

Evaluation of the Balanced Literacy Implementation in Northwest Indiana

Jeanette Shutay, Calumet College of St. Joseph

Edward Schoenfelt, Lakeshore Alliance for Student Success, Inc.

Suki Monroe Glasser, Lakeshore Alliance for Student Success Trainer, SMG Literacy

A balanced literacy school focuses on activities such as shared and guided reading and writing through the utilization of literacy, listening and writing centers within a print-rich environment. This research project proposes to evaluate the implementation of the Balanced Literacy Initiative (BLI), which was spearheaded by the Lakeshore Alliance for Student Success, Inc. (LASS) in Northwest Indiana. Nineteen elementary schools received training, resources, and support to implement the program in grades K-2. The BLI program was implemented with the assistance of literacy coaches who provided professional development training for the participating teachers.

A balanced literacy school consists of certain characteristics that serve specific purposes, which relate to the development of literacy (e.g. reading, spelling and writing). The general characteristics of a balanced literacy school include the following: a community meeting area, with easel, paper, and supplies handy; tables of clustered desks; a small group meeting table for guided reading and writing; literacy centers with directions for use and appropriate materials available; writing centers; listening centers; displays of teacher/student made charts; evidence of shared writing; large print name chart, often moving to last name in grades 1 and 2; alphabet linking chart and/or blend chart hanging near meeting area; word wall: organized and large enough to be helpful and accessible to the students; work board (icons placed as a list of things to do); browsing boxes, either for individuals or groups; library organized by topic, theme, genre, author in baskets

The implementers of the Comprehensive Balanced Literacy Framework designed and delivered effective literacy instruction that is clearly aligned with research and motivates students to become lifelong readers and writers. The goal is continuous

improvement over time through the implementation of a high-quality instructional program for literacy and language in grades K-2.

The delivery system for instructional improvement is intensive and continuous professional development that not only includes informational sessions but coaching and consultation. The professional development program requires an initial training of 40 hours, as well as continuous ongoing training. Teachers take on new learning and apply it in their classrooms with the support of staff developers (literacy coaches) who have received special training to assist teachers in the classroom. Training sessions are held in the building after school; extensive use is made of videotape. In connection with course content, the literacy coach provides on-the-job assistance to teachers in classrooms as they implement and practice new approaches. Not only is there extensive, high-quality professional development, teachers also have a consultant available with whom they can talk about ideas and informally share problems. Another component of professional development is the training of a leadership team, which includes the principal, representatives of each grade level, the literacy coach, and specialist teachers. Teams are established at the primary level for specific training on instructional techniques.

Excellent, research-based practice is essential if we are to help all students become proficient readers; however, practice will be improved only through a comprehensive delivery system that provides ongoing professional development for teachers and monitors progress through the collection and examination of data.

The research based framework for balanced literacy (refer to Figure 1) represents periods set aside for language and literacy learning; however, teachers also integrate content area curricula with literature study and language/word study.

Language/Word Study Options	
<i>Kindergarten-Grade 1</i> [times adjusted for ½-day kindergarten]	<i>Grade 1 to Grade 2</i>
<u>Options—30 to 45 Minutes</u> <ul style="list-style-type: none"> • Interactive Read-Aloud • Shared Reading • Interactive and Shared Writing • Connections to Content Areas • Word Study Mini-lesson 	<u>Options—30 to 45 Minutes</u> <ul style="list-style-type: none"> • Interactive Read-Aloud • Shared Reading • Interactive and Shared Writing • Connections to Content Areas • Word Study Mini-lesson • Buddy Study System

Reading Workshop	
<i>Kindergarten-Grade 1</i>	<i>Grade 1 to Grade 2</i>
<u>30 to 45 Minutes</u> <ul style="list-style-type: none"> • Independent Reading • Independent Language and Literacy Work at “Centers” (pocket chart, word study center, listening center, writing center, drawing, browsing boxes) • Sharing 	<u>45 to 60 Minutes</u> <ul style="list-style-type: none"> • Guided Reading • Independent Language and Literacy Work at “Centers” (pocket chart, word study center, listening center, writing center, drawing, browsing boxes) • Sharing

Writing Workshop	
<i>Kindergarten-Grade 1</i>	<i>Grade 1 to Grade 2</i>
<u>30 to 45 Minutes</u> <ul style="list-style-type: none"> • Mini-lesson • Independent Writing and Conferencing • Interactive Writing—Small Group • Sharing 	<u>60 Minutes</u> <ul style="list-style-type: none"> • Mini-lesson • Independent Writing and Conferencing • Interactive Writing—Small Group • Sharing

Figure 1. Framework for literacy elements K-2 (Adams, 1990; Anderson, 1996; Bear, Templeton, & Johnston, 1996; Bissess, 1980; Britton, 1983; Button, Johnson, & Furgerson, 1996; Calkins, 1983; Cassady, 1998; Clay, 1975; Clay, 1991; Clay, 1991b; Cochran-Smith, 1984; Cohen, 1968; Durkin, 1966; Dyson, 1982; 1988; Ferreiro & Teberosky, 1982; Goodman, 1984; Graves, 1983; Graves & Hanson, 1983; Green & Harker, 1982; Harste, Woodward, & Burke, 1984; Henk & Melnick, 1995; Hiebert, 1988; Holdaway, 1979; Huck, Helper, & Hickman, 1992; Kirk, Kirk, & Minskoff, 1985; Lyons, Pinnell, & DeFord, 1993; Martinez & Roser, 1985; McCarrier & Patacca, 1994; McCarrier, Fountas, Pinnell, 2000; McKenzie, 1986; Meek, 1982; Metzger, 1998; National Center on Education and the Economy, 1999; Ninio, 1980; Pappas & Brown, 1987; Pinnell & McCarrier, 1994; Read, 1970; 1975; Routman, 1991; Rowe, 1987; Schickendanz, 1978; 1986; Shook, Klein, & Swartz, 1998; 2002; 2003; Snow, 1983; Sulzby, 1985; Taylor, 1998; Teale & Sulzby, 1986; Wells, 1985; Wong, Groth, & O’Flahavan, 1994).

Although there have been some preliminary studies conducted on the value-added effects of balanced literacy through the use of literacy coaches, Biancarosa et al (2008) have indicated that there is still a “pressing need” to determine why the effects of the literacy coaches vary between teachers and schools. This study seeks to not only replicate the findings of Biancarosa, et al, but to replicate them based on a sample of students and schools in Northwest Indiana and to determine the reasons for the variability in the effectiveness of the implementation through the use of a meta-analytic design.

Methods

Participants

This evaluation study was based on a total of 19 elementary schools located in Northwest Indiana who had participated in the balanced literature initiative. Although data were collected for a total of 5469 cases, only students in grades one and two who had both pre and post assessment data were included in this study for a total of 5013 cases over the course of one to three years (2008-2009, 2009-2010, 2010-2011), depending on the school. Therefore 91.7% of the students tracked had both pre and post assessment data and were therefore included in this study. Of the 5013 cases, 2469 (49.3%) consisted of first graders and 2544 (50.7%) consisted of second graders. Although this was a longitudinal study were some of the same students were represented in grades one and two, the grades were analyzed separately and therefore the unit of analysis for this study was the case and not necessarily the student. Also, it was not always possible to match students’ first year data with their second year data given that the identifier provided by the school representative was not always consistent. Finally,

the enrollment number, the percent low income (free or reduced lunch status), and the percent of minority students at the school level are descriptively summarized in Table 1.

Table 1

School Level Demographic Variables

Source	<i>n</i>	Minimum	Maximum	Mean	<i>SD</i>	Skew
Enrollment	19	271	770	507.00	153.22	0.12
Percent low income	19	25%	91%	66%	19%	-1.45
Percent minority	19	8%	98%	67%	24%	-0.70

Every school represented in this study had at least one year of data. Four schools had only one year of data (three with data for the first year of the balanced literacy implementation and one with the data for the second year of the balanced literacy implementation only), 14 schools had two years of balanced literacy data, and one school had three years of balanced literacy data.

Student level data were collected for several variables, but not all of the schools involved in the study provided student level data for every variable, and therefore those variables with missing data were not included in the school level analyses. The variables in which data were collected include gender of student, teacher identification (classroom or teacher effects), whether or not the student received free or reduced lunch, whether or not the student had been retained at some point, whether or not the student had been identified as having one or more disabilities, and whether or not the English was a second language. Table 2 provides the missing data rates for each of the demographic student level variables.

Table 2

Missing Data Rates for Student and Classroom Level Variables

Source	<i>N</i>	<i>n</i>	Percent
Grade level	5013	5013	100%
Gender	5013	4677	93%
Disability	5013	5013	100%
Free/reduced lunch	5013	5013	100%
English as a second language	5013	5013	100%
Retained	5013	4883	97%
Teacher	5013	4279	85%

Materials

Student level achievement data were collected at a minimum every fall and spring of each academic year for a total of two to three years of data, depending on the school. In addition, teacher observation data were collected during the first year of the study in order to determine the degree to which the implementation of balanced literacy was evident in the classrooms and the schools. While the observations were conducted at the classroom and school level, the results were reported at the aggregate level.

Fountas & Pinnell. Fountas and Pinnell (2007) was the literacy assessment system used for this study. The results of the assessment yield data in the form of reading levels (e.g., Level A through Level Z). Within each grade level, a student receives a reading level score that is based on the students' independent reading level and the students' instructional level. The results of this study are based on the instructional level

given that a students' proficiency level is based on his or her instructional level. The students' reading level, the time of the year the student was tested, and the grade level are used to determine the students' proficiency level. There are four levels of proficiency: (1) does not meet expectations, (2) approaches expectations, (3) meets expectations, and (4) exceeds expectations. Therefore the students in this study received a proficiency level rating ranging from one to four, and the student's proficiency rating (ability to meet the grade level standard) was used to determine student growth and therefore the impact of the implementation of the balanced literacy initiative. Using the degree to which the students were able to meet the grade level standard helped to avoid the issue of improved reading ability simply due to maturation.

Teacher observation checklist. The teacher observation checklist is based on the 14 general characteristics of balanced literacy in addition three school-wide characteristics, which include a book room, a data wall, and a print rich environment. The observations done at the classroom level and the school level are completed by a literacy coach and a non-literacy coach, and then the ratings are compared and combined for a total observational rating. In addition, the observations are conducted before and after the introduction of a literacy coach within the classroom. At the classroom level, the observations are recorded in terms of there being evidence of the characteristic in place versus not in place (binary outcome). At the school level, the observations are recorded in terms the characteristics being clearly evident versus not observed (binary outcome). The percentages are computed in order to determine the degree to which the implementation of balanced literacy is evident in the classrooms and the schools.

Table 3 provides the overall percentage of classroom level observations providing evidence of the implementation of balanced literacy by balanced literacy for the spring of 2009 and the spring of 2010. Each classroom was observed twice. The results for 2009 are based on 12 literacy coach classrooms versus 12 non-literacy coach classrooms, and the 2010 results are based on 11 literacy coach classrooms versus 11 non-literacy coach classrooms. The 2009 results indicate that 74% of the observations provided direct evidence of the implementation of balanced literacy components within the literacy coach classrooms versus 34% for the non-literacy coach classroom. The variation across the 14 components ranged from 42% to 100% for the literacy coach classrooms. The 2010 results indicate that 79% of the observations provided direct evidence of the implementation of balanced literacy components within the literacy coach classrooms versus 29% for the non-literacy coach classrooms. The variation across the 14 components ranged from 45% to 100% for the literacy coach classrooms.

Table 3

Classroom Level Observational Results for 2009 and 2010

Source	2009	2010
Literacy coach classrooms	74%	79%
Non-literacy coach classrooms	34%	29%

Table 4 displays the percentage of classrooms that contained evidence of the implementation of balanced literacy based on an audit of 12 independent classrooms before and after the introduction of a literacy coach in the classroom. In aggregate, the before literacy coach rate was 33% and the after literacy coach rate was 92%. The

variation across the 14 components before the literacy coach ranged from 0% to 67%, and the variation across the 14 components after the literacy coach ranged from 75% to 100%.

Table 4

Classroom Level Observational Results Before and After Literacy Coach

Evidence based on 12 independent classrooms:	Before	After
1. Community meeting area, with easel, paper and supplies handy	67%	100%
2. Tables of clustered desks, and work areas are arranged to, promote collaborative learning, and problem solving	67%	100%
3. Small group meeting table for guided reading or guided writing	67%	100%
4. Literacy centers, with directions for use and appropriate materials available	17%	100%
5. Materials and procedures for Listening center	33%	92%
6. Materials and procedures for Writing Center	25%	92%
7. Displays of teacher/student made charts	17%	100%
8. Evidence of shared writing and/or interactive	0%	100%
9. Large print name chart, often moving to last name	0%	75%
10. Alphabet linking chart and or blend chart hanging near meeting area	17%	75%
11. Word wall: organized and large enough to be helpful and accessible to the students	50%	83%
12. Work board (icons placed as a list of things to do)	17%	100%
13. Browsing boxes, either for individuals or groups	33%	83%
14. Library organized by topic, theme, genre, author in baskets	58%	83%

Procedures

School related data were extracted directly from the Indiana Department of Education website (<http://www.doe.in.gov/data/>). Student and teacher level data were obtained from the literacy coaches who collected the data via the Fountas & Pinnell (2007) and teacher observation forms. The teacher training was implemented by Purdue University Calumet via the use of literacy coaches, and the training was conducted over the course of two years. Team planning was a significant component of the training.

Balanced literacy training. During the first year of the training, the literacy coaches received four weeks of training across the school year at a Purdue site in Merrillville, Indiana. This training included an in-depth study of effective literacy practices, including the Fountas & Pinnell literacy framework (Fountas & Pinnell, 2007). This framework includes the theoretical base for literacy practices. In addition, the literacy coaches in training carried out those practices in a classroom during half the day, using a professional development model of learning through close observation and assessment of children coupled with reflective analysis of teaching and student learning. Site visits and coaching were provided from LASS trainers to every literacy coach twice a year to monitor implementation of the framework. Additionally, school teams spent four days in study of effective models of literacy teaching and learning and in a guided-planning process with study in school reform. The work completed in team planning lead to the development of a comprehensive plan for the school.

During the second year of the training, the literacy coaches received three weeks of training across the school year that focused on adult learning, leading a reflective process, and coaching. This training took place at every school site involved in the

project. Each coach had the experience of teaching a lesson in their school in front of peer literacy coaches and was coached by a colleague in training on that lesson. This provided every literacy coach with the experience of being coached by a peer and coaching a colleague. Schools began their professional development process and implementation of their plans having the literacy coach plan and lead professional development sessions. Literacy coaches were provided individual site visits and coaching by LASS trainers during a professional development session at their school and coaching a teacher.

Team planning. Team planning was designed to support the school administration, faculty, and literacy team during the literacy coaches' first training year as they developed the comprehensive plan for their school. Schools sent a literacy team to four team-planning seminars during the literacy coordinator training weeks and to ongoing professional development. The seminars provided the following information: detailed explanation and examples research-based literacy practices; detailed explanations and examples of exemplary school reform models in literacy; assessment information and data analysis for school reform decisions; using student observation and assessment for instructional decisions in classrooms; and building communication between school, parents, and community members; team building / school community activities to develop school culture. Each team was expected to complete the comprehensive school plan for improving literacy teaching and learning and then monitors their progress toward pre-determined and measurable goals.

Design and Data Analysis

This study consisted of two phases, which included a pre-experimental study at the school level and a meta-analysis at the regional level. The data were analyzed at the school level first by computing the effect size associated with the implementation of balanced literacy. The effect size was based on student growth from the pretest to the posttest as measured by the extent to which the student met the reading level standard for his or her grade level according to the Fountas & Pinnell reading assessment. Only grades one and two were included in this study, and the two grade levels were analyzed separately. In addition to computing the effect size for each school, the potential moderating effect of the teacher (classrooms within a given school), the year of the implementation within each school, the gender of the student, the disability status of the student (yes versus no), the income level of the student (free/reduced lunch versus paid lunch), whether or not English was a second language (ESL) was tested for each school. Retention was not considered as a moderator given that so few students had been retained. Finally, the effect size at the regional level (Northwest Indiana) was computed, and then the potential moderating school level effects such as enrollment size, percent low income, and percent minority were tested in order to determine the extent to which they explained differences in the effect sizes for the 19 schools.

All of the statistical analyses were conducted using SPSS (version 20). The school level analyses were conducted by using a non-parametric within groups test known as the Wilcoxon test given the ordinal nature of the data. The school level moderators were tested by using a non-parametric between groups test such as the Kruskal-Wallis test for grouping variables with more than two levels and the Mann-

Whitney U test for grouping variables with only two levels (each moderator was tested independently). The effect sizes were reported in terms of a correlation coefficient, therefore all z scores resulting from the non-parametric tests were converted to r values using the following formula: $r = z/\sqrt{n}$ (Cooper & Hedges, 1994). The effect size based on the meta-analysis where all students were included in one single analysis was determined by the same non-parametric within groups analysis (Wilcoxon test). Finally, the moderators for the final meta-analysis were tested by including the overall effect size for each school into a regression model and then testing the significance and amount of variance explained by each of the three school level moderators. The effect sizes were based on standardized regression beta weight in order to have all of the effect sizes based on the same underlying metric.

Results

The results for each school are presented first, which includes the overall school effect sizes by grade level, and the results of the test for moderators within each school. This section concludes with a presentation of the results at the meta level, which is based on the overall analysis of the data (all students in one analysis) as well as the results based on the test for moderators of effect size.

Table 5 contains the school level effect sizes along with the effect size for each moderator tested for first grade. The results indicate that the effect sizes were all positive, ranging from a low of .08 to a high of .64. The results also indicate that the number of significant moderators within a school ranged from none to as many as four, and the moderator variable that was statistically significant most often was the year of the balanced literacy implementation (e.g., first year versus second year of implementation).

Table 5

School Level Balanced Literacy Effect Sizes and Moderator Effect Sizes for Grade One

ID	(r)	Within school moderator (r)					
		Teacher	Year	Gender	SES	ESL	Disability
1	.64**	.22	na	.41**	.00	.05	-.18
2	.47**	.49**	-.19**	.00	.05	.00	-.10
3	.30	.14	.09	.08	-.10	.03	.03
4	.33**	.18	.00	.09	.03	.07	.06
5	.08	.31*	.33**	.04	-.31**	.21*	-.03
6	.34**	.23	.19*	.10	.03	.08	-.11
7	.61**	.32*	-.05	-.12	-.06	.03	.07
8	.49**	.33*	-.16*	.07	.08	.14	-.09
9	.31**	na	.10	-.07	-.04	.00	.00
10	.55**	.24	.13	-.17	.00	.11	-.13
11	.24	.42	na	.06	-.25	.12	-.03
12	.19	.37	na	-.08	na	.14	-.03
13	.61**	.27	-.05	.07	-.03	.04	.00
14	.39**	na	-.61**	.00	-.03	.18*	-.03
15	.46**	.00	na	-.20	na	.08	-.15
16	.14	na	-.44**	.20	.10	.16	-.30**
17	.64**	.16	.16	.07	na	.11	-.13
18	.49**	.10	na	-.06	.19	na	-.03
19	.61**	.19	-.12	-.15	na	.09	-.04

Notes. Year 1 was coded as 1 and Year 2 was coded as 2. Males were coded as 1 and females were coded as 0. Free/reduced lunch students were coded as 1 and paid lunch students were coded as 0. English as a second language students were coded as 1 and native English speakers were coded as 0. Disabled students were coded as 1 and non-disabled students were coded as 0. NA=not available.

* $p < .05$. ** $p < .01$.

For those schools with significant moderator effects for implementation year, four of the schools had greater gains in year one and two schools had greater gains in year two of the implementation. However, three of the four schools with greater gains in Year 1 had large to very large gains for Year 1 (e.g., mean gain of 0.75 to 1.44).

Only one school had a significant moderator effect based on gender with male students having significantly greater gains than female students, although both groups yielded positive gains on average ($M_f=0.42$, $M_m=1.32$).

For SES, only one school had a significant moderator effect for SES where the paid lunch students had statistically significantly greater gains than did the free/reduced lunch students. In addition, those four schools with all low SES students showed mean gains ranging from 0.18 to 0.81. Therefore, schools that serve all free/reduced lunch students enjoyed positive gains on average.

Two schools had a significant moderator effect for ESL where ESL students had significantly lower gains than students where English was their native language. Furthermore, for one of the schools, ESL students showed a mean decrease of -0.40 ($n=20$) and for the other school ESL students showed a mean increase of 0.59 ($n=27$).

Finally, the results for disability status indicate that a significant effect emerged for only one school with disabled students having significantly lower gains on average than students without a disability. In fact, those with a disability had a mean decrease of -0.75, although the sample size was very small ($n=8$).

Table 6 contains the school level effect sizes along with the effect size for each moderator tested for second grade. The results based on the overall effect sizes indicate that the effects varied substantially from one school to the next with some being large and

negative and other effects being large and positive. The results also indicate that the moderator with the greatest number of significant effects included the year of the implementation. Specifically, 3 out of the 8 significant effects were negative indicating that the effect size was smaller for the second year of the implementation when compared to the first year of the implementation. Two of the three schools with a larger effect size for Year 1 in second grade also had a larger effect for Year 1 within the first grade. Finally, two of those schools had a moderate to large mean gain in Year 1 (e.g., 0.51 and 0.79) while the other school was associated with a small negative gain (e.g., -0.08).

Two schools resulted in a significant moderator effect for gender with one school showing an advantage for males and the other school showing an advantage for females. The same finding emerged for SES with one school showing an advantage for free/reduced lunch students and the other school showing an advantage for paid lunch students. Therefore no systematic moderator effect was detected in the data with regard to gender or SES.

Two schools resulted in a significant moderator effect for ESL with ESL students having the advantage in both schools. Furthermore, one of the two schools with a significant moderator effect for ESL also had a significant positive moderator effect for grade one. Therefore, ESL students appear to be equally impacted by the implementation of balanced literacy or more positively impacted.

Finally, three schools were associated with significant moderator effects for disability status with two of the effects being positive and one effect being negative. None of these three schools had significant effects for grade one. Therefore, the moderator effect of disability status appears to be a random variable.

Table 6

School Level Balanced Literacy Effect Sizes and Moderator Effect Sizes for Grade Two

ID	(r)	Within school moderator (r)					
		Teacher	Year	Gender	SES	ESL	Disability
1	-.03	.55**	-.34**	.00	-.37**	-.04	.21*
2	.21**	.21	.00	.08	.00	-.05	-.13*
3	.20**	.28*	.15*	.12	.00	-.05	.06
4	-.04	.04	.19*	.00	-.12	.13	-.06
5	-.03	.23*	.26**	.12	-.09	.23*	-.17
6	.42**	.31	na	-.14	.00	.00	.14
7	.57**	.24	.08	-.18	.08	.03	.07
8	.35**	.30**	-.21**	-.22**	.00	-.03	.08
9	-.04	na	.20**	-.03	.00	.12	.21**
10	-.12	.21	.05	.00	.00	.03	.11
11	-.46**	.29	na	.32*	.13	-.13	.10
12	-.18	.69**	na	-.14	na	-.22	.03
13	.11	.44**	.16*	.26**	.14*	.12*	.06
14	.51**	na	-.03	.03	.07	.05	-.11
15	-.42**	.20	na	.08	na	.09	.24
16	.24*	na	-.36**	-.09	-.06	-.10	.06
17	.03	.14	.16	.08	.00	.17	.00
18	.12	.25	na	.09	.03	na	-.15
19	.48**	.48**	na	.09	na	na	.00

Notes. Year 1 was coded as 1 and Year 2 was coded as 2. Males were coded as 1 and females were coded as 0. Free/reduced lunch students were coded as 1 and paid lunch students were coded as 0. English as a second language students were coded as 1 and native English speakers were coded as 0. Disabled students were coded as 1 and non-disabled students were coded as 0. NA=not available.

* $p < .05$. ** $p < .01$.

The descriptive statistics by grade level based on the entire (aggregated) dataset are presented in Table 7. The results indicate that when looking at the effect of the implementation of balanced literacy at the aggregate level, the first grade effect size was 0.43 and the second grade effect size was 0.13. The results also highlight the fact that on average, students were much closer to meeting the standard (score of 3.00) in the second grade than they were in the first grade, which may have impacted the ability of the balanced literacy program to have an impact on student performance.

Table 7

Aggregate Level Effect Sizes by Grade Level

Grade level	<i>n</i>	Pre score		Post score		Effect size	<i>p</i>
		Mean	<i>SD</i>	Mean	<i>SD</i>		
First grade	2469	2.42	1.28	2.92	1.23	0.43	< .001
Second grade	2544	2.85	1.29	2.96	1.21	0.13	< .001

Finally, the results based on the test for moderators of effect size for the 19 schools are featured in Table 8. The results indicate that none of the moderators were statistically significant for grade one or grade two, $p > .05$, which suggests that factors outside of school level demographic characteristics may moderate the effect of the implementation of balanced literacy on student gains in reading as measured by the Fountas & Pinnell (2007). Other possible moderating factors may include, but not be limited to, differences in the implementation fidelity between schools.

Table 8

Meta-Analysis Moderator Results by Grade Level

Grade level	B	SE	t	β	p
First grade					
Enrollment	0.000	0.002	0.14	.26	0.282
% minority	-0.099	0.962	-0.10	-.19	0.441
% low income	-0.188	1.206	-0.16	-.29	0.235
Second grade					
Enrollment	0.000	0.002	0.15	.28	0.243
% minority	0.086	0.955	0.09	.16	0.668
% low income	-0.128	1.220	-0.10	-.19	0.430

Notes. The standard errors (*SE*) were adjusted by dividing the each *SE* by the square root of the mean square error from the ANOVA regression model (Cooper & Hedges, 1994).

Discussion

The purpose of this evaluation was to replicate the findings of Biancarosa, et al, but to replicate them based on a sample of students and schools in Northwest Indiana and to determine the reasons for the variability in the effectiveness of the implementation through the use of a meta-analytic design.

School Level Moderators

The results of this study based on the within school moderator tests indicate that the only systematic factors that appear to have moderated the effects of the balanced literacy implementation on student gains in reading as measured by the Fountas & Pinnell (2007) include teacher or classroom effects and the year of the implementation. These

results suggest that the effect of the balanced literacy program may depend on the ability level of the teacher to properly implement the program, which could pertain to the thoroughness of the implementation and/or the accuracy or skill level of the teacher in terms of implementing the program.

The moderating effect of the year depended on the school with some schools having larger effects for Year 1 and other schools having larger effects for Year 2. For first grade, larger effects were more common for the first year of the program, which may be due to the fact that Kindergarten students were also exposed to the balanced literacy program and therefore many were in their second year of treatment by the time they were in the first grade. However, for second grade, the effect of year was mixed. Regardless of the grade level, it is difficult to determine whether or not those schools that yielded better gains during their second year of the implementation had better gains because they were implementing with more consistency and fidelity during the second year, or if the results may have been due to teacher effects. Similarly, it is difficult to determine whether or not those schools who yielded better gains in their first year of the implementation had better gains because their first year gains were large resulting in stronger students coming into the next grade level for the second year of the implementation, or if the differences were due to teacher effects.

Meta-Analysis Moderators

The results based on the meta-analysis suggest that factors outside of school level demographic characteristics may moderate the effect of the implementation of balanced literacy on student gains in reading as measured by the Fountas & Pinnell (2007) given that none of the moderators were statistically significant. Therefore, other possible

moderating factors may account for the differences between the schools in terms of their obtained effect. Some potential mediating or moderating factors may include, but not be limited to, differences in teacher skill and buy-in, differences in the level of resources provided for the implementation, and/or differences in the literacy coach training process. Therefore further research may be needed whereby the fidelity of the implementation is more closely and precisely measured at the school level with a particular focus on the extent to which the individual 14 components were implemented and the quality level or skill level of the teachers who participated in the implementation of the program.

Conclusions

The results of this study suggest that the effect of the implementation of balanced literacy varies substantially based on the school, although the results tend to be more favorable than unfavorable. The differences between the schools with regard to their measured effect of balanced literacy on student gains in reading were not explained by school level factors such as enrollment size, percent minority, or percent low income. The results of this study also suggest that balanced literacy is more effective with regard to increasing student ability to meet or exceed grade level standards in reading for first grade students than it is for second grade students. This conclusion is based on the fact that all 19 schools featured in this study were associated with positive overall gains for first grade while 8 out of the 19 schools were associated with negative overall gains for second grade, with two of those negative effects reaching statistical significance. Furthermore, the aggregate effect size for grade one was 0.43 while the aggregate effect size for grade two was 0.13.

References

- Adams, M.J. (1990). *Beginning to read: Thinking and learning about print*. Cambridge, MA: MIT Press.
- Anderson, R.C. (1996). Research foundations to support wide reading. In [SEP]Creany, V. (Ed.), *Promoting reading in developing countries*, (pp. 44-77). [SEP]Newark, DE: International Reading Association.
- Bear, D., Invernizzi, M., Templeton, S., & Johnston, F. (1996). *Words their [SEP]way*. Upper Saddle River, NJ: Prentice-Hall, Inc.
- Biancarosa, G., Bryk, A., Dexter, E., & Kerbow, D. (2008, December). *Assessing the Value-Added Effects of Literacy Collaborative Professional Development on Student Learning*. Paper presented at the National Reading Conference, Orlando, FL.
- Bissex, G. L. 1980. *Gnys at wrk: A child learns to write and read*. Cambridge, MA: Harvard University Press.
- Britton, J. 1983. Writing and the Story World. In *Explorations in the Development of Writing: Theory, Research and Practice*, edited by B. Kroll and G. Wells. Chichester, England: John Wiley.
- Button, K., Johnson, M.J., & Furgerson, P. (1996). Interactive writing in a [SEP]primary classroom. *The Reading Teacher*, 49(6), (pp. 446-454).
- Calkins, L. M. (1983). *Lessons from a child*. Portsmouth, NH: Heinemann.
- Cassady, J.K. (1998). Wordless books: No-risk tools for inclusive [SEP]middle-grade classrooms. *Journal of Adolescent & Adult Literacy*, 41(6), (pp. [SEP]428-432).
- Clark, M. (1976). *Young fluent readers*. London: Heinemann.

Clay, M. (1975). *What did I write?* Exeter, NH: Heinemann.

Clay, M. (1991). *Becoming literate: The construction of inner control*. Auckland NZ: Heinemann.

Clay, M.M. (1991b, December). Introducing a new storybook to young readers. *The Reading Teacher*, 45, (pp. 264-273).

Cochran-Smith, M. (1984). *The making of a reader*. Norwood, NJ: Ablex.

Cohen, D. (1968). The effect of literature on vocabulary and reading achievement. *Elementary English*, 45, 209-213, 217.

Cooper, H. & Hedges, L. (Eds.) (1994). *The handbook of research synthesis*. New York, NY: Russell Sage Foundation.

Durkin, D. (1966). *Children who read early*. New York: Teachers College Press. [L]
[SEP]

Dyson, A.H. (1982). Reading, writing and language: Young children solve the written language puzzle. *Language Arts*, 59, (pp. 829-839)[L]
[SEP]

Dyson, A.H. (1988). Negotiating among multiple worlds: The space/time dimensions of young children's composing. *Research in the Teaching of English*, 22(4), (pp. 355-390).

Ferreiro, E. & Teberosky, A. (1982). *Literacy before schooling*. Portsmouth, NH: Heinemann.

Fountas, I. & Pinnell, G (2007). *Benchmark Assessment System 1* Grades K-2, Levels A-N. Portsmouth, NH: Heinemann.

Goodman, Y. (1984). The development of initial literacy. In H. Goelmann, A.A. Oberg, and F. Smith (Eds.), *Awakening to literacy*. Portsmouth, NH: Heinemann.

Graves, D. (1983). *Writing: Teachers and Children at Work*. Portsmouth, N.H.:

- Heinemann.
- Graves, D., & Hansen, J. (1983). The author's chair. *Language Arts*, 60(2), 176-183.
- Green, J.L., & Harker, J.O. (1982). Reading to children: A communicative process. In J.A. Langer & M.T. Smith-Burke (Eds.). *Reader meets author/Bridging the gap: A psycholinguistic and sociolinguistic perspective*, (pp. 196-221). Newark, DE: International Reading Association.
- Harste, J., Woodward, V., and Burke, C. (1984). *Language stories and literacy lessons*. Portsmouth, NH: Heinemann.
- Henk, W.A., & Melnick, S.A. (1995, March). The Reader Self-Perception Scale (RSPS): A new tool for measuring how children feel about themselves as readers. *The Reading Teacher*, 48(6), (pp. 470-483).
- Hiebert, E.H. (1988). The role of literacy experiences in early childhood programs. *The Elementary School Journal*, 89(2), 161-171.
- Holdaway, D. (1979). *The foundations of literacy*. Exeter, NH: Heinemann.
- Huck, C.S., Hepler, S., & Hickman, J. (1992). *Children's literature in the elementary school* (5th ed.). Fort Worth, TX: Harcourt Brace Jovanovich.
- Kirk, S., Kirk, W., & Minskoff, E. (1985). *Phonic remedial reading lessons*. Novato, CA: Academic Therapy Publications.
- Lyons, C.A., Pinnell, G.S., & DeFord, D.E. (1993). *Partners in learning: Teachers and children in Reading Recovery*. New York: Teachers College Press.
- Martinez, M., & Roser, N. (1985). Read it again: The value of repeated readings during storytime. *Reading Teacher*, 38, 782-786.

- McCarrier, A. M., & Patacca, I. (1994). "Children's Literature: The Focal Point of an Early Literacy Learning Program." In *Extending Charlotte's Web*, edited by B. Cullinan and J. Hickman. Norwood, MA: Christopher-Gordon.
- McCarrier, A., Fountas, I., & Pinnell, G. (2000). *Interactive writing: How language and literacy come together*. Portsmouth, NH: Heinemann.
- McKenzie, J. (1986). *Journeys into literacy*. Huddersfield, England: Schofield and Sims.
- Meek, M (1982) *Learning to Read*. London: Bodley Head.
- Metzger, M. (1998, November). Teaching reading: Beyond the plot. *Phi Delta Kappan*, 80(3), (pp. 240-246, 256).
- National Center on Education and the Economy. (1999) *Reading and writing by grade: Primary literacy standards for Kindergarten through third grade*.
- Ninio, A. (1980). Picture-book reading in mother-infant dyads belonging to two subgroups in Israel. *Child Development*, 51, 587–590.
- Pappas, C.C., & Brown, E. (1987). Learning to read by reading: Learning how to extend the functional potential of language. *Research in the Teaching of English*, 21, 160-174.
- Pinnell, G.S., & McCarrier, A. (1994). Interactive writing: A transition tool for assisting children in learning to read and write. In E. Hiebert & B. Taylor (Eds.). *Getting reading right from the start: Effective early literacy interventions*. Needham Heights, MA: Allyn & Bacon.
- Read, C. 1970. "Children's Perceptions of the Sounds of English." Doctoral dissertation, Harvard University, Cambridge, MA.
- Read, C. (1975). *Children's categorization of speech sounds in English*. Urbana, IL:

- National Council of Teachers of English.
- Routman, R. (1991). *Invitations*. Portsmouth, NH: Heinemann.
- Rowe, D.W. (1987). Literacy learning as an intertextual process. *National Reading Conference Yearbook*, 36, (pp. 101-112).
- Schickendanz, J. (1978). "Please read that story again!" Exploring relationships between story reading and learning to read. *Young Children*, 33(5), (pp. 48-56).
- Schickedanz, J. (1986). *More than the ABCs*. Washington, DC: National Association for the Education of Young Children.
- Shook, R.E., Klein, A.F., & Swartz, S.L. (1998). *Building blocks of beginning literacy*. Carlsbad, CA: Dominie Press.
- Snow, C.E. (1983). Literacy and language: Relationships during the preschool years. *Harvard Educational Review*, 53(2), (pp. 165-189).
- Sulzby, E. (1985). Children's emergent reading of favorite storybooks: A developmental study. *Reading Research Quarterly*, 20(4), (pp. 458-481).
- Taylor, D. (1998). *Family literacy*. Exeter, NH: Heinemann.
- Swartz, S.L., Shook, R.E., & Klein, A.F. (2002). *Shared reading*. Carlsbad, CA: Dominie Press.
- Swartz, S.L., Shook, R.E., & Klein, A.F. (2003). *Guided reading and literacy centers*. Carlsbad, CA: Dominie Press.
- Teale, W.H., & Sulzby, E. (Eds.). (1986). *Emergent literacy: Writing and reading*. Norwood, NJ: Ablex.
- Wells, C.G. (1985). Preschool literacy-related activities and success in school. In D. Olson, N. Torrance, & A. Hildyard (Eds.), *Literacy, language, and learning: The*

nature and consequences of literacy, (pp. 229-255). Cambridge, England:
Cambridge ^[L]_[SEP]University Press.

Wong, S.D., Groth, L.A., & O'Flahavan, J.D. (1994). Characterizing teacher-student
interaction in Reading Recovery lessons. ^[L]_[SEP]Universities of Georgia and
Maryland, National Reading Research Center Reading Research Report.