRP teachers. A 4×3 Chi Square test was conducted to examine the relationship between students' K-PREP reading performance levels and the number of KRP teachers a student had experienced. $\chi^2 = 1.84$, $df = 6$, $p = .934$, suggesting that the number of KRP teachers has no significant impact on students' reading K-PREP levels. The frequency of each category is listed in Table 5.

Table 5.

Number of KRP teachers		K-PREP Level				Total
		N	A	P	D	
0	n	8307	11058	16690	7744	43799
	% within KRP group	19.0%	25.2%	38.1%	17.7%	100.0%
1	n	188	246	386	188	1008
	% within KRP group	18.7%	24.4%	38.3%	18.7%	100.0%
2 and above	n	33	38	55	30	156
	% within KRP group	21.2%	24.4%	35.3%	19.2%	100.0%
Total	n	8528	11342	17131	7962	44963
	% of Total	19.0%	25.2%	38.1%	17.7%	100.0%

In addition, One-Way ANOVA was conducted to test the relationship between students' reading scale scores and the number of KRP teachers. The final analytical sample consist 44,421 students, where 542 cases were deleted due to univariate outliers. The descriptive statistics is shown in Table 6. In the ANOVA test results, $F(2, 44418) = .536$, $p = .585$, indicating that none of the groups have significant higher reading achievement scores than other groups. **However, the results show that students who had been taught by KRP teachers have higher average achievement scores than the students with no KRP teachers.**

Table 6

Number of KRP teachers	<i>n</i>	<i>M</i>	<i>SD</i>
0	43265	211.84	15.15
1	1000	212.31	15.21
2 and above	156	212.28	15.44
Total	44421	211.85	15.15

Limitations

This was the first year that CCLD was given access to the necessary data to do a value-added analysis. It is worth noting that the data was not made available until June 8, 2015, after the end of the regular school year when fewer personnel were available, and that the analysis to complete this report was required within two weeks. Thus, this first effort by CCLD's research office to provide this kind of analysis was somewhat cursory; hence the use of statistical analyses that are not well recommended because of their inadequacy for finding statistical significance in cases of this type (Ballou & Springer, 2015).

It should be understood that measuring the impact of a PD program on teaching quality by measuring teachers' impact on student achievement test scores is a statistically challenging endeavor. (See extensive discussion among statisticians on the difficulties with value-added measures of finding teacher effects: American Statistical Association, 2014; Amrein-Beardsley, 2014; Darling-Hammond, Amrein-Beardsley, Haertel, & Rothstein, 2012; Harris, 2011; Harris & Harrington, 2015; McCaffrey, Lockwood, Koretz, & Hamilton, 2003; National Research Council, 2010).

The teacher effect on student achievement as measured by g-weighted standardized tests of basic skills is about 10-15% of the variance in students' scores. This makes the teacher effect the largest of in-school variables, but still a small part of the larger equation. Moreover, as all teachers are effective to some degree, the difference between two teachers, or a teacher and a norm, will be only occasionally sufficient to rise to statistical significance for any given year (i.e., above the "margin of error"). Although this may be of value for policy purposes (e.g., to discover teachers whose impact is significantly and consistently below the norm), its use for research-grade evaluation of any teacher is doubtful (see description in Bill & Melinda Gates Foundation, 2012, 2013; Mihaley, McCaffrey, Staiger, & Lockwood, 2013).

The use of student test data to gauge the impact of PD is even more doubtful, because the effect of a professional development programs will be only a fraction of the teacher effect which is only a fraction of the student effect. As it is necessary, given typical class size, to average scores across several years to achieve an acceptable level of statistical reliability (year to year reliability of gauging teacher impact with student scores is low),

the impact of any one teacher must be diluted by the impact of the other teachers for that period (in our case, six years). Additionally, the effect of any particular PD must be diluted by the effect of any other PD or post-graduate education a teacher may have had during that period. Additionally, there will be the residual effect of experience over the period. Latency and atrophy of effects are issues about which educational statisticians have only recently begun to theorize (see reports in Harris & Harrington, 2015).

A better approach to measuring the success of PD may involve a pre- and post-test design to measure the impact of the PD on teacher practices. This would measure a PD program's ability to achieve promised and achieved outcomes. This kind of fidelity check should in any case be a necessary intermediary step before calculating teacher effects on students. Measures of teacher impact on student achievement cannot be definitively credited to a PD program, or any other variable, unless such an analysis is done. Data over time allowing for actual calculation of reliability and trends over time are needed. Finally, the inappropriate use of t-tests and similar statistics to calculate measurement error in value-added approaches is currently under-appreciated by policy makers (Ballou & Springer, 2015).

Conclusion on the Student Data Analysis of KRP Impact

With the above noted concerns and limitations in mind, we observe that CCLD's KRP project demonstrates a notably positive effect. To borrow the felicitous wording of Raudenbush (2015), writing on the success of the Gates' Foundation's Measurement of Effective Teaching Project (MET): "The relationships, though not strong, were statistically reliable and large enough to be of practical significance" (p. 138).

At least this much we can also say with certainty about the Kentucky Reading Project as a result of using value-added measures to gauge the impact of CCLD's high quality PD on student achievement. (See Table 1a, 1b, on following page.) The relationships of the presence of one or more 3rd or 4th grade KRP teacher to differences in student outcomes, though not strong, were statistically reliable and large enough to be of practical significance.

Conclusion

The survey, interview, and test score-based data analyzed for this report further establish the efficacy of CCLD's teacher education PD programs for core instruction K-12, as previously suggested by an earlier 4-year review (CCLD, 2014). Similar assessments are currently being conducted for CCLD's adult literacy PD program and have been periodically conducted for Kentucky Reading Recovery (Grade 1 intervention program).

Better approaches to using student test score data are needed, as is more timely delivery of such data for real time evaluation. But to our knowledge, there is no literacy teacher professional development or teaching training program in Kentucky that has superior data demonstrating impact and result than does CCLD, as set forth herein.

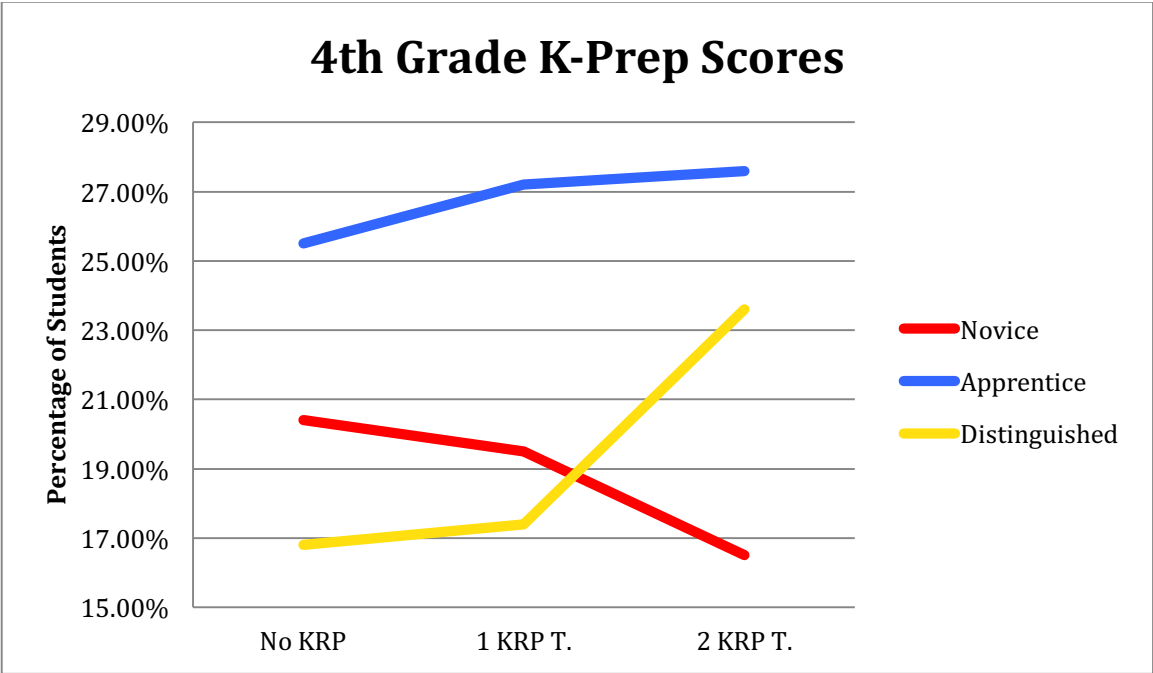
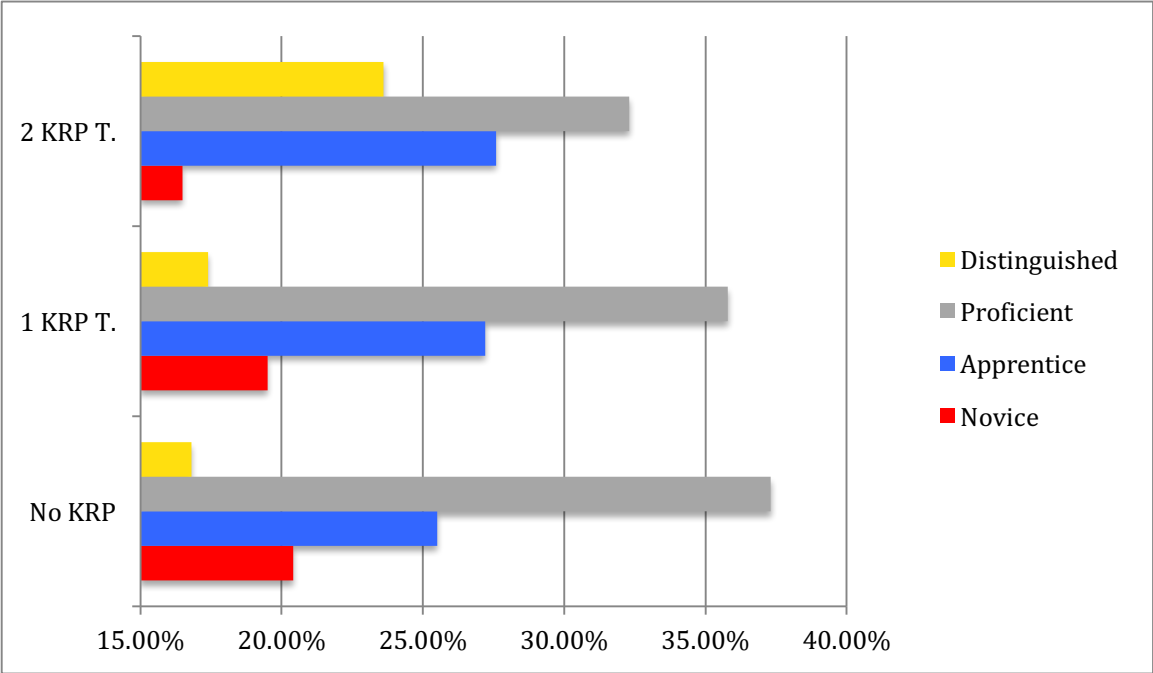


Figure 1: Table 1: Effect of number of KRP teachers a student has had over six years. One teacher in six years decreases likelihood of Novice (bottom) ranking and increases the likelihood of Distinguished (top) ranking. Two or more teachers in six years increased this effect. Drop in Proficient ranking demonstrates that students who would be at this ranking otherwise were assisted into the Distinguished ranking, while increase in Adequate ranking shows students who would be at Novice otherwise were moved to Apprentice.



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Appendix 1

Adolescent Literacy Project (ALP) - formerly LALLI
End of Year Evaluation Form

Date _____

Please indicate your teaching level:

 Middle School _____

 High School _____

 Other (specify, e.g., special ed) _____

Briefly answer the following questions:

How has participating in ALP/LALLI impacted your instructional practices?

What activities have been most beneficial to you?

What do you wish had been included that was not?

What were your biggest successes in implementing what you learned from ALP/LALLI?

What were your biggest challenges in implementing what you learned in ALP/LALLI?

How have your students benefit from what you have learned this year?

Other comments:

Appendix 2

ALP/LALLI Summer Institute 2013
Teacher Semi-Structured Interview

1. General information (name, age, gender, grade level taught, training, first time at LALLI)
2. Why did you sign up for LALLI?
3. What were you hoping to get out of it when you enrolled?
4. What was the main focus of the training you have attended?
5. What kinds of things have you learned this week?
6. What kinds of activities have you done this week during the institute?
7. What institute activities have been most meaningful to you?
8. Which instructional strategies/techniques do you think you might try first?
9. Which instructional strategies/techniques do you think might be most challenging to implement?
10. What kinds of supports do you need to be able to implement the things you learned?
11. How has this institute compared with other professional development in which you have participated?
12. Overall, are you satisfied with the information obtained during the training?
13. Will you attend in the future?
14. Would you recommend to others?
15. Any additional comments or suggestions?

Appendix 3

Kentucky Reading Project
Evaluation Form

Date _____

Please check one:

- Eastern Kentucky University
- Northern Kentucky University
- Kentucky State University
- University of Kentucky
- Morehead State University
- University of Louisville
- Murray State University
- Western Kentucky University

Please indicate your teaching level:

- Primary
- Intermediate
- Other (specify, e.g., special ed.)

For the following 5 questions please circle the appropriate description:

SA = Strongly Agree; A = Agree; D = Disagree; SD = Strongly Disagree

		SA	A	D	SD
1.	I learned useful instructional skills/concepts from KRP presentations.	4	3	2	1
2.	I learned useful theoretical and developmental concepts.	4	3	2	1
3.	I had opportunities to construct new understandings through dialogue and active participation.	4	3	2	1
4.	I received valuable classroom resources.	4	3	2	1
5.	I had an opportunity to reflect on what I learned.	4	3	2	1

7. What activities have been most beneficial to you?

8. What do you wish had been included that was not?

9. How will your classroom students benefit from the LAP you developed?

10. Other comments:

Appendix 4

2014 Principals and School Leaders Survey – KRP/ALP

1. Name of the school/district where you work
2. How familiar are you with the Kentucky Reading Project? (Unfamiliar; Know about it/Have heard about it; Have participated or staff have participated)
3. How familiar are you with the Adolescent Literacy Project? (Unfamiliar; Know about it/Have heard about it; Have participated or staff have participated)
4. How familiar are you with the Collaborative Center for Literacy Development? (Unfamiliar; Know about it/Have heard about it; Have participated or staff have participated)
5. In terms of teacher professional development, which do you prefer? (Online professional development; Face-to-face professional development; Blended/Hybrid)
6. Why do you prefer this type of teacher professional development?
7. What are your educators' greatest challenges in providing literacy instruction to students? (Lack of professional development; Emphasis on accountability; Time constraints; Financial constraints; State mandated programs; Other)
8. What are the top THREE literacy topics/areas you would like to see addressed in your school's PD? (Comprehension; Vocabulary; Assessment; ESL/diversity; Family engagement; Struggling learners; Content literacy; Digital and media literacies; Writing; Kentucky Core Academic Standards; Other)
9. How important are the following when choosing literacy professional development? (Short time frame; Continuous follow up; Cost; Online Delivery; Face-to-Face delivery; Topics covered; Schedule; Presenters/trainers leading the PD); Not important-Slightly Important-Somewhat Important-Very Important
10. In your opinion, what is the biggest literacy problem in Kentucky that researchers should study?
11. In terms of improving literacy achievement, what research is most needed in the state of Kentucky?