Pennsylvania Educational Leadership

Pennsylvania Educational Leadership

Volume 36, Number 1
Fall 2016

Editor

Kathleen Provinzano
Drexel University

Editor Emeritus

Robert F. Nicely, Jr.

Pennsylvania Association
for
Supervision and Curriculum Development

Executive Committee

President
Jeffrey M. Taylor
North Hills SD

Past President
Lori J.Stollar
Littlestown Area SD

Interim Treasurer
Gretchen Cetti
PASCD

Executive Director
Richard D. Nilsen
Eastern Lebanon County SD (ret.)

Website

http://www.pascd.org/

Pennsylvania ASCD…
Educators impacting teaching and
learning through leadership.

Pennsylvania Educational Leadership

Volume 36, Number 1 - Fall 2016

Table of Contents

Pennsylvania Educational Leadership

Acknowledgments

PEL would like to thank the following reviewers for the Fall 2016 issue.

The Impact of Flipped Learning on Student Achievement in an Eighth-Grade Earth Science Classroom

Colleen M. Duffy
Misericordia University and Wilkes University

The purpose of this quasi-experimental, pre-test post-test design study was to determine the impact flipped learning had on student achievement in an eighth-grade earth science classroom. Two groups received a unit of instruction on Plate Tectonics, part of the Pearson Education Interactive Science Series. The control group received direct instruction in class; the experimental group received direct instruction outside class via teacher-created, prerecorded videos that students watched on Google Classroom. A small effect size was found related to the mean gains in the experimental group when compared to the mean gains of the control group. Post hoc testing revealed that students with IEPs had a significant difference in achievement when compared within and between groups. The results of this study may provide evidence that can inform decision-making processes with regard to effective technology-based instructional approaches and appropriate topics for professional development.

U.S. students' secondary science scores have remained consistently low when compared to the scores of secondary science students in other nations (Fleischman, Hopstock, Pelczar, & Shelley, 2010; National Science Board, 2006, 2008, 2012). The Trends in International Mathematics and Science Study (TIMSS; see National Center for Education Statistics, 1999, 2003, 2007, 2011) elucidates this issue and highlights the need for increased student achievement in U.S. secondary math and science classrooms. In addition, state-mandated academic standards challenge teachers to meet large volumes of educational standards in a prescribed amount of class time (Barton, 2001; Quint, 2015). The need exists to identify effective instructional strategies that increase student achievement in science.

Flipped learning, an innovative pedagogical approach, is the result of the efforts of two chemistry teachers from Colorado, Jonathan Bergmann and Aaron Sams, who were seeking to find an efficient and effective solution to re-teaching lessons that their students had missed as a result of a high absentee rate (Bergmann & Sams, 2012; Tucker, 2012). This situation prompted Bergmann and Sams to redesign how they used class time. By creating content-specific instructional videos that students would view at home for homework, their students were able to use class time to apply what they learned in the lecture, using the concepts in the presence of the teacher, often in collaboration with classmates (Bergmann & Sams, 2012; Young, 2011).

The purpose of this quantitative, quasi-experimental design study was to determine the impact that this innovative pedagogical approach, flipped learning, had on student achievement in an eighth-grade earth science classroom.

Problem Statement

The general problem is that a lack of achievement in science among U.S. students translates to an inability for these students to compete globally (U.S. Department of Education, 2010a, 2010b; Kena et al., 2014; Wagner, 2008). Designing effective, standards-aligned instruction that answers the National Science Education Standards' call for more student-centered instruction while affording students optimal opportunity to master content and compete with their global counterparts is a challenge faced by many teachers (National Research Council, 1996; Weiss & Pasley, 2004). Further complicating this matter is limited class time. Teachers do not have time to experiment with various instructional strategies to determine which is most effective for facilitating learning (Gay, 1997; Weiss & Pasley, 2004). But teachers must find ways to improve science achievement using new and relevant pedagogical approaches for 21st-century learners.

Flipped learning is a pedagogical approach that moves direct instruction from the group learning space, or classroom, to the individual learning space and transforms the resulting group space into a dynamic and interactive learning space (Flipped Learning Network [FLN], 2014), thus having the potential to increase student achievement. However, this model for learning is an emerging practice with little existing research to substantiate this claim.

Purpose of the Study

The purpose of this study was to determine what impact flipped learning had on student achievement in an eighth-grade earth science classroom. Two groups received a Pennsylvania standards-based earth science unit of instruction on plate tectonics, part of the Pearson Education Interactive Science Series.[1] The control group in this quasi-experimental design study received direct instruction in class, in a traditional lecture-driven format. The experimental group received direct instruction outside class via teacher-created, pre-recorded videos that students watched on Google Classroom, with class time used for student-centered learning activities that developed and reinforced the content. Achievement was measured using a pre-test post-test design to promote the isolation of achievement measured on the post-test as an indication of the treatment. The results of this study may provide evidence, grounded in research, that can inform decision-making processes with regard to effective instructional approaches.

Theoretical Framework

Teacher-centered instruction, commonly referred to as the "factory model of instruction" (J. Jarvis, 2010), is exemplified by the archetypal image of a teacher lecturing to a room of passive students who are working and learning independently from each other (Harris & Cullen, 2010). This "one size fits all" traditional approach is the expected norm in science classrooms in the United States (D. Brown, 2003; Hamden, McKnight, McKnight, & Arfstrom, 2013; Pratt, 2013).

---

[1] From Pearson Education Interactive Science—Earth, Pearson Successnet. Copyright 2015 Pearson Education, Inc. or its affiliates. Used by permission. All rights reserved.

Peter Jarvis (1985) classified teacher-centered instruction as a didactic approach to instruction involving the transmission of information from an expert teacher to a student, typically through the use of lecture. The instructor controls the content and form of student learning and attempts to steer the student toward a specific role or function, with the role of the student being to absorb and replicate what he or she has heard. Although the most frequently used instructional approach, it is not meeting the needs of today's diverse learners, and many researchers assert that it must be abandoned for a more student-centered approach (D. Brown, 2003; Gunter & Gunter, 2015, Pratt, 2013).

In student-centered or learner-centered instruction, the focus is not the delivery of content but rather on the experience of learning (A. Brown, 2012). The instructor takes on the role of a learning facilitator, as students become active participants in learning, discovering, and interacting with the content (Weimer, 2002). The Flipped Learning Network (2014) defines flipped learning as a

pedagogical approach in which direct instruction moves from the group learning space to the individual learning space, and the resulting group space is transformed into a dynamic, interactive learning environment where the educator guides students as they apply concepts and engage creatively in the subject matter. (p. 1)

Therefore, a flipped classroom can be classified as a student-centered learning environment at the core of which is active learning and social constructivism (Hamden et al., 2013).

Social constructivism is a learning theory that emphasizes the collaborative nature of learning (Ormrod, 2008; Schunk, 2011). It is based on specific assumptions about reality, learning, and knowledge. Social constructivists believe that human activity constructs reality and that members of a society collectively invent the properties of the world around them (Kukla, 2000). Social constructivism is also rooted in the belief that knowledge is a socially- and culturally-constructed human product (Kukla, 2000; Schunk, 2011); humans create meaning through their interactions with each other and their environment.

Lev Vygotsky (1896-1934), an influential developmental psychologist, made great contributions to his field, and his findings have been instrumental in the design of social constructivism. Vygotsky's (1956, 1962, 1978, and 1982) social development theory is rooted in a constructivist point of view and highlights the importance of collaborative learning. He proposed that children have a zone of proximal development, "the distance between the actual developmental level as determined by independent problem solving and the level of potential development as determined through problem solving under adult guidance or in collaboration with more capable peers" (Vygotsky, 1978, p. 86). He asserted that to optimize instruction, and therefore learning, teachers must discover the level of each child's cognitive/social development and build their learning experiences from that point (Vygotsky, 1978). In a flipped classroom, direct instruction is moved from the group learning space to the individual learning space, freeing up class time for increased collaboration and student-teacher interaction, two conditions Vygotsky identified as integral for learning.

Today's learners are submersed in a world of technology and require the integration of technology into learning in order to be successful in their educational experiences (Prensky, 2010). Further, federal law mandates the use of technology in all content areas of K-12 education (National Center for Education Statistics, 2002; U.S. Department of Education, 2010a, 2010b) based on the belief that technology enhances learning and that students need technology skills to be successful in society (National Center for Education Statistics, 2002; U.S. Department of Education, 2010a, 2010b). In a flipped classroom, lectures that typically monopolize time in the traditional classroom are pre-recorded and watched at home, via technology, for homework.

Cognizant of the need to combine the effective use of technology with sound teaching and learning strategies, and building on Vygotsky's contribution to social constructivism, the FLN (2014), led by flipped-learning pioneers Bergmann and Sams, joined with Pearson's School Achievement Services to identify the key features or pillars of flipped classrooms that enable learning to occur. The four pillars of flipped learning are: flexible environment, learning culture, intentional content, and professional educator (FLN, 2014). Collectively, these elements make up the Flipped Learning Model that served as the instructional model for this study.

Table 1

The Four Pillars and Corresponding Indicators of F.L.I.P.

Pillar	Corresponding Indicator for Practice
Flexible Environment	Establish spaces and time frames that permit students to interact and reflect on their learning as needed. Continually observe and monitor students to make adjustments as appropriate. Provide students with different ways to learn content and demonstrate mastery.
Learning Culture	Give students opportunities to engage in meaningful activities without the teacher being central. Scaffold activities and make them accessible to all students through differentiation and feedback.
Intentional Content	Prioritize concepts used in direct instruction for learners to access on their own. Create and/or curate relevant content for students. Differentiate to make content accessible and relevant to all students
Professional Educator	Be available to all students for individual, small group, and class feedback in real time as needed. Conduct ongoing formative assessments during class time through observation and by recording data to inform future instruction. Collaborate and reflect with other educators and take responsibility for transforming practice.

Note. Adapted from *The Four Pillars of F.L.I.P.*, (FLN, 2014).

Significance of the Study

Early indicators of flipped learning's impact on student achievement, though largely non-scientific, suggest that flipped learning increases student achievement (Goodwin & Miller, 2013). This study sought to determine the impact flipped learning had on students' science achievement in an eighth-grade earth science classroom in order to fill an identified gap in the research.

In addition, teachers may be interested in transitioning their classrooms to a student-centered learning environment but are unsure how to change their instructional methods in an effective and efficient way. Determining the impact that flipped learning has on student science achievement provides instructors with information to help them to determine whether using the flipped-learning model has the potential to increase student achievement. This study also has potential to impact education administrators' decision-making processes centered on professional development. The results of this study may influence whether this innovative approach is deemed an appropriate topic of enrichment for practicing teachers.

Beyond the K-12 learning environment, this study may prove of interest to undergraduate education departments in institutions of higher education. Pre-service teachers should have the benefit of learning about effective instructional strategies in the course of their teacher education preparation programs. The results of this study may contribute to the existing body of knowledge on effective instructional strategies and the effective use of technology in teaching and learning and, therefore, may classify flipped learning as a valid topic of study in an undergraduate education program.

The need exists for empirical evidence, grounded in research, of the impact that flipped learning has on students' science achievement so that teachers are better informed and able to choose effective instructional strategies that meet the call for increased student-centered instruction.

Caveats of the Flipped Classroom

Despite being viewed by many as an innovative approach, there are critics who see flipping as "a high tech version of an antiquated instructional method: the lecture" (Ash, 2012, p. 6). Nielsen (2011) recognizes the challenges of student accessibility to online instructional resources as well as a lack of classroom adaptation to student-centered instruction as caveats to the flipped learning model. Bogost (2013) argues that using videos to deliver direct instruction is simply condensing content to make it more appealing and more "easily digestible" for students. November and Mull (2012) voice concern that teacher roles will be diminished through a lack of accountability for students to engage in course content outside class.

Technical obstacles are also a concern. Poor video quality, cost of video production, and a lack of technical skill to develop videos (Milman, 2012) are very real concerns when implementing a flipped learning model, but the use of screencasting does alleviate some of the difficulties. Despite the challenges, "reports by many instructors maintain that it (flipped classroom model) can be used as a valuable strategy at any level, depending on one's learners, resources, and time" (Milman, 2012, p. 86). Sams and Bergmann (2013) caution that not all courses are well suited for flipping and

that didactic courses that consist of large volumes of content at the low end of Bloom's taxonomy (Bloom, 1985) will benefit the most from a flipped transformation.

Research Design

This study sought to answer one, specific research question: *What impact does flipped learning have on student achievement in an eighth-grade earth science classroom?* To address this question, the study tested the following hypotheses.

$H1_0$: There is no significant difference in achievement when comparing students who received flipped instruction and students who received traditional lecture-based instruction.

$H1_A$: There is a significant difference in achievement when comparing students who received flipped instruction and students who received traditional lecture-based instruction.

The independent variable in this study was the mode of direct instruction, and the dependent variable was student achievement as measured by pre- and post-tests.

This study sought to determine the impact that an educational intervention, flipped learning, had in a natural setting—an eighth-grade earth science classroom—and was therefore well suited for a quasi-experimental design approach (Muijs, 2011). Quasi-experiments are used when random allocation of study participants is neither practical nor possible (Muijs, 2011). In this study, students were pre-assigned to classroom sections at the beginning of the 2015-2016 academic year. Reassigning students for the sake of this study would have minimized bias, but it would have been disruptive to the participants and the educational environment. Therefore, non-random assignment was used, characterizing this study as quasi-experimental (Muijs, 2011).

This researcher used purposive sampling to identify a classroom teacher to participate in this study. Teacher quality is a major factor when determining the impact an intervention has on achievement (Muijs, 2011). To reduce a possible confounding variable, both experimental and control groups in this study received instruction from the same classroom teacher. The treatment, a unit of instruction on plate tectonics, was administered over a set time of three weeks to both groups. The control group received traditional lecture-based instruction supplemented with learning activities that reinforced and supported the unit content—some of which were completed in class, some at home. The experimental group received the same direct instruction, but it was delivered at home via technology. Students in the experimental group used class time to participate in student-centered, collaborative learning activities that reinforced and supported unit content. Protocols and class resources were part of Pearson Education Interactive Science Series, Earth, and were administered to both groups by the same teacher.

The participating teacher created instructional screencasts, under the guidance of the researcher, using a screencast creation application, Screencast-o-matic.[2] Screencasts were uploaded to a web-based application, Google Classroom, which allowed the teacher to track student participation.

─────────

[2] See http://screencast-o-matic.com/home for details.

Students were provided a passcode specific to their scheduled class period, which allowed them to log onto Google Classroom to access and watch the videos. Students who did not have access to the Internet at home were able to watch the screencasts in the school's library or computer lab during their study hall or activity period, or they were granted permission from the teacher to view the screencasts in their classroom before or after school.

Following the prescribed treatment time of three weeks, the standards-based outcome measure was administered as a post-test. The difference between the individual students' pre- and post-test results were compared; *t*-tests and Analysis of Variance (ANOVA) were used to determine if any significant difference existed between the means of achievement in the experimental and control groups.

Setting and Sample

The setting for this study was a rural, public middle school in northeastern Pennsylvania during the 2015-2016 academic school year. Students were selected to participate in the study based upon their placement into any one of the sections of eighth-grade earth science being taught by the classroom teacher selected by the researcher to participate in this study. For the teacher to be considered a potential participant in the study, the teacher had to satisfy the following conditions, set by the researcher:

- Must be a highly-qualified, tenured teacher currently teaching eighth-grade earth science in a public school in northeastern Pennsylvania;
- Must be using or be able to use Pearson Interactive Science Series, Earth;
- Must teach multiple sections of the same subject and grade level;
- Must be able to demonstrate, through teacher evaluations/peer recommendations, a history of effective instruction;
- Must express a desire/interest in exploring alternative instructional strategies;
- Must be committed to maintaining the design and fidelity of the study.

Assumptions, Limitations, Delimitations

This research study, similar to all educational research, was conducted under a set of assumptions (Ellis & Levy, 2009). It was assumed that students answered honestly when surveyed about their access to technology and Internet service outside the classroom. It was also assumed that parents of the students in the experimental group were as supportive and encouraging about their child's completing the assigned homework tasks, watching videos, as they typically are of a traditional homework assignment. Last, it was assumed that students in the experimental group participated in the planned learning activities during class time.

Limitations in quasi-experimental research are related to the researcher's attention to internal and external validity (Cook & Campbell, 1979). Non-randomization of participants defines this study as quasi-experimental (Johnson & Christensen, 2012), and is considered a limitation of this study (Cook & Campbell, 1979). Lack of random assignment reduces internal validity and makes causal claims difficult to make (Prater, 1983), but analytic techniques, such as ANOVA, were used

to reduce the effects of initial differences between groups and strengthen the design of the study (Dimsdale & Kutner, 2004).

Confounding is a limitation of this study and all quasi-experimental studies (Pearl, 2000). When variables in a research design are not controlled but should be, they are identified as confounding variables (Cook & Campbell, 1979). Confounding cannot be eliminated through statistical measures alone, but great attention was given to construct validity in the research design of this study.

Delimitations are the characteristics that limit the scope and define the boundaries of a study (Leedy & Ormrod, 2010). This study was delimited to include only those students enrolled in particular sections of eighth-grade earth science classes in a rural, public school in northeastern Pennsylvania. Students' schedules, not the design of this study, dictated placement of the students into their respective class sections. All sections of students participating in the study were assigned to the same classroom teacher. Use of the Flipped Learning Model to guide the flipped instruction design process delimits this study; results, therefore, are only generalizable for this particular instructional approach.

Unit of Instruction: Scope and Sequence

The experimental and control groups in this study received a three-week unit of instruction on plate tectonics, part of the Pearson Education Interactive Science Series. The unit consisted of three lessons: Drifting Continents, Sea-Floor Spreading, and the Theory of Plate Tectonics. The control group received traditional lecture-based instruction; the experimental group received flipped instruction.

Procedure

Methodology began with purposive sampling which identified classroom teachers who met the study's selection criteria. From this pool, the researcher randomly selected a classroom teacher to participate in this study. The researcher scheduled five meetings with the classroom teacher prior to the onset of the study to clarify the purpose and intent of the study, to review the unit of instruction and all related instructional materials, to assist in the identification of appropriate technology tools for use in the creation of instructional screencasts, and to facilitate the creation of the instructional screencasts that served as the mode of direct instruction for the experimental group in this study.

To ensure the instructional videos were aligned to course content, standards, and the outcomes measure, the participating teacher, under the guidance and technical support of the researcher, created the videos using a screencasting tool, Screencast-o-matic. Videos did not exceed 10 minutes in length, in order to provide an effective, purposeful, and engaging (Bergmann & Sams, 2012) experience for students. Screencasts were then uploaded to a web-based application, Google Classroom. Google Classroom has a tracking feature that allowed the teacher to monitor student participation. Students who watched the posted video by the assigned due date were designated "done," students who watched the video, but had exceeded the required due date were designated "done late," and students who failed to watch the video were designated as "late." The classroom

teacher was able to quickly determine which students had viewed the content, and which students did not, simply by logging into each respective period in Google Classroom.

The researcher shared and reviewed with the classroom teacher resources related to flipped learning, specifically videos and frameworks created by the FLN (2012, 2014). These resources aided in the selection of the screencast creation tool, the creation of the screencasts, mode of access of instructional screencasts, and the learning model employed in this study.

After receiving proper assent and consent, the researcher obtained from the classroom teacher anonymous class lists by scheduled class period that identified the students involved in the study by relevant identifying demography (gender, ethnicity, exceptionalities, and socioeconomic status). The data were deidentified to ensure confidentiality and organized using a spreadsheet software program, Microsoft Excel.

Instrumentation

The outcomes measure used as both the pre-test and post-test in this study is an assessment developed by Pearson Education, as part of the Interactive Science Series, Earth. Permission was granted by Pearson Education for use of the materials in this study. In order to determine the impact that flipped learning will have on student achievement in this three-week unit on plate tectonics, a criterion-referenced test consisting of 34 questions was administered to both the experimental and control groups at the beginning of the unit as a pre-test and at the conclusion of the unit as the post-test. The test consisted of 14 multiple-choice questions, six completion items, five true-or-false questions, six open-ended items, and three identify-and-label questions. The questions were aligned with Pennsylvania state standards and the unit's learning objectives and assessed student understanding of the vocabulary terms and key concepts associated with the unit.

Description of the Sample

Purposive sampling yielded two potential teacher participants for the study, both of whom satisfied the aforementioned criteria. From this group, one classroom teacher was randomly selected to participate. The teacher is a highly-qualified, tenured Pennsylvania educator currently teaching eighth-grade earth science in a rural, public middle school in northeastern Pennsylvania. The teacher holds teaching certification in Biology (7-12) and has been teaching for 21 years, the last 18 of which have been devoted to teaching eighth-grade earth science.

The researcher's review of the participant's curriculum vitae reveals that the teacher has a history of effective instruction, as demonstrated by 18 years of satisfactory performance evaluations and exemplary peer recommendations at his/her current district. The teacher's district has been using the Pearson Interactive Science Series for several years, although not exclusively. The teacher currently teaches five different sections of eighth-grade earth science. To control for a confounding variable, four sections that the teacher teaches were selected to participate in this study, with special attention paid to creating control and experimental groups that are as similar as possible. Two sections were assigned to the experimental group, and two sections of students to the control group. By expressing interest in participating in this study, the teacher demonstrated interest in

exploring alternative instructional strategies, and by granting consent expressed commitment to uphold the design and fidelity of this study.

Students were selected to participate in the study based upon their placement into any one of the four sections of eighth-grade earth science being taught by the classroom teacher selected by the researcher to participate in this study. The initial sample population consisted of 95 students, 45 males and 50 females. Of those identified as potential participants, four students chose not to grant consent/assent, so their data were not included in this study. The final study population was 91 students, comprised of 44 males and 47 females. See Table 2 for selected demographics of group characteristics.

Table 2
Selected Demographic of Group Characteristics by Number and Percentage

	Control Group		Experimental Group	
Demographic	n	%	n	%
Gender	44		47	
Male	21	47.7	23	48.9
Female	23	52.3	24	51.1
Ethnicity	44		47	
White	43	97.7	47	100.0
Black	1	2.3	0	0.0
Exceptionality	44		47	
No IEP/GIEP	32	72.7	34	72.3
IEP	5	11.4	12	25.5
GIEP	6	13.6	1	2.1
IEP & GIEP	1	2.3	0	0.0
Socioeconomic Status	44		47	
Non-Participating in Free/ Reduced Lunch Program	39	88.6	41	87.2
Participating in Free/Reduced Lunch Program	5	11.4	6	12.8

Note. Race an exceptionality as reported by the classroom teacher. Socioeconomic status as reported by the district's Title 1 administrator.

Descriptive Statistics

Quantitative data analysis was carried out using Statistical Package for the Social Sciences (SPSS) 23.0, a software program for statistical analyses. The purpose of the initial data analysis was to describe or summarize the data that was collected on participants in the study and was therefore descriptive in nature (see Table 3).

Table 3
Measures of Central Tendencies and Measures of Dispersion

		N	Mean	Range	Std. Deviation	Variance
Control Group						
	Pre-Test Score %	43	44.91	44	11.77	138.52
	Post-Test Score %	44	86.91	36	9.167	84.04
	Gain	43	42.16	40.00	8.89	79.04
	Valid N (listwise)	43				
Experimental Group						
	Pre-Test Score %	46	40.8	60	14.913	222.383
	Post-Test Score %	45	86.13	29	7.933	62.936
	Gain	44	45.23	50.00	12.92530	167.063
	Valid N (listwise)	44				

Inferential Statistics

Inferential statistics were used in this study to draw inferences about populations based on the sample data (Mertler & Vannatta, 2013). The use of the same outcomes measure as both the pre-test and post-test in this study allows the pre-test to be used to identify initial differences, as well as the magnitude of those differences (Shadish, Cook, & Campbell, 2002), between the control and experimental groups. These differences account for threats to internal validity. An independent-samples t-test comparing the mean pre-test scores from both groups found no significant difference ($t(87) = -1.43$, $p > .05$) between the pre-test mean of the experimental group ($M = 40.8$, $sd = 14.9$) and the pre-test mean of the control group ($M = 44.9$, $sd = 11.8$). Further, the assumption of normality was tested using both the Kolmogorov-Smirnov and the Shapiro-Wilk tests. The assumption of normality was accepted, with both tests yielding a p-value of .05 or above. Therefore, statistical control of variances between groups was not necessary.

With normality between groups assumed, further inferential explorations were used to answer the study's research question: What impact does flipped learning have on achievement in an eighth-grade earth science classroom? Gain scores were computed by analyzing the difference between each student's pre-test and post-test score. Since no differences were identified between the groups at pre-test, the post-test gains can be assumed to be a result of the treatment (Becker, 2000; Shadish et al., 2002).

Paired t-tests were used to compare within-group differences in gain scores, to determine effectiveness of the treatments. Both the control ($t (42) = -31.1$, $p < .001$) and experimental groups ($t (43) = -23.2$, $p < .001$) were found to have significant gains from pre-test scores to post-test scores, indicating that both groups showed an increase in achievement as a result of their respective treatments.

To determine whether there was a significant difference between treatments, independent *t*-tests comparing gain scores between groups were carried out. No significant difference ($t(85) = 1.286$, $p = .202$) between the means of gain scores was found between the experimental ($M = 45.2$, $sd = 12.9$) and control groups ($M = 42.2$, $sd = 8.9$).

Although there was no significant difference in mean gain scores between groups, there was a difference in means. Effect size can be calculated, when differences in mean exist, to quantify the effectiveness of an intervention (Sprinthall, 2012). For this study, $d = .28$, indicating that flipped learning did have a small effect on achievement when comparing the mean gain scores of students in the experimental group to those of the control group.

Further analysis sought to investigate what, if any impact flipped learning had on specific subgroups within the study populations. Study populations had very little diversity in respect to ethnicity and socioeconomic factors, so analysis was only carried out with consideration given to gender and exceptionality, as indicated by the presence of an IEP or GIEP.

ANOVA is used to compare the means of two or more groups that vary on a single independent variable. It is preferred over conducting multiple *t*-tests because it reduces the rate of Type I error and decreases the likelihood of drawing inappropriate conclusions (Sprinthall, 2012). A one-way ANOVA comparing the gain means of female participants to the gain means of male participants found no significant difference between groups ($F(1,85) = .526$, $p > .05$).

A one-way ANOVA comparing the gain means of students who possess an IEP, or who possess a GIEP, to those students who do not possess either an IEP or GIEP was conducted to determine whether having an exceptionality had any effect with respect to treatment. Students who possess an IEP were found to have a significant difference ($F(2, 83) = 6.67$, $p = .002$) between groups in mean of gain scores when compared to students with either a GIEP or no exceptionality.

Post hoc testing included the use of Tukey's HSD test. Tukey HSD is used to determine where significant differences between groups lie (Sprinthall, 2012). Although it is not the most powerful test for pairwise comparisons, it is considered to be the safest when all the assumptions of ANOVA are met (Sprinthall, 2012). Tukey's HSD indicates no significant differences in gain means between students with no exceptionalities and students with GIEPs ($p = .672$), nor between students with GIEPs and students with IEPs ($p = .260$). There was, however, a significant difference in gain means between students with no exceptionalities and those who possess an IEP ($p = .001$).

Ensuring Fidelity in the Study

In this study, of special concern was the degree to which the teacher implements the study within the parameters of the Flipped Learning Model for the experimental group. To increase confidence that changes in outcomes were due to the intervention under investigation, data related to the fidelity of the study was collected (see Table 4). Teacher-reported evidence of alignment to the FLM was analyzed by the researcher and entered into the following checklist, adapted from the FLN's (2014) Implications for Practice Checklist to, (1) identify the essential pillars of the flipped learning model; (2) identify the corresponding implications for practice; and (3) provide evidence,

as documented by the classroom teacher, of alignment.

Table 4

The Four Pillars and Corresponding Indicators with Evidence of Alignment

Pillar	Corresponding Indicator for Practice	Evidence of Alignment (As Documented by Classroom Teacher)
Flexible Environment	Establish spaces and time frames that permit students to interact and reflect on their learning as needed. Continually observe and monitor students to make adjustments as appropriate. Provide students with different ways to learn content and demonstrate mastery.	Students were able to move desks to create group learning spaces, as needed. Students could participate in optional learning activities, once core activities were complete. Increased opportunity for formative assessment. A more liberal classroom management policy was implemented.
Learning Culture	Give students opportunities to engage in meaningful activities without the teacher being central. Scaffold activities and make them accessible to all students through differentiation and feedback.	Student selected optional learning activities. More self-paced learning. More time for teacher to engage in one-to-one student-teacher interactions in order to formatively assess learning.
Intentional Content	Prioritize concepts used in direct instruction for learners to access on their own. Create and/or curate relevant content for students. Differentiate to make content accessible and relevant to all students	Intentional selection of content for screencasts. Unit included more hands on activities and optional learning activities, such as creating vocabulary flashcards, inquiry activities, and lab investigations developed specifically to support the unit's content to allow for collaborative learning experiences, and to allow students to develop a deeper understanding of the key concepts.

Table 4 (continued)

	Be available to all students for individual, small group, and class feedback in real time as needed.	More teacher observation. More group Q & A.
	Conduct ongoing formative assessments during class time through observation and by recording data to inform future instruction.	Tracking student participation on Google Classroom. Participating in and facilitating discussion threads on Google Classroom.
Professional Educator	Collaborate and reflect with other educators and take responsibility for transforming practice.	Allowing students to view videos before and after regular school hours, as needed.
		Intentional reflection about and frequent formative assessment of self and maintaining the study's fidelity.

Note. Adapted from *The Four Pillars of F.L.I.P.* (FLN, 2014).

Research Findings

Independent *t*-tests comparing gain scores between groups found no significant difference ($t(85) = 1.286$, $p = .202$) between the experimental ($M = 45.2$, $sd = 12.9$) and control group ($M = 42.2$, $sd = 8.9$). Therefore, neither treatment was identified as having a significantly different impact on achievement than the other. However, using Cohens *d* to calculate effect size indicated that flipped learning did have a small effect on increased achievement ($d = .28$) when comparing the mean gain scores of students in the experimental group to those of the control group.

Further analysis sought to investigate what, if any impact flipped learning had on specific subgroups within the study populations. A one-way ANOVA was conducted to determine whether or not having an exceptionality had any effect with respect to treatment. Students who possess an IEP were found to have a significant difference ($F(2, 83) = 6.67$, $p = .002$) between groups in mean of gain scores when compared to students with either a GIEP or no exceptionality. Post hoc testing, specifically Tukey's HSD, indicated no significant differences in gain means between students without exceptionalities and students with GIEPs ($p = .672$), nor between students with GIEPs and students with IEPs ($p = .260$); however there was a significant difference in gain means between students with no exceptionalities and those who possess an IEP ($p = .001$).

In this particular subgroup, students with IEPs, flipped learning was found to have a positive impact on student achievement when compared to students with IEPs in the control group. The significant difference in achievement when comparing students with IEPs who received flipped instruction to students who received traditional, lecture-based instruction leads this researcher to reject the null hypothesis for this particular subgroup. See Table 5 for a complete list of research findings.

Table 5
Summary of Findings

	Statistical Analysis Performed	Comparing	Result	Findings
Differences between groups	Independent *t*-test	Mean pre-test scores between groups	*p* >.05	Not significant
Test for Normality between groups	Kolmogorov-Smirnov	Mean pre-test scores between groups	*p* >.05	Not significant
Test for Normality between groups	Shapiro-Wilk	Mean pre-test scores between groups	*p* >.05	Not significant
Experimental Group Gain Scores	Paired *t*-test	Within group pre- to post-test mean difference	*p* <.001	Significant
Control Group Gain Scores	Paired *t*-test	Within group pre- to post-test mean difference	*p* <.001	Significant
Treatment effect	Independent *t*-test	Between group mean gain scores	*p* >.05	Not Significant
Effect size	Cohen's *d*	Experimental treatment to Control treatment	*d* = .28	Small effect size
Treatment effect by Gender	One-way ANOVA	Male mean gain to female mean gain	*p* >.05	Not significant
Treatment effect by exceptionality	One-way ANOVA	IEP mean to GIEP mean to No except. mean gain	*p* = .002	Significant
Post hoc- Treatment effect by except.	Tukey's HSD	No except. to GIEP	*p* = .672	Not significant
		GIEP to IEP	*p* = .260	Not significant
		IEP to No except.	*p* =.001	Significant

Discussion of Results

Theoretical Implications

Applying the notion of teacher-centered instruction vs. student-centered instruction within the context of the independent variable of this study suggests that students who received flipped instruction, as prescribed by the FLM, had more opportunity for collaboration with peers and more student-teacher interactions than the students who received traditional lecture-based instruction. This increased collaboration and student-teacher interaction translated to more opportunity for active engagement in their learning community. It is this engagement that results in the sociocultural evolution as described by Vygotsky, through the use of mediational tools, that results in a higher level of mental functioning and therefore a deepened level of understanding. Findings indicate that students in the flipped classroom had a significant increase in achievement when comparing pre-test to post-test scores, translating to a deeper level of understanding of unit content. However, they

showed no significant difference when mean gain scores were compared to those of the control group, despite having more class time to participate in collaborative learning activities and more opportunity for active engagement in their learning community.

Another aspect of Vygotsky's theory related to the independent variable of this study is the zone of proximal development (ZPD), or "the distance between a child's actual developmental level as determined by independent problem solving and the higher level of potential development as determined through problem solving under adult guidance or in collaboration with more capable peers" (Vygotsky, 1978, p. 86). The ZPD is dependent upon social interactions between the learner and a more knowledgeable other (MKO; Vygotsky, 1978). Socially meaningful activity (Vygotsky, 1978) between a less competent learner and a MKO results in the learner's becoming independently proficient at completing a task that he or she could otherwise only accomplish with the help of the MKO (Kozulin, Gindis, Ageyev, & Miller, 2003; Wiezorrek, 2012).

In this study, students in the flipped classroom had more opportunities for interactions with an MKO, whether it was student-student interaction or teacher-student interaction. The teacher in this study also reported having more time for formative assessment, which theoretically would provide increased opportunity for identification of each student's ZPD. This would allow learners in the flipped classroom to develop higher mental functions (Vygotsky, 1982) and therefore increased achievement. However, the only significant difference in achievement found as a result of this study was for one subgroup population. Students in the flipped classroom who possessed an IEP had a significant increase in achievement when compared within and between groups.

Discontinuity between the study's findings and the theoretical basis as related to social constructivism prompted an exploration of the study's independent variable, the mode of direct instruction. In this study, special attention was paid to reducing confounding to increase causality. The use of classroom resources and protocols from Pearson Interactive Science Series, Earth, ensured that both treatment groups were exposed to the same unit of instruction with consistent scope and sequence. This approach strengthened the isolation of the independent variable with respect to treatment effect. However, using the Pearson series resulted in both treatment groups' having opportunity to engage in active, inquiry-based learning activities. For the control group, some of these activities were completed in class, some at home. The experimental group completed all the core activities in class and had the opportunity to engage in more optional active and collaborative learning activities in class. While the study's design did strengthen the isolation of the independent variable, it also created a situation in which the control group had the opportunity to participate in some student-centered learning activities, diluting the traditional, lecture-driven effect and possibly accounting for the lack of significance in achievement between treatment groups.

While results were not statistically significant, there was a small effect size, indicating a slight increase in achievement in the flipped instruction group compared to the control group. This finding indicates that the independent variable, the mode of delivery and particularly the use of technology, did have some impact on student achievement. In the flipped classroom, students received direct instruction by watching screencasts on Google Classroom. Prensky (2010) believes that today's learners are submersed in a world of technology and require the integration of technology into

learning to be successful in their educational experiences. Further, federal law mandates the use of technology in all content areas of K-12 education (National Center for Education Statistics, 2002; U.S. Department of Education, 2010a, 2010b) based on the belief that technology enhances learning and that students need technology skills to be successful in society (National Center for Education Statistics, 2002; U.S. Department of Education, 2010a, 2010b).

The most significant increase as a result of flipped instruction was found in students with exceptionalities. Specifically, students who possessed an IEP had a significant increase in achievement when compared to students with GIEPs or no exceptionalities, within and between groups. This finding suggests the use of technology to deliver direct instruction had a more profound effect on this particular subgroup. This finding is supported by current theoretical perspectives on the use of technology for learning. Smith and Throne (2007) found that incorporating technology tools into education supports effective instruction and offers personalized learning environments which meet the needs of diverse learners by creating more engaging, flexible, relevant, meaningful, and personalized learning experiences. Technology also permits flexible scheduling and pacing (Moeller & Reitzes, 2011), allowing flipped learning to more effectively meet the essential needs of this particular subgroup.

In addition, the screencasts used to present the content to the learners were available, through Google Classroom, for student viewing whenever and wherever it was convenient. The videos could be paused, reviewed, and watched as many times as needed—resulting in students' coming to class better prepared (Musallam, 2010). It is plausible that students with IEPs in the experimental group watched the videos multiple times and therefore were exposed to new concepts with greater frequency than those in the control group.

Practical Implications

This study sought to determine the impact that flipped learning had on students' science achievement in an eighth-grade earth science classroom in order to fill an identified gap in the research. Findings indicate many practical implications that can guide education leaders with regard to effective student-centered instructional practices, K-12 professional development topics, and teacher preparation programs.

K-12 teachers may be interested in transitioning their classrooms to a student-centered learning environment but are unsure how to change their instructional methods in an effective and efficient way. This study, as evidenced by students' pre-test, post-test gains, indicated that flipped learning is an effective, student-centered instructional approach and does have a positive effect on student achievement. Therefore, teachers should consider flipped learning as an effective student-centered instructional approach. Significant increases in achievement for students with IEPs in the flipped classroom provide extra incentive for teachers of special education students to shift from traditional lecture-driven formats to flipped student-centered instruction.

The shift from teacher-centered instruction to flipped instruction, as prescribed by the FLM, is not an easy one and would require professional development opportunities. This study provides evidence related to the effectiveness of flipped learning, and it's potential to increase achievement,

that has the power to impact education leaders' decision-making processes centered on professional development. The results of this study confirm that this innovative approach, flipped learning, is an appropriate topic of enrichment for practicing teachers, especially those who exclusively, or inclusively, teach students with IEPs. This subgroup population was found to have the most significant increase in achievement as a result of flipped learning within and between groups.

Beyond the K-12 learning environment, this study informs education leaders in undergraduate education departments about the benefits of flipped learning. Flipped learning has been found, through this study, to be an effective instructional strategy and therefore should be classified as a valid topic of study in teacher preparation programs. It also serves as a model for the effective use of technology in teaching and learning, particularly for those pre-service teachers interested in teaching students with exceptionalities.

Conclusions

This study sought to determine the impact that flipped learning had on student achievement in an eighth-grade earth science classroom. Quantitative data analysis revealed that flipped learning is an effective instructional approach, although no statistically significant increase in achievement was found compared to the achievement in the control group. Students in the flipped learning group did however show a small increase in achievement, as evidenced by Cohen's d, when compared to the control group. The only significant gain in achievement, within and between groups, was found in the IEP population of the flipped learning group. As a result of this study, flipped learning has been identified as an effective student-centered instructional approach that increases student achievement, particularly for those students who possess an IEP. Education leaders can, therefore, promote flipped learning as an effective, student centered approach to learning that increases student achievement.

References

Ash, K. (2012). Educators view "flipped" model with a more critical eye. *Education Week*, *32*(2), 6-8. Retrieved from http://www.edweek.org/ew/articles/2012/08/29/02el-flipped.h32.html

Barton, A. C. (2001). Science education in urban settings: Seeking new ways of praxis through critical ethnography. *Journal of Research in Science Teaching*, *38*, 899-917. doi:10.1002/tea.1038

Becker, L. A. (2000). *Post hoc statistical procedures: Effect size calculators*. Retrieved from University of Colorado at Colorado Springs website: http://www.uccs.edu/lbecker/gainscore.html

Bergmann, J., & Sams, A. (2012). *Flip your classroom: Reach every student in every class every day.* Arlington, VA: International Society for Technology in Education.

Bloom, B. S. (Ed.). (1985). *Developing talent in young people*. New York, NY: Ballantine Books.

Bogost, I. (2013). The condensed classroom. *The Atlantic.* Retrieved from http://www.theatlantic.com/technology/archive/2013/08/the-condensed-classroom/279013/

Brown, A. F. (2012). *A phenomenological study of undergraduate instructors using the inverted or flipped classroom model* (Doctoral dissertation). Retrieved from ProQuest. (3545198)

Brown, D. M. (2003). Learner-centered conditions that ensure students' success in learning, *Education*, *124*(1), 99-107.

Cook, T. D., & Campbell, D. T. (1979). *Quasi-experimentation: Design and analysis issues for field settings.* Boston, MA: Houghton Mifflin.

Dimsdale, T. & Kutner, M. (2004, December). *Becoming an educated consumer of research: A quick look at the basics of research methodologies and design*. Paper presented at the Meeting of the Minds Practitioner-Researcher Symposium, American Institutes for Research, Sacramento, CA. Retrieved from http://eric.ed.gov/?id=ED491593

Ellis, T. J., & Levy, Y. (2009). Towards a guide for novice researchers on research methodology: Review and proposed methods. *Issues in Informing Science and Information Technology*, *6*, 323-337. Retrieved from http://iisit.org/Vol6/IISITv6p323-337Ellis663.pdf

Fleischman, H. L., Hopstock, P. J., Pelczar, M. P., & Shelley, B. E. (2010). *Highlights from PISA 2009: Performance of U.S. 15-year-old students in reading, mathematics, and science literacy in an international context* (NCES 2011-004). Retrieved from http://nces.ed.gov/pubs2011/2011004.pdf

Flipped Learning Network. (2012). *Improve student learning and teacher satisfaction with one flip of the classroom.* Retrieved from http://flippedlearning.org/wp-content/uploads/2016/07/classroomwindowinfographic7-12.pdf

Flipped Learning Network. (2014). *The four pillars of F.L.I.P*. Retrieved from http://flippedlearning.org/definition-of-flipped-learning/

Gay, S. (1997). *Teaching with technology: A case study of teachers' perceptions of implementing computers in the classroom* (Unpublished doctoral dissertation). University of Nebraska, Lincoln. Retrieved from http://webcache.googleusercontent.com/search?q=cache:http://dwb4.unl.edu/Diss/SGay/SGayDiss.html

Goodwin, B., & Miller, K. (2013). Evidence on flipped classrooms is still coming in. *Educational Leadership*, *70*(6), 78-80. Retrieved from http://www.ascd.org/publications/educational-leadership/mar13/vol70/num06/Evidence-on-Flipped-Classrooms-Is-Still-Coming-In.aspx

Gunter, G. A., & Gunter, R. E. (2015). *Teachers integrating technology in a changing world: Discovering computers.* Boston, MA: Cengage Learning.

Hamden, N., McKnight, P., McKnight, K., & Arfstrom, K. (2013). *A review of flipped learning.* Retrieved from http://www.flippedlearning.org/research

Harris, M., & Cullen, R. M. (2010). *Leading the learner-centered campus: An administrator's framework for improving student learning outcomes.* San Francisco, CA: Jossey-Bass.

Jarvis, J. (2010, March 6). *TEDxNYED presents Jeff Jarvis* [video file]. Retrieved from http://tedxtalks.ted.com/video/TEDxNYED-Jeff-Jarvis-030610

Jarvis, P. (1985). *The sociology of adult & continuing education.* London, UK: Croom Helm.

Johnson, B., & Christensen, L. (2012). *Educational research: Quantitative, qualitative, and mixed approaches* (4th ed.). Thousand Oaks, CA: Sage Publications.

Kena, G., Aud, S., Johnson, F., Wang, X., Zhang, J., Rathbun, A., … Rosario, V. (2014). *The condition of education 2014*. Retrieved from National Center for Education Statistics website: https://nces.ed.gov/pubsearch/pubsinfo.asp?pubid=2014083

Kozulin, A., Gindis, B., Ageyev, Z., & Miller, S. (2003). *Vygotsky's educational theory practice in cultural context.* Cambridge: Cambridge University Press.

Kukla, A. (2000). *Social constructivism and the philosophy of science*. New York: Routledge.

Leedy, P. D., & Ormrod, J. E. (2010). *Practical research: Planning and design* (9th ed.). New York, NY: Merrill.

Mertler, C., & Vannatta, R. (2013). *Advanced and multivariate statistical methods* (5th ed.). Glendale, CA: Pyrczak.

Milman, N. B. (2012). The flipped classroom strategy: What is it and how can it best be used? *Distance Learning, 9*(3), 85-87.

Moeller, B., and Reitzes, T. (2011). *Integrating technology with student-centered learning.* Retrieved from Nellie Mae Education Foundation website: http://www.nmefoundation.org/research/personalization/integrating-technology-with-student-centered-learn

Muijs, D. (2011). *Doing quantitative research in education with SPSS* (2nd ed.). Thousand Oaks, CA: Sage.

Musallam, R. (2010). *The effects of screencasting as a multimedia pre-training tool to manage the intrinsic load of chemical equilibrium instruction for advanced high school chemistry students* (Doctoral dissertation). Retrieved from ProQuest. (3416991)

National Center for Education Statistics. (1999). *TIMSS 1999 results*. Retrieved from https://nces.ed.gov/timss/results.asp

National Center for Education Statistics. (2002). *Technology in schools: Suggestions, tools, and guidelines for assessing technology in elementary and secondary education* (NCES 2003–313). Retrieved from http://nces.ed.gov/pubs2003/2003313.pdf

National Center for Education Statistics. (2003). *TIMSS 2003 results*. Retrieved from https://nces.ed.gov/timss/results03.asp

National Center for Education Statistics. (2007). *TIMSS 2007 results*. Retrieved from https://nces.ed.gov/timss/results07.asp

National Center for Education Statistics. (2011). *TIMSS 2011 results*. Retrieved from https://nces.ed.gov/timss/results11.asp

National Research Council. (1996). *National science education standards*. Washington, D.C.: National Academy Press. Retrieved from https://www.nap.edu/download/4962

National Science Board. (2006). *America's pressing challenge—Building a stronger foundation: A companion to science and engineering indicators—2006* (NSB-06-02). Retrieved from http://eric.ed.gov/?id=ED490850

National Science Board. (2008). *Science and engineering indicators 2008* (Vol. 1)*.* Retrieved from http://eric.ed.gov/?q=ED499644&id=ED499643

National Science Board. (2012). *Science and engineering indicators 2012.* Retrieved from http://www.nsf.gov/statistics/seind12/

Nielsen, L. (2011). Five reasons I'm not flipping over the flipped classroom. *Technology & Learning*. Retrieved from http://www.techlearning.com/default.aspx?tabid=100&entryid=3360

November, A. & Mull, B. (2012). Flipped learning: A response to five common criticisms. *November Learning.* Retrieved from http://novemberlearning.com/educational-resources-for-educators/teaching-and-learning-articles/flipped-learning-a-response-to-five-common-criticisms-article/

Ormrod, J. E. (2008). *Human learning*. Upper Saddle River, NJ: Prentice Hall.

Pearl, J. (2000). *Causality: Models, reasoning, and inference.* Cambridge, UK: Cambridge University Press.

Prater, J. M., Jr. (1983, November). *An analysis of selected statistical techniques utilized in quasi-experimental designs*. Paper presented at the annual meeting of the Mid-South Educational Research Association, Nashville, TN.

Pratt, H. (2013). *The NSTA reader's guide to a framework for K-12 science education: Practices, crosscutting concepts, and core ideas*. Retrieved from National Science Teachers Association website: http://static.nsta.org/files/PB326E2web.pdf

Prensky, M. (2010). *Teaching digital natives: Partnering for real learning*. Thousand Oaks, CA: Corwin.

Quint, C. L. (2015). *A study of the efficacy of the flipped classroom in a university mathematics class* (Doctoral dissertation). Retrieved from ProQuest. (3707108)

Sams, A., & Bergmann, J. (2013). Flip your students' learning. *Educational Leadership*, *70*(6), 16-20. Retrieved from http://eric.ed.gov/?id=EJ1015329

Schunk, D. H. (2011). *Learning theories: An educational perspective.* (6th ed.). Boston, MA: Pearson Education.

Shadish, W. R., Cook, T. D., & Campbell, D. T. (2002). *Experimental and quasi-experimental designs for generalized causal inference.* Belmont, CA: Wadsworth Cengage Learning.

Smith, G. E., & Throne, S. (2007). *Differentiating instruction with technology in K-5 classrooms.* Eugene, OR: International Society for Technology in Education.

Sprinthall, R. C. (2012). *Basic statistical analysis*. Boston, MA: Pearson Education.

Tucker, B. (2012). The flipped classroom. *Education Next*, *12*(1), 82-83. Retrieved from http://educationnext.org/the-flipped-classroom/

U.S. Department of Education. (2010a). *Transforming American education: Learning powered by technology*. Retrieved from https://www.ed.gov/sites/default/files/netp2010.pdf

U.S. Department of Education. (2010b). *Education secretary Arne Duncan issues statement on the results of the Program for International Student Assessment* [Press release]. Retrieved from http://www.ed.gov/news/press-releases/education-secretary-arne-duncan-issues-statement-results-program-international-s

Vygotsky, L. S. (1956). *Selected psychological investigations.* Moscow: Izdatel'stvo Akademii Pedagogicheskikh Nauk SSSR.

Vygotsky, L. S. (1962). *Thought and language*. Cambridge, MA: MIT Press.

Vygotsky, L. S. (1978). *Mind in society: The development of higher psychological processes* (M. Cole, V. John-Stender, S. Scribner, & E. Souberman, Trans.). Cambridge, MA: Harvard University Press.

Vyogotsky, L. S. (1982). *On the child's psychic development.* Copenhagen, Denmark: Nyt Nordisk.

Wagner, T. (2008). *The global achievement gap*. New York, NY: Basic Books.

Weimer, M. (2002). *Learner-centered teaching: Five key changes to practice.* San Francisco, CA: Jossey-Bass.

Weiss, I. R., & Pasley, J. D. (2004). What is high-quality instruction? *Educational Leadership 61*(5). 24-28. Retrieved from http://www.ascd.org/publications/educational_leadership/feb04/vol61/num05/What_Is_High-Quality_Instruction%C2%A2.aspx

Wiezorek, C. (2012). *Student-centered literacy instruction: An examination of a teacher's experience.* (Doctoral dissertation). University of Northern Iowa.

Young, E. (2011). Flip it: An interview with Aaron Sims and Jonathan Bergmann. *Go Teach*, *1*(1), 12-14.

About the Author

Colleen M. Duffy earned her Ed.D. in Educational Leadership from Wilkes University and serves as an adjunct instructor for Wilkes University and Misericordia University. Dr. Duffy can be reached at colleen.duffy@wilkes.edu.

The Early Learning Harvest: The Relationship Between Teacher Preparation and Child Outcomes

Kimberly Zippie
Commodore Perry School District

Karen H. Larwin
Youngstown State University

Research suggests that early childhood education has provided a significant return on investment for society. These results are predicated on one important factor: The early childhood program must be high-quality. Unfortunately, clear criteria do not exist to identify the measures of high-quality programming. While a number of areas may be considered indicators of high-quality early childhood education, i.e., curriculum, class size, and teacher-parent relationships, the one area that has garnered significant attention is the teacher. The current investigation examines to what degree teacher variables of college degree, certification, years of experience in the county's early childhood programs, higher education institution issuance of degrees, or state issuance of certification affect child outcomes. The sample includes two years of data from 55 classrooms in a Pennsylvania county, representing 33 unique teachers, and the scores from 749 students. The outcome measure for the investigation is students' scores on the Teaching Strategies GOLD Assessment. Based on the findings of this investigation, there is a relationship between the teacher's degree, certification, and years of experience in the county's early childhood program, with years of experience revealing the greatest impact.

Early childhood education has garnered attention from the business, economic, and education communities as a sound return on investment. Significant research supports the fact that students who participated in early childhood programs realize substantial economic benefits compared to their counterparts who did not (Campbell, Ramey, Pungello, Sparling, & Miller-Johnson, 2002; Kostelnik & Grady, 2009; Shonkoff & Meisels, 2000). These benefits are evidenced by higher rates of home ownership, earned income, employment, and savings, as well as lower rates of welfare (Kostelnik & Grady, 2009). Additionally, important educational benefits exist in helping to close the achievement gap between children of low- and middle- to high-income families (Burchinal, Hyson, & Zaslow, 2008). However, an important caveat to these benefits is that the early childhood programs must be high-quality.

Measures of Quality

The greatest challenge is identifying consistent criteria for high-quality early childhood programs. While similar ideas exist, so does a lack of a consistent, agreed-upon standards and terminology. The National Institute for Early Education Research (NIEER; Espinosa, 2002) suggests that early childhood programs rate quality according to two commonly agreed upon categories: process and structure. Process is usually associated with the experiences that are provided in the classroom and evaluated according to a rating scale such as the Early Childhood Environmental Rating Scale (ECERS). Areas such as materials and resources that are used, relationships with parents, teacher-child interactions, and classroom environment are assessed and are more difficult to rate. Because process has more to do with experiences, it is also more expensive to assess (Kreader, Ferguson, & Lawrence, 2005). Evaluators must be trained, and evaluations should be conducted by more than one person to establish inter-rater reliability, which adds significant costs to the evaluation.

Structure, on the other hand, has to do with the configuration of the class and teacher qualities. Areas considered include class size, student-teacher ratio, teacher compensation, and training (Espinosa, 2002). While structural qualities are less direct, they are easier for researchers to measure, and certainly less expensive and time-consuming to assess. Structures are also easier for policymakers to affect and understand (Kreader et al., 2005).

For instance, policymakers' comprehension regarding whether an early childhood teacher's training is directly or indirectly related to program quality may exist only within their own contextual understanding as related to other teachers. More specifically, the program may be judged in terms of the same structural qualifications that define teachers in elementary and secondary schools as highly qualified—i.e., "attaining a bachelor's degree or better in the subject taught; obtaining full state teacher certification; and demonstrating knowledge in the subjects taught" (U.S. Department of Education, 2006).

However, analyzing early childhood programs in the same way as other teacher certification programs presents an additional problem. Because early childhood education was neither mandated nor identified in the No Child Left Behind (NCLB) legislation of 2001, there are significant variations between and within states regarding teacher training requirements (National Education Association [NEA], 2010). Unfortunately, the lack of mandates does not mitigate the impact an early childhood teacher has on his or her students' learning. The challenge remains: If research supports the benefits of quality early childhood programs, it needs to define the effective characteristics of such programs. The one criterion that continues to be prevalent is teacher training (Hyson, Tomlinson, & Morris, 2009).

Early Childhood Teacher Training

Regardless of the child's age, a wide range of research suggests that teachers play a critical role in student success (Darling-Hammond, 2000; Humphrey, Koppich, & Hough, 2005). In the Obama administration report, *Our Future, Our Teachers* (U.S. Department of Education, 2011), the Chiefs for Change observed, "Research has shown that teachers are the most important school-based factor

in determining student achievement" (p. 3). For example, Darling-Hammond (2006) conducted a study in South Carolina that reported results that showed the significance of a quality teacher. Teacher qualifications accounted for 64% of the variance of students' outcomes. Subsequently, by adding a poverty and minority factor, the variance was as much as 84% between students whose teachers were well-qualified and those whose teachers were not. Without the knowledge and skills to identify students' developmental needs and learning styles, teachers were not able to provide appropriate instruction.

To this point, the National Association for the Education of Young Children (NAEYC) revised its standards for early education programs in 2009 (NAEYC, 2009b). NAEYC (2009a) issued a position statement that all programs should address the need to prepare all early childhood professionals for careers "regardless of role, setting, or degree level" (p. 2). This statement was bold in that that it provided a definite distinction between elementary teacher preparation and early childhood teacher preparation. Early childhood education programs were no longer about training specifically for those pursuing general teaching careers. Skills and knowledge needed to address the demands of all aspects of early childhood, including the child and family, were identified as necessary for all those seeking careers with young children.

NAEYC (2009a) suggested three main areas to consider as developmentally appropriate practices (DAP) when making decisions about children: current knowledge about child development and learning; knowledge about the individual child gathered through various venues, such as observation and interviews; and the context of the child's life, including social and cultural aspects. These considerations were determined to be important for early childhood certification programs in relation to the teacher candidates' knowledge about children's learning and knowing how to assess their learning.

The National Board for Professional Teaching Standards (NBPTS) is a non-profit and non-partisan organization that defines standards for what a teacher should know and be able to do (NBPTS, 2012). With its core purpose to increase student learning and achievement, it delineates specific knowledge and skills that are necessary for teachers of various levels to master in order to be most effective in their respective classrooms. The early childhood generalist level aligns closely to the standards identified by NAEYC. NBPTS recognizes the importance of understanding the developing child, the diversity of children's cultures and contexts, and the critical role the family plays in a child's development. This program assists in standardizing what teachers should know and be able to do at a national level, since state certification programs have not been able to do so across borders.

Kostelnik and Grady (2009) provided explicit criteria for this education and training: "Teachers and staff have specific training in child development, early childhood education, and relevant subject matter content such as literacy, mathematics, science, social studies, physical education, and the arts" (p. 23). After a review of research, Whitebook (2003) concurred and concluded that "the presence of BA-level teachers with specialized training in early childhood education leads to better outcomes for young children" (p. 2).

The National Association of Early Childhood Teacher Educators (NAECTE) released a position statement that supported the importance of early childhood certification (Feeney, 2009). This statement was prompted by the concern that too many teachers with general elementary certifications were being hired to teach early childhood classes. Schools considered the flexibility of a teacher's certification for placement within the system, rather than taking into account what the teacher's specific training meant for the education of the student.

Complicating the ostensibly simple requirement of hiring teachers with an early childhood certification are the challenges that persist for many accredited higher education institutions. One challenge is finding faculty members with expertise in child development and appropriate practices. Faculty members are often adjunct instructors who only teach one or two courses and rarely meet with other members of the education department. This arrangement creates an issue of inconsistency within the curriculum and program delivery when instructors lack the expertise to incorporate developmentally-appropriate research that would lead to developmentally-appropriate classroom practices (NCATE, 2010).

A second challenge for the training institution is linking teacher candidates with cooperating teachers who have the knowledge of DAP *and* can provide evidence of its use in the classroom. Rigorous standards may be in place for teacher preparation programs and required for licensures, but many teachers lack the practical skills and ability to model appropriate instructional practices in their classrooms (Pianta, Belsky, Houts, & Morrison, 2007). These experienced teachers may be master teachers in curriculum or instructional delivery, but they may not model or emphasize the importance of consideration of the development of the child.

In 2009 Pennsylvania enacted new guidelines for teacher certification and designated a PreK-4 certification that required specific concentration on PreK-4 principles. *The Framework for Grades Pre K-4 Program Guidelines* (2009) included a focus on these principles: all children regardless of ability to learn, curriculum based on developmentally appropriate practices and the Pennsylvania Early Learning Standards and Academic Standards for grades 3 and 4, teacher preparation programs must use the child development frame of reference, connection to the importance of families in the educational process, and an understanding and appreciation of diverse populations. While not required by the Elementary and Secondary Education Act (ESEA; U.S. Department of Education, 2016), the framework recognized that early childhood education and middle-elementary education differ.

These guidelines also included a focus on producing evidence. This evidence must include ways the institution will demonstrate that the graduates have mastered the skills and knowledge needed to implement effective teaching. They must also verify that those instructors who are teaching in the certification program have expertise for both the content they are instructing and effective pedagogy to deliver the content.

One of the difficulties in researching the impact that teacher quality has on child outcomes in educational settings for young children stems from the necessity to discern the difference among teacher characteristics and other variables in the classroom (e.g., the curriculum, length of the

day, and student demographics). In a study by Scheffler (2009), interactions between student demographics of age, gender, ethnicity, primary language, etc., were studied to determine their impact on child outcomes. Her findings revealed, outside of age, the greatest factor in determining student outcomes was the teacher. Considering the current investigation's review of literature related to the benefits of high-quality early childhood education, the importance of the teacher and the inconsistency of early childhood teacher training, it is imperative to further examine whether the early childhood teachers' training has an impact on child outcomes. Specifically, this study explored whether there is a relationship between the training and experience of early childhood teachers and student outcomes.

Method

Sample

The sampling frame for the current investigation included classrooms comprised of students in a three- and four-year-old federally- and state-funded program in Mercer County in Pennsylvania. Located in northwestern Pennsylvania, Mercer County borders Ohio and spans approximately 673 square miles. Its population is approximately 115,000 people with a racial composition of 92% White and 6% Black or African American. The median household income is about $44,000. All participating children qualified for the program through federal poverty guidelines.

The data were gathered over the 2013-2014 and 2014-2015 school years and represent 55 classrooms and 33 different teachers in the county. All classroom teachers use a common curriculum and assessment. The overall results of the students' assessment were compared to specific areas of the teacher's training: college degree, certification, years of experience in the county's early childhood program, higher education institution issuing degree, or state issuing certification. An analysis of the data determined if teachers' specific training areas are related to student outcomes.

Instrumentation

Teaching Strategies GOLD Assessment tool was used to measure classroom results. The GOLD assessment is an observation-based assessment that measures 10 areas, but only the six research-based categories are reported in this study. These categories included social-emotional (SE), physical (PHY), language (LNG), cognitive (COG), literacy (LIT), and mathematics (MATH) skills. The assessment measures child growth and development and predicts school readiness. Ongoing, authentic assessment, using performance assessment tasks, measure results for children from birth through kindergarten (Teaching Strategies, 2010). Teachers are trained in the GOLD assessment tool and complete its interrater reliability certification to ensure they have an understanding of the assessment's expectations. Reliability and validity for the assessment were conducted through a sample size of 18,000 children that represented all 50 states and included 3,000 children for each of the age level categories: birth to 1, 1 to 2, 2 to 3, 3 or preschool, 4 or prekindergarten, and kindergarten (Teaching Strategies, 2013).

The authentic assessment was conducted through observation of children in the context of their own classroom over time. Teachers were able to document what a child knew and was able

to do by collecting artifacts that represent targeted objectives. These artifacts could include a photo of a child demonstrating a skill, a piece of work that was completed by a child, or a sticky note that quotes something a child said or did. Artifacts were saved in a portfolio that provided ongoing documentation of the child's learning (Heroman, Burts, Berke, Bickart, & Tabors, 2010). To determine the child's progress, the teacher used the collected artifacts to identify the child's skill and behavior levels on a 10-point scale. These artifacts were compared to "research-based indicators of learning and development" (Heroman et al., 2010, p. viii) for children from birth through kindergarten in each of the 10 areas.

Procedure

To determine whether relationships exist, students' levels on the Teaching Strategies GOLD Assessment tool were gathered from the 2013-2014 and 2014-2015 school years. Averages were recorded for each classroom representing six categories: social-emotional, physical, language, cognitive, literacy, and mathematics. The collected results were from the final assessment of the school year. Because the results are symbolic representations of levels, they were translated in ordinal numeric data to allow for analysis. Each teacher was assigned a unique number to identify him or her, and he or she was assigned to students in his or her classroom. A level for each training variable was assigned to each teacher. These training variables included college degree, certification, years of experience in the county's early childhood programs, higher education institution issuing degrees, or state issuing certification. Values were coded for each teacher's college degree, certification, years of experience in the county's early childhood program, higher education institution issuing degree, state of issuing certification, and student outcomes prior to analysis.

The results section presents the breakdown of the demographic variables, followed by the results of zero-order correlations analyses in an effort to understand the overlap in the reported outcome variables. Where the outcome variables were highly correlated, multivariate analysis of variance was used to assess four different categorical variables (degree, certification, state of certification, and years of experience) across student outcomes. The multivariate analysis of variance is preferable when multiple outcome variables are being examined when looking to understand the impact of the different categories on the outcome measures. This analysis reduces the potential bias in the outcomes by eliminating any overlapping variance between the multiple outcomes (Field, 2009, Tabachnick & Fidell, 2013). This multivariate analysis was used to determine if the different levels of degree area, certification, state of certification, and years of experience have an impact on student outcomes both holistically and for each assessment area separately. A separate analysis, analysis of variance, was used to assess the impact of the teacher's reported degree-granting institution. This separate analysis was used for this variable because of the wide variety of responses provided regarding where educators received their degrees.

Descriptive Statistics

The classroom breakdown by academic year is presented in Table 1.

Table 1
Academic Years

Year	Frequency	Percent
2013-2014	27	49
2014-2015	28	51

Notably, there were five more data sets represented for 2014-2015 than for the previous year. The data set included a total of 33 different teachers, who had an average of $M = 6.71$ ($SD = 6.17$) years in the program. Table 2 presents the breakdown of years of experience by clusters. These clusters were created due to the vast variance of years of experience from .25 years to 24 years.

Table 2
Years of Experience in Program

Years of Experience in Program	Number of Teachers	Percent
0-4	50	47
5-10	34	32
11-15	14	13
16-above	9	8

As displayed in Table 2, the greatest number of teachers represented was from 0-4 years and the smallest number was 16-above. Table 3 presents the breakdown of degree level.

Table 3
Degree Level

Degree Level	Frequency	Percent
BA	12	11.2
BS	87	81.3
BS/MS	8	7.5

As indicated in Table 3, most teachers earned a bachelor of science degree. Since the bachelor of arts degree provides a broader education, with fewer courses focused on the major than the bachelor of science curriculum, it is significant to know if either of the foci of these degrees provides greater child outcomes. Table 4 provides a breakdown of teacher certifications across the different classes.

Table 4
Teacher Certifications

Teacher Certification	Frequency	Percent
ECE	48	44.9
ECE/Elem	16	15.0
ECE/Elem/MS ECE	4	3.7
ECE/Elem/MS_ED	8	7.5
ECE/SPED	8	7.5
Elem + ECE credits*	23	21.3

Note. The Elem + ECE credits area included additional credits between 30-56 credits hours.

As indicated above, most teachers had an early childhood education (ECE) certification followed by the dual certification of early childhood education and elementary education (Elem). Next, the data were examined by the state of the degree-granting institution. Results indicated that 25 (76%) teachers received their degree in Pennsylvania; five (15%) teachers received their degree in Ohio; one (3%) teacher received their degree in New York; one (3%) teacher received their degree in Utah. A total of 15 institutions were represented.

Table 5 presents the student makeup of each class.

Table 5
Class Make-up

Class Makeup	Age of Children	Number of Children
Mean	3.5	7
Std. Deviation	0.502	3.162

Further analysis revealed that the average number of three-year-olds in a class was $M = 5.00$ ($SD = 2.31$) and the average number of four-year-olds was $M = 8.96$ ($SD = 2.813$). Starting scores, ending scores, and average growth scores were provided for each class or students. Table 6 presents the descriptive data for average starting and ending scores.

Table 6
Starting and Ending Scores and Growth

	SE	PHY	LNG	COG	LIT	MATH	Overall
Starting Scores	38.666	25.846	36.793	39.888	29.074	21.863	32.046
Ending Scores	52.636	32.368	48.379	54.866	50.899	34.642	45.652
Average Growth	13.97	6.522	11.587	14.978	21.846	13.019	13.645

Table 7 presents zero-order correlational analysis between all areas of development.

Table 7

Zero-Order Correlation Between Areas of Development

	SE	PHY	LNG	COG	LIT	MATH	Overall
SE	-	.700**	.836**	.773**	.675**	.676**	.880**
PHY		-	.677**	.595**	.608**	.590**	.757**
LNG			-	.789**	.666**	.670**	.873**
COG				-	.798**	.751**	.917**
LIT					-	.792**	.904**
MATH						-	.864**

Note. ** Correlation is significant at the 0.01 level (2-tailed).

As indicated above, all areas of development were highly correlated with the other areas of development, $p<.01$. The greatest relationship was found between social-emotional and language skills followed by cognitive and literacy skills.

Multivariate and Analysis of Variance

All tests of statistical assumptions were found tenable for a multivariate analysis of variance (MANOVA), so this analysis was deemed most appropriate to answer the stated research questions regarding degree area, certification, the state of the institution, and years of experience in the program. MANOVA is an analysis where highly-correlated outcome variables can be examined both simultaneously and independently across different independent variables. This approach is beneficial because the simultaneous examination allows for reducing potential bias by eliminating overlapping variance in the highly correlated dependent variables (Field, 2009; Tabachnick & Fidell, 2013).

The multivariate analysis, based on the Hotelling's Trace results, indicated that average growth across degree level, certification, and years of experience were significant. These results are presented in Table 8.

Table 8

Results of MANOVA Analyses

Multivariate	F	df	Error df	Sig.	Partial η^2
Degree	2.923*	6	80	0.012	0.180
Certification	2.078**	24	314	0.003	0.137
State of cert	1.236	6	80	0.297	0.085
Years	3.507**	18	236	0.000	0.211

Note. * and ** indicate significant results based on a $\alpha<.05$ and $\alpha<.01$, respectively.

As indicated above, the state of certification did not reveal significant results. The sample size did not support any interaction analysis. Table 9 presents the results of the between-subject analysis.

Table 9
Results of Between-Subject Analysis

Source	Variable	F	df	Sig.	Partial η^2
Degree Level	SE	0.494	1	0.484	0.006
	PHY	1.004	1	0.319	0.012
	LNG **	8.264	1	**0.005**	0.089
	COG	0.333	1	0.565	0.004
	LIT	1.388	1	0.242	0.016
	MATH	0.152	1	0.698	0.002
Certification	SE	1.194	4	0.319	0.053
	PHY **	4.329	4	**0.003**	0.169
	LNG *	2.853	4	**0.029**	0.118
	COG	0.785	4	0.538	0.036
	LIT	1.677	4	0.163	0.073
	MATH	2.053	4	0.094	0.088
State	SE	0.001	1	0.977	0.000
	PHY	0.074	1	0.787	0.001
	LNG	0.26	1	0.611	0.003
	COG	3.216	1	0.076	0.036
	LIT	1.975	1	0.164	0.023
	MATH	1.904	1	0.171	0.022
Years	SE **	12.404	3	**0.000**	0.304
	PHY **	4.9	3	**0.003**	0.147
	LNG **	7.746	3	**0.000**	0.215
	COG **	10.849	3	**0.000**	0.277
	LIT **	6.964	3	**0.000**	0.197
	MATH	2.635	3	0.055	0.085

Note. * and ** indicate significant results based on a $\alpha<.05$ and $\alpha<.01$, respectively.

As indicated in Table 9, the between-subjects analysis identified language skills as significant across degree levels. Additionally, physical and language skills were significant for certification area. Years in the program presented significant results in all developmental areas, but the area of math revealed marginal findings. Table 10 shows certifications by average growth of developmental areas.

Table 10

Certifications by Average Growth of Developmental Areas

Certification	SE	PHY	LNG	COG	LIT	MATH	Overall
ECE	14.454	7.125	11.960	15.254	22.600	14.019	14.2354
ECE/Elem	17.138	6.706	15.369	18.831	25.862	15.627	16.5463
ECE/Elem/MS ECE	13.425	7.475	10.625	17.800	19.800	11.675	13.4667
ECE/Elem/MS_ED	13.725	4.375	9.838	13.375	20.638	9.7750	11.9542
ECE/SPED	12.000	6.175	8.888	11.488	17.787	10.888	11.2042
Elem + ECE Credit	11.526	5.830	9.891	13.000	19.665	11.259	11.8607

As shown above, the two certification areas that showed the greatest overall growth were ECE and the dual certification of ECE/Elem. Language showed the greatest difference in between ECE and ECE/Elem, with ECE/Elem having the greatest growth.

Table 11 presents the mean score of the six developmental areas years of experience in the program.

Table 11

Mean Developmental Area Growth Score by Years of Experience

	0-4 years	5-10 years	11-15 years	16+ years
SE	11.748	13.624	22.900	13.489
PHY	5.478	6.579	9.857	6.900
LNG	9.456	11.679	18.657	12.078
COG	12.576	14.900	25.000	13.022
LIT	17.800	22.609	34.736	21.389
MATH	11.624	12.385	19.271	13.211
Overall	11.447	13.623	21.737	13.348

The greatest growth for all developmental categories was for teachers with 11-15 years of experience in the program

Further investigation examined the number of years of experience across reported certification. A Pearson's Chi-Sqare analysis revealed that there was a significant association between years of experience in the program and the represented certification areas, $\chi^2(15) = 86.81$, $p<.001$. The breakout of these data is presented in Table 12.

Table 12

Years of Experience in the Program Across Certifications

Certification	Years of Experience in Program				Total
	0-4	5-10	11-15	16+	
ECE	32	10	6	0	48
ECE/Elem	2	2	8	4	16
ECE/Elem/MS ECE	4	0	0	0	4
ECE/Elem/MS_ED	0	8	0	0	8
ECE/SPED	8	0	0	0	8
Elem + ECE Credit	4	14	0	5	23
Total	50	34	14	9	107

As indicated in Table 12, all participants with 11-15 years of experience are associated with the ECE and ECE/Elem certifications. Additionally, Table 12 reveals that all ECE/Elem/MS ECE and ECE/Elem/MS_ED certified teachers were associated with 0-4 and 5-10 years of experience in the program.

An ANOVA was conducted on institution because of the 15 different institutions reported. The results of the ANOVA provided no significant findings.

Discussion

The purpose of this study was to investigate differences in early childhood teachers and, specifically, their training. This study explored whether there is a relationship between the training and experience of early childhood teachers and student outcomes. The specific areas of the teacher's training included college degree, certification, years of experience in the county's early childhood program, higher education institution issuing degree, or state issuing certification. While extant research supports early childhood education, it also makes it clear that it must be high-quality. Even though "high-quality" has not been definitively identified, there is evidence that one of the most important factors in increasing student achievement, or creating a quality education, is the teacher (Darling-Hammond, 2006). This understanding leads to the next question: What determines a quality teacher?

College Degree

The three types of degrees that were included were the bachelor of science (BS) degree, the bachelor of arts (BA) degree and the bachelor of science with a master's degree. The BA degree provides a broader education with fewer courses focused on the major than the BS degree. The descriptive data revealed that the 81.3% of teachers earned BS degrees, 11.2% earned BA degrees, and only 7.5 % earned a BS with a master's degree. A multivariate test revealed that degree was significant, but the test of between-subjects analysis showed that degree was only significant for language skills. This finding may be an indication of the focus on language in a BS degree since BS programs tend to include more specific content courses.

Certification

The teachers' certification showed that the majority of teachers earned an early childhood education certification followed by dual certification of early childhood/elementary, dual certifications of early childhood/elementary and a master's degree, dual certification of early childhood/special education, and elementary certification with additional credits in early childhood education. The certification that showed the greatest overall average area of growth was the dual certification of ECE/Elem, and second was ECE. The multivariate test for between-subject analysis was conducted for certification; language and physical skills showed significance. Because teachers with the ECE certification have specific training to understand and assess the developmental needs of three- and four-year-olds, these findings seem appropriate.

Years of Experience in the County Program

The analysis between areas of development and years in program showed significant and positive correlation in all areas. Language ranked the highest correlation followed by literacy, social-emotional, and cognitive skills; math and physical skills were tied. According to Hyson and associates (2009), experiences that teachers have help determine the output of student results. The more accountability that exists within those experiences, the more likely the teachers will be successful.

Additionally, an interesting finding was that one cluster of years in the program, 11-15 years, was associated with greatest mean growth score across all developmental areas, especially considering the cluster only included 13% of the total teachers. From a programmatic point of view, it would be important to further investigate these differences from other clusters of teachers. Areas such as certification, degree, and professional development focus might be considered. The teacher cohort with 11-15 years of experience in the program presented the greatest growth for cognitive and literacy development. These developmental areas also reported the second highest relationship via the zero-order correlation between areas of development.

Not surprising is that the teacher cohort with 0-4 years' experience in the program showed the least average growth. According to Duncan et al. (2007), the experience of the teacher is critical in making appropriate connections between young children's social interactions and their learning. The lack of teacher experience in understanding and implementing appropriate connections between a child's behavior and academics can negatively affect the child's learning outcomes (Duncan et al., 2007).

Further examination of Table 10 revealed lower growth scores for higher levels of education, and Table 11 and Figure 2 showed the greatest growth for years of experience ranging from 11-15 years. Based on these unusual patterns, additional analysis sought to understand the association between years of experience in the program and certifications. Table 12 illustrates this association between years of experience in the program across certifications. The teachers with the experience in the program between 11-15 years are all represented in the ECE and ECE/Elem certifications. The highest certification levels are associated with the teachers with less experience.

Degree-Granting Institution

Fifteen different higher education institutions issuing degrees were examined to see if there was a relationship between child outcomes and certifying institutions. None of the areas of development presented significant results with the exception of physical skills. This variance may be due to the fact that only one teacher was identified as attending Western Governors University. The educator from this institution presented the highest physical average growth.

State of Certification

The analysis of the four states represented showed no significant differences. This finding is not surprising since there are significant variations between and within states specific to teacher training. Whitebook and Ryan (2011) reported tremendous variations exist between states and within state programs regarding qualifications of early childhood teachers. This lack of consistency is even less surprising considering the fact that early childhood education is not mandated, nor is identified, by NCLB (NEA, 2010).

Conclusion

The research supports prior studies that found that early childhood education makes a difference in the short and long term. It provides academic benefits for children by reducing the need for remedial services or special education, in addition to increasing academic skills and the likelihood that students will obtain more years of education (Campbell et al., 2002). Moreover, long-term advantages may be realized such as increasing rates of home ownership, earned income, employment, savings, and lower rates of welfare (Kostelnik & Grady, 2009). These advantages ultimately benefit society as higher incomes result in increased tax revenue, spending, and demands for services.

The caveat to the benefits of early childhood education was that it must be high-quality. While there is little agreement among the experts as to what defines a high-quality program, much of the research agrees on two categories of quality: process and structure (Espinosa, 2002; Kreader et al., 2005). Process has to do with the experiences students have in the classroom, as well as interactions between the teachers and families. Structure, on the other hand, has to do with areas that are much more objective and easy to regulate, such as class size, student-teacher ratio, teacher compensation, and training (Espinosa, 2002). Process is more difficult to rate since it is less objective, while structure is easier to affect and understand (Kreader et al., 2005). Choosing the "low-hanging fruit" of process is perhaps an easier place to focus in the future.

The seed of this research was first sown through a study by Scheffler (2009) that revealed that the teacher was the strongest indicator of child outcomes. This study sought to explore specific differences in teachers' training that might cultivate those outcomes. Considering the significant amount of research that supports the importance of high-quality early childhood education for children, their futures, and society, it is critical to continue to investigate connections between research and practice that will ultimately increase the yield of early childhood education and its early learning harvest.

References

Burchinal, M., Hyson, M., & Zaslow, M. (2008). *Competencies and credentials for early childhood educators: What do we know and what do we need to know?* Paper presented at National Head Start Association, Alexandria, VA.

Campbell, F. A., Ramey, C. T., Pungello, E., Sparling, J., & Miller-Johnson, S. (2002). Early childhood education: Young adult outcomes from the abecedarian project. *Applied Developmental Science*, *6*, 42-57. doi:10.1207/S1532480XADS0601_05

Darling-Hammond, L. (2000). Teacher quality and student achievement: A review of state policy evidence. *Education Policy Analysis Archives*, *8*(1), 1-44. doi:10.14507/epaa.v8n1.2000

Darling-Hammond, L. (2006). Securing the right to learn: Policy and practice for powerful teaching and learning. *Educational Researcher*, *35*(7), 13-24. doi:10.3102/0013189X035007013

Duncan, G. J., Dowsett, C. J., Claessens, A., Magnuson, K., Huston, A. C., Klebanov, P., … Japel, C. (2007). School readiness and later achievement. *Developmental Psychology*, *43*, 1428-1446. doi:10.1037/0012-1649.43.6.1428

Espinosa, L. M. (2002). High quality preschool: Why we need it and what it looks like. *NIEER Preschool Policy Matters*, *1*, 1-11. Retrieved from http://eric.ed.gov/?id=ed480816

Feeney, S. (2009). Introduction to the NAECTE position statement on early childhood teacher certification. *Journal of Early Childhood Teacher Education*, *30*, 186-187. doi:10.1080/10901020902996716

Field, A. (2009). *Discovering statistics using SPSS.* Thousand Oaks, CA: Sage.

Heroman, C., Burts, D., Berke, K., Bickart, T., & Tabors, P. (2010). *Teaching strategies GOLD: Objectives for development & learning: Birth through kindergarten.* Washington, DC: Teaching Strategies.

Humphrey, D. L., Koppich, J., & Hough, H. (2005). Sharing the wealth: National board certified teachers and the students who need them most. *Education Policy Analysis Archives*, *13*(3), 1-50. doi:10.14507/epaa.v13n18.2005

Hyson, M., Tomlinson, H. B., & Morris, C. (2009). Quality improvement in early childhood teacher education: Faculty perspectives and recommendations for the future. *Early Childhood Research and Practice*, *11*(1). Retrieved from http://ecrp.uiuc.edu/v11n1/hyson.html

Kostelnik, M. J., & Grady, M. L. (2009). *Getting it right from the start: The principal's guide to early childhood education.* Thousand Oaks, CA: Corwin.

Kreader, J., Ferguson, D., & Lawrence, S. (2005). Research to policy connections, childcare & early education research connections. Retrieved from http://eric.ed.gov/?id=ED531953

National Association for the Education of Young Children. (2009a). *NAEYC standards for early childhood professional preparation programs*. Retrieved from http://www.naeyc.org/files/naeyc/files/2009%20Professional%20Prep%20stdsRevised%204_12.pdf

National Association for the Education of Young Children. (2009b). *Where we stand on professional preparation standards.* Retrieved from http://www.naeyc.org/files/naeyc/file/positions/programStandards.pdf

National Association of Early Childhood Teacher Educators. (2009). Position statement on early childhood certification for teachers of children 8 years old and younger in public school settings. *Journal of Early Childhood Teacher Education*, *30*, 188-191. doi:10.1080/10901020902886677

National Board for Professional Teaching Standards. (2012). *Early childhood generalist standards for teachers of students ages 3-8* (3rd ed.). Retrieved from http://www.boardcertifiedteachers.org/sites/default/files/EC-GEN.pdf

National Education Association. (2010). *Raising the standards for early childhood*

professionals will lead to better outcomes (NEA Policy Brief No. 29). Retrieved from http://www.nea.org/assets/docs/HE/PB29_RaisingtheStandards.pdf

No Child Left Behind Act of 2001, 20 U.S.C. § 6319 (2008). Retrieved from http://www2.ed.gov/nclb/landing.jhtml

Pennsylvania Department of Education. (2009). *The framework for grades pre k-4 program guidelines*. Retrieved from http://www.education.pa.gov/Documents/Teachers-Administrators/Certification%20Preparation%20Programs/Specific%20Program%20Guidelines/Prek4Guidelines.pdf

Pianta, R. C., Belsky, J., Houts, R., & Morrison, F. (2007). Opportunities to learn in America's elementary classrooms. *Science*, *315*, 1795-1796. doi:10.1126/science.1139719

Scheffler, P. (2009). Evaluating the empirical electronically: Trends discovered from head start assessment data. *Field Experience Journal*, 3(1), 38-44. Retrieved from www.unco.edu/cebs/nfec/documents/Volume%203.doc

Shonkoff, J. P., & Meisels, S. J. (Eds.). (2000). *Handbook of early childhood intervention* (2nd ed.). Cambridge, UK: Cambridge University Press.

Tabachnick, B. G., & Fidell, L. S. (2013). *Using multivariate statistics*. Boston, MA: Pearson.

Teaching Strategies. (2010). *Research foundation: Teaching strategies GOLD™ assessment system*. Retrieved from https://shop.teachingstrategies.com/content/pageDocs/Research-Foundation-GOLD-2010.pdf

Teaching Strategies. (2013). *Teaching strategies GOLD® assessment system:Technical summary 2013*. Retrieved from https://shop.teachingstrategies.com/content/pageDocs/TS-GOLD-Technical-Summary-2013.pdf

U.S. Department of Education. (2016). *Laws & guidance elementary & secondary education*. Retrieved from http://www2.ed.gov/policy/elsec/leg/esea02/beginning.html

U.S. Department of Education. (2006). *Highly qualified teachers for every child*. Retrieved from http://www2.ed.gov/nclb/methods/teachers/stateplanfacts.html

U.S. Department of Education. (2011). *Our future, our teachers: The Obama administration's plan for teacher education reform and improvement*. Retrieved from http://www.ed.gov/teaching/our-future-our-teachers

Whitebook, M. (2003). *Early education quality: Higher teacher qualifications for better learning environments—A literature review*. Retrieved from http://cscce.berkeley.edu/early-education-quality-higher-teacher-qualifications-for-better-learning-environments-a-literature-review/

Whitebook, M., & Ryan, S. (2011). *Degrees in context: Asking the right questions about preparing skilled and effective teachers of young children* (Policy Brief No. 22). Retrieved from nieer.org/wp-content/uploads/2011/05/23.pdf

About the Authors

Kimberly Zippie, Ed.D., is superintendent in the Commodore Perry School District. With more than 30 years of experience in education, she has held positions as a special education teacher, classroom teacher, and the Regional Site Coordinator for the Pennsylvania Inspired Leadership program through the Pennsylvania Department of Education, all prior to her current position. She earned her B.S. in Special Education and Elementary Education from California University of Pennsylvania; her master's degree in curriculum, instruction, and assessment from Gannon University; her principal certification from Slippery Rock University; her Letter of Eligibility from Westminster College; and her doctorate in Educational Leadership from Youngstown State University. She is passionate about ensuring that all students, beginning with the very youngest, are prepared with the knowledge, skills and a plan to thrive after graduation. Her email address is kzippie@cppanthers.org.

Karen Larwin, Ph.D. acquired her doctorate from Kent State University in Evaluation, Measurement, and Statistics in 2007. She currently serves as a professor at Youngstown State University. Dr. Larwin has participated as the evaluator on multiple federal and statewide grant supported projects over the past decade. Her primary teaching focus is in the area of research methods, quantitative methods, evaluation, and measurement. She is currently a Chair for the American Evaluation Association's Quantitative Methods: Theory and Design TIG. She can be reached at khlarwin@ysu.edu.

Learning to Dance: A Look into Professional Knowledge Landscapes that Foster Teacher Inquiry

Keisha Hopkins Kibler
West Virginia University

Professional knowledge landscapes can foster teachers' authoring their own teacher Discourse or can position teachers as passive recipients of knowledge. This conceptual article merges feminist poststructuralist theory and Gee's Discourses to unpack the hegemonic practices across K-12 school systems illustrated in the work of Clandinin and Connelly as well as the author's own experiences as an English language arts teacher in an underperforming school. The author makes a case for the National Board Certification process or similar professional learning experiences as places for teachers to engage in inquiry of their practice and epistemic beliefs while authoring their teacher Discourse. The collaborative practice of working with other professionals to recognize the hegemonic practices and to apprentice other teachers to author their own teacher Discourse is illustrative of Lorde's assertion that "define and conquer must become define and empower."

Lorde (1984) writes, "In our world, divide and conquer must become define and empower" (p. 113). In the larger social world, this reorientation is a necessity for women to move forward, but in the specific world of teachers, I see more and more a need for opportunities where women can define themselves as women and teachers. Finding ways for teachers to define and empower themselves is essential because the teaching profession is still a female profession rooted in hegemonic practices of supervision and macro-level mandates that can stifle and disempower teachers. In a profession that has been historically feminized because of women's "natural" qualities and moral superiority (Preston, 1993), teacher educators and K-12 leaders need to create opportunities for teachers that empower teachers. This article analyzes two case studies of teachers' experiences across their specific professional knowledge landscape (Clandinin & Connelly, 1996; Connelly & Clandinin, 1999) as well as one significant experience in my own teacher identity development. This article ends with a discussion of how the National Board of Professional Teaching Standards (NBPTS) certification process can be a foundational empowering opportunity for teachers.

Theoretical Lenses

Gee (1999) describes Discourses—with a capital "D"—as "ways in which humans integrate language with non-language 'stuff' such as different ways of thinking, acting … in the right places and at the right time" (p. 13). Through performances of Discourses we become members of Discourse communities. Membership in Discourse communities is fluid and situational (Gee,

1999). People hold membership in multiple Discourse communities. Through interaction in social contexts, people enact different Discourses. Multiple Discourses can be enacted in one context or across contexts.

The key to Discourses is recognition. Gee (2000) explains that we often perform as a certain type of person within a context, and through our performance others recognize us as being that certain type of person. For Gee (2000), identity is performance. Through our performance in how we dress, act, speak, and engage with others, we are constantly defining and redefining our multiple identities. This process of defining and redefining our multiple identities moves beyond the "individuality" of identities to the discursive and social processes where identities are formed and reformed.

Often, we have a choice to make in which Discourses we choose to perform in a given context. Since multiple Discourses can be performed at a given time and recognized by others, we are constantly dancing with multiple identities to decide which one will take the lead. Through this dancing with identities, Discourses are formed, reformed, and even contested. Through social recognition, we quickly learn which Discourses are accepted in different contexts and which Discourses are inferior.

Gee's (1999, 2000) postmodern view of identity situates people as doers; through doing and performing, they write their own identities. Identities are not formed in isolation; they are socially created. Foregoing "modern society," the age before the Enlightenment where identity was ascribed based on structures of power rooted in traditions, Discourses focus on achieving identity through authoring oneself as a member of a Discourse community. This view does not deny that power structures exist in the postmodern age; they still exist, and they still ascribe people with limited resources to certain Discourse communities. But in the postmodern age, people have access to different ways to mobilize themselves and change their Discourse community. Gee (2015) claims that schools should function as socially liberating institutions where new identities are imagined and created. However, power structures within a school can be limiting instead of liberating. Even for teachers, who also navigate the power structures operationalized through policies, curriculum mandates, and macro-level decision making, the professional context of a school can stifle dances with Discourse where the same Discourses take the lead and continue to authorize the hegemonic practices that have traditionally structured our education system.

Examining the power structures across specific professional landscapes within a school community through a feminist poststructuralist lens places emphasis on "understanding gender and gender differences through the lens of discourse and the power relationships that are manifested through discourse" (Ward & Wolf-Wendel, 2008, p. 258). Zooming in on Discourse allows for a deeper understanding of how gender identity is socially constructed while navigating power relationships. Merging feminist poststructuralism and Gee's Discourses allows for deep analysis of how gender identity is socially constructed in situational contexts that are embedded in relations of power. It is through the merging of these two theories that I have come to recognize the complexities of gender across professional knowledge landscapes.

Professional Knowledge Landscapes: Sites for Epistemological Wars

Clandinin and Connelly's (1995) life work of teachers' experiences across multiple teaching contexts provides insight into the complexities of how professional identities are formed and reformed across "professional knowledge landscapes." The landscape metaphor captures the complexities of situational teaching contexts and allows for researchers to consider place, space, and time across a setting that can expand with diverse people and events that often have conflicting epistemologies. Epistemology is the heart of the landscape; the epistemic beliefs of the people create both intellectual and moral spaces (Clandinin & Connelly, 1995, p. 5) across the landscape. It is through examining two stories of teachers' epistemological stances through a feminist poststructuralist lens that I recognize ways epistemology is married to gender. Crotty (1998) suggests that feminine epistemology can be understood through recognizing that women "theorize the act of knowing" (p. 174) in different ways than men, such as in the ways of expressing concerns or raising issues. When we recognize that women speak in a different voice because of their cultural experiences, we open the door to understanding ways in which women approach understanding their world and their place in the world.

We see the effects of not cultivating feminine epistemology in a professional knowledge landscape through the story of Janice (as cited in Connelly & Clandinin, 1996), a teacher who was forced to navigate the power relationships of a set curriculum and her students' social and emotional needs. Janice describes the epistemological war between the curriculum and the reality she lived with her students as two voices conversing in her mind where "one urged me to focus on the program of studies so as to ensure that the children were learning material I was expected to teach, whereas the other continued to push me to look beneath the surface of what I was teaching and to uncover the stories the children were living" (Connelly & Clandinin, 1996, p. 15). Janice's story also reflects a struggle in her multiple identities as a female teacher. As a teacher, she was responsible for a set curriculum as well as her students' emotional and social needs; Janice also recognized the need for students to share their lived stories taking place outside the classroom space. It was a dancing of epistemologies of who has the power of knowledge in the classroom and what constitutes knowledge (a set curriculum or students' experiences) where Janice began to form and own her Discourse of a teacher because her story of success within her classroom space of the professional knowledge landscape was used to tell a specific story of the school—a story of meeting the diverse needs of children.

Often professional knowledge landscapes are not conducive for teachers to author their teacher Discourse community; the authoring is done for the teacher by macro-level power structures. We see evidence of this hegemonic authoring through the story of Sara (as cited in Connelly & Clandinin, 1996). For the first two years of Sara's practice as a teacher, mutual respect shaped the lived story of her relationship with her principal, Chuck. This relationship was built through dialogue and discussion in weekly journal entries. These journal entries became a space for Sara and Chuck to explore epistemology and author stories of themselves as a teacher and as an administrator. For Sara, the journaling provided the foundation needed to gain confidence in shaping her own classroom space along with others who held similar epistemological ideas on how to construct empowering classroom ecology. The stories of Sara and her colleagues were collectively used as

a success story in response to older stories of the school that depicted student violence and apathy to learning.

However, Sara's story changed with new administration and a new focus on a single vision of the school: one where learning was to look the same across grades and content areas. Sara uses a journal as a space to reflect on her frustration rooted in epistemological differences. She writes, "However, the staff as a whole … does not collaborate. We may consult, bargain, negotiate but we are not collaborative…, don't share a common purpose, have respectful and trusting relationships, don't spend much time talking about beliefs and values" (as cited in Connelly & Clandinin, 1996, p. 83). The differences in epistemology across professional knowledge landscapes are shaped by the vision of the administrator. Each administrator chooses how to position teachers on the professional knowledge landscape as active participants in building and shaping the landscape or as passive receivers of a specific vision. Through Sara's journal entry cited above, we see the effects of a non-collaborative professional knowledge landscape that forces teachers to engage in negotiations and bargaining. After the appointment of the new principal, Sara did not have the space or the support across the professional knowledge landscape to continue authoring her teacher Discourse. The authoring was done for her. The dancing between Discourses stopped, and the dominant hegemonic Discourse took the lead.

I have spent considerable space discussing how professional knowledge landscapes can foster teachers' authoring their own teacher Discourse or can position teachers as passive recipients of knowledge. As a teacher with 13 years of experience, I have been a member of professional knowledge landscapes that have helped cultivate my authoring of my teacher Discourse. My authoring has also been stifled through hegemonic practices within the context of the school and community where I teach. I recognize that my identity as a woman is partially constructed and informed by the professional knowledge landscapes I have been a part of throughout my teaching career (Ropers-Huilman, 2008); how administration perceives women also affects my teacher identity. I specifically draw on one community that informed my conceptualization of what it means to be a teacher as a woman in a professional knowledge landscape dominated by the hegemonic epistemic ideology that teachers are passive subjects. It was my fifth year of teaching at the same middle school in a rural region of the Appalachian Mountains. The school building itself was outdated, but within the walls passion for learning and collaboration was evident. This particular incident occurred during the reign of the fourth principal at this school in five years. The constant revolving door of administrative leadership, and consequent lack of administrative leadership, expanded the professional knowledge landscape to be one that promoted and supported collaboration among teachers. Teachers collaborated in creating a cohesive, supportive, and sustainable landscape that remained strong throughout the constant administrative changes and uncertainty. However, this specific principal did not view collaboration among teachers as being something useful or even something that should be allowed. This principal would start faculty senate meetings, ignoring the faculty-selected officers. He would talk over the female teachers and direct every decision. Female teachers were shut down and shut out of any decision making. The male teachers were often told not to attend weekly faculty meetings because he would just tell them what "they missed" at the weekly gettogethers at a local restaurant where the administrator and fellow male teachers

met. However, female teachers were expected to be in attendance and attentive to his vision. Our presence, as female teachers, at these meetings was not expected because our ideas were valued. The message was clear: We were required to attend, listen, and be good girls who follow his lead. Hegemonic practices did not allow for authoring of identities. We, as teachers and as women, were told what to think and how to think. Knowledge was constructed for us.

I constantly return to these memories of my fifth year of teaching. It was a conflicted year for me as I struggled with defining who I was as a teacher and who I wanted to become. The specific professional knowledge landscape, although rooted in hegemonic practices pushed forward by the principal, provided me with opportunities to define my teacher-self. It was through the collaborative practices and strength of our faculty that we were able to overcome the hegemonic epistemic beliefs of our administration. This same year I was also working through the National Board of Professional Teaching Standards (NBPTS) certification process. I was the second teacher in my school district to attempt this rigorous professional journey, so I had to seek out a professional knowledge landscape outside my school district to support me in my journey toward National Board certification. Through the support of my fellow faculty members in the professional knowledge landscape of my school and the professional network of which I became a part in the National Board cohort I joined, I began to recognize the need for membership in a variety of professional knowledge landscapes. Although my teaching context and the National Board cohort conflicted in epistemic beliefs, the inquiry into practice and opportunities to engage in discourse about teaching and student learning were foundational in my growth as a teacher. In viewing my fifth year through a feminist poststructuralist lens, I see how the administration viewed female teachers and how the NBPTS certification process supports teachers in authoring their teacher Discourse.

The National Board Certification Process:
A Journey Toward Defining Teacher Identity

Understanding how the National Board certification process was born and the reasoning behind its birth positions the process as a way for teachers to author themselves; through journeying through the certification process, teachers engage in a continuous process of defining themselves as teachers. The conceptualization of the NBPTS began with the publication of *A Nation at Risk* (National Commission on Excellence in Education, 1983). This report paid special attention to the teaching profession and the message was clear: Our teachers are underpaid and underprepared. According to the report, teacher education programs lacked time for content-area classes; there was a need to balance clinical, in-classroom experiences and content-area classes. After the publication of *A Nation at Risk,* the Carnegie Forum on Education and the Economy formed a task force to focus on improving teaching; shortly after, in 1987, the NBPTS was born (NBPTS, 2014a). Its mission is to advance the quality of teaching and learning by maintaining high and rigorous standards for accomplished teaching, providing a system to certify teachers who meet these standards, and integrating National Board Certification in U.S. education reform (NBPTS, 2014a).

Accomplished teachers know their content and how to teach their content (Shulman & Shulman, 2004). The National Board Certification process assesses teachers' existing knowledge

of their content and their pedagogical content knowledge, or how to teach their content. Content knowledge and pedagogical content knowledge do not function separately. Each informs the other. As teachers are masters of their content, they recognize the truths of their content and the various ways their content matter is organized. According to Shulman (1986), accomplished teachers can then rationalize why they selected a specific form of knowledge representation for their content area and how they convey the complexities of their content area to others. Pedagogical content knowledge includes more than knowing what to teach; it also includes knowing how to break down specific pieces of the content, predict misconceptions that students may possess prior to the lesson, and create authentic opportunities for students to work through their misconceptions and make meaning of the content (Shulman, 1986). Teachers who plan for misconceptions in students' understandings of the content also possess knowledge of their students. Accomplished teachers recognize that students are not blank slates; students' lived experiences shape their understanding of the world, and their understanding of the world may conflict with specific content knowledge. Accomplished teachers not only recognize this fact, but they plan for this in their teaching.

According to Elizabeth Edwards, NBPTS director of outreach and engagement, the National Board Certification process is not the end of professional learning but a step toward professional regrowth. As teachers journey through the process, they build on their existing content knowledge and pedagogical content knowledge while weaving in the knowledge of their students and their students' learning needs. This professional learning experience transcends the status quo of what we call "sit and get" professional development in-services where knowledge is constructed for teachers, and they are passive recipients. Edwards explains the difference between the professional learning that board certification provides and traditional professional development that plagues K-12:

> Usually the professional development a lot of teachers struggle with is surface level. It does not dive deeply into content, and it does not provide strong pedagogical practice. A teacher needs to have the opportunity to uncover and fully examine their practice, and that only happens through board certification. (personal communication, April 4, 2016)

Through the uncovering and examining of teaching practices, teachers become active participants in their own classroom and their own learning.

Putting teachers in charge of making meaning of their teaching practices is an initial step for teachers to author themselves as teachers. To connect National Board certification as an experience for teachers to engage in the process of authoring their teacher identity, I will analyze the NBPTS Five Core Propositions (NBPTS, 2014b) using a feminist poststructuralist lens. Through this lens, the Five Core Propositions are transformed from standards of better teaching to empowering statements that resonate with accomplished teachers. Accomplished teachers are active participants across their professional knowledge landscapes. The NBPTS conceptualizes the professional knowledge landscapes to include classrooms, teachers' experiences, and the community. Across these landscapes, teachers are actively engaged as professional thinkers, doers, and learners. For example, Proposition 4 recognizes teachers as informed doers in their classroom: "Teachers think systematically about their practice and learn from experience" (NBPTS, 2014b). One way, according

to NBPTS, that teachers can think about their practice and learn from experience is by critically examining their practices regularly to "deepen knowledge, expand their repertoire of skills, and incorporate new findings into their practice" (NBPTS, 2014b). Using a feminist poststructuralist lens to analyze Proposition 4 of the NBPTS core propositions positions the teacher as an author of their teacher-self. In particular, Proposition 4 calls for the teacher to use experience, education, and knowledge to question and to create. This approach transcends the status quo of hegemonic practices where teachers are positioned as passive recipients of knowledge.

The NBPTS also recognizes that the authoring of a teacher Discourse is not confined to the classroom space. Teacher knowledge transcends classrooms and is co-created with other professionals across the professional knowledge landscape. For example, Proposition 5 states, "Teachers are members of learning communities" (NBPTS, 2014b). The NBPTS further explains that membership in learning communities should not be passive; membership is active and collaborative with the shared goal of improving student learning (NBPTS, 2014b). Proposition 5 fights top-down hegemonic practices that are prevalent in educational communities; my own experiences confirm the reality of these top-down practices. Using a feminist poststructuralist lens to zoom in on the verbs "collaborate," "engage productively," and "lead" not only allows for the authoring of a teacher Discourse but recognizes that the only way teachers can alter professional knowledge landscapes is through collaboration and unity.

Practical Implications of NBPTS Cohorts

I am a Candidate Support Provider for the NBPTS, which means that I have been trained by the NBPTS to facilitate cohorts that support teachers as they journey through the NBPTS certification process. I draw on my experiences of participating in a National Board cohort to inform how I facilitate the cohorts I lead as well as the opportunities I create for teachers to engage in discourse about their practice and epistemic beliefs. I currently facilitate two cohorts in the state; therefore, I work with 10-15 National Board candidates a year (98% are female teachers). Throughout my six years of experience as a Candidate Support Provider, I have focused on using the cohort space for the candidates to think systematically about their practice within the specific context of their classroom and their community. Although the goal of engaging in the NBPTS certification process is to pass and achieve National Board Certification, I use the cohort space to apprentice candidates to author their teacher Discourse. Authoring a teacher Discourse begins in a teacher's classroom as he or she engages in critical analysis of his or her classroom practice. As teachers engage in this analysis, they begin to question how students are positioned in their classroom. This practice leads to discussions of how teachers are positioned across the professional knowledge landscape.

Teaching is an isolated profession. Teachers are confined to their classrooms every day. This experience can be damaging, especially when the dancing of Discourses in not allowed because of hegemonic macro-level practices or a single dominant vision for the professional knowledge landscape. Teachers who are forced to dance alone because of the dominant epistemic beliefs across the professional knowledge landscape begin to lose their teacher identity; not only is it snuffed out, but the craft of their dance becomes monotonous and robotic. It is more about getting

through the motions, which are set out by the hegemonic ideology of the landscape, and not about beauty of the performance.

Through collaboration with other teachers during my journey through National Board certification, I learned to dance again. The professional knowledge landscape of the cohort in which I participated during the year I worked on my National Board certification was foundational in my redefining of my teacher identity. Across this landscape was a diverse group of teachers from a variety of disciplines and school districts. Although there were conflicting epistemic beliefs across the landscape, this landscape did not snuff out ideas; this landscape was a space to engage in discourse and reflection about our teaching practice and how our practice connected to our epistemic beliefs.

Although the NBPTS certification process is not for every teacher, membership in a cohort, or a critical friend group, empowers teachers. One practical implication of learning environments that empower teachers is that they can apprentice teachers to begin to fight hegemonic practices of top-down classroom decision making in the K-12 system. However, this empowerment should not occur in isolation. It is through the collaborative practice of working with others, learning to dance with Discourses with a common goal, where teachers can engage in discussions to recognize the hegemonic practices and to apprentice other teachers to author their own teacher Discourse. This approach can also lead to the creation of new, professional knowledge landscapes that build on the existing professional relationships and invite newer teachers, or teachers who have been dancing alone for years, into the Discourse.

Teachers should invite beginning teachers into supportive professional knowledge landscapes where new teachers can learn early on in their teaching careers about the power of shared visions and collaborative learning rooted in inquiry. This practice is especially relevant for new teachers who are searching for answers and want to be told what to do in their classrooms, and once they are told what to do, often retreat back into the isolation of their classroom space. However, if teachers learn early in their career about the power of inquiry into their practice, they will seek our professional knowledge landscapes to feed that need for inquiry.

I have come to recognize that there is power in numbers, but there is greater power in shared goals. We are all teachers, collaborating for the betterment of student learning experiences. Lorde (1984) writes, "In our world, divide and conquer must become define and empower" (p. 113). It is when we work together with a common goal in mind that teachers are truly empowered. Positioning teachers as professionals who are knowers and informed doers not only fights against the hegemonic practices that plague the K-12 system. It also impacts the future generation of teachers. And teachers must continue defining and empowering themselves as teachers. This ongoing process will pave the way for the next generation of teachers to author themselves and create new teacher Discourses.

References

Clandinin, D. J., & Connelly, F. M. (1995). *Teachers' professional knowledge landscapes*. New York, NY: Teachers College Press.

Clandinin, D. J., & Connelly, F. M. (1996). Teachers' professional knowledge landscapes: Teacher stories—Stories of teachers—School stories—Stories of schools. *Educational Researcher*, *25*(3), 24-30. doi:10.3102/0013189X025003024

Connelly, F. M., & Clandinin, D. J. (1999). *Shaping a professional identity: Stories of educational practice*. New York, NY: Teachers College Press.

Crotty, M. (1998). *The foundations of social research: Meaning and perspective in the research process*. Thousand Oaks, CA: Sage.

Gee, J. P. (1999). *An introduction to discourse analysis: Theory and method*. New York, NY: Routledge.

Gee, J. P. (2000). Identity as an analytic lens for research in education. *Review of Research in Education*, *25*, 99-125. doi:10.2307/1167322

Gee, J. P. (2015). *Social linguistics and literacies: Ideology in discourses*. New York, NY: Routledge.

Lorde, A. (1984). The master's tools will never dismantle the master's house. *Sister outsider: Essays and speeches* (pp. 110-114). Trumansburg, NY: Crossing Press.

National Board of Professional Teaching Standards. (2014a). *Mission and history*. Retrieved from http://www.nbpts.org/mission-history

National Board for Professional Teaching Standards (2014b). *The five core propositions*. Retrieved from http://www.boardcertifiedteachers.org/about-certification/five-core-propositions

National Commission on Excellence in Education. (1983). *A nation at risk: The imperative for educational reform*. Retrieved from http://www2.ed.gov/pubs/NatAtRisk/index.html

Preston, J. A. (1993). Domestic ideology, school reformers, and female teachers: school teaching becomes women's work in nineteenth-century New England. *The New England Quarterly*, *66*, 531-551. doi:10.2307/366032

Ropers-Huilman, R. (2008). Women faculty and the dance of identities: Constructing self and privilege within community. In J. Glazer-Raymo (Ed.), *Unfinished agendas: New and continuing gender challenges in higher education* (pp. 35-51). Baltimore, MD: Johns Hopkins University Press.

Shulman, L. S. (1986). Those who understand: Knowledge growth in teaching. *Educational Researcher*, *15*(2), 4-14. doi:10.3102/0013189X015002004

Shulman, L. S., & Shulman, J. H. (2004). How and what teachers learn: A shifting   perspective. *Journal of Curriculum Studies*, *36*, 257-271. doi:10.1080/0022027032000148298

Ward, K., & Wolf-Wendel, L. (2008). Choice and discourse in faculty careers: Feminist perspectives on work and family. In J. Glazer-Raymo (Ed.), *Unfinished agendas: New and continuing gender challenges in higher education* (pp. 253-272). Baltimore, MD: Johns Hopkins University Press.

About the Author

Keisha Hopkins Kibler is a National Board Certified Teacher with 13 years of experience. She currently teaches English language arts in a rural K-12 setting. She also facilitates two National Board Certification cohorts that provide teachers with professional support as they journey through the process of National Board certification. In addition, she is pursuing her Ed.D. in Curriculum & Instruction/Literacy Studies with a minor in English education at West Virginia University where she also earned her master of arts in Secondary Education and a bachelor of arts in English. She can be reached at kmkibler@mix.wvu.edu.

Administrators' Perceptions of the Impact of the Pennsylvania Standards-Based Teacher Evaluation Model

Jenny L. Neff
Lower Merion School District

This qualitative research study explored administrators' perceptions of the Pennsylvania standards-based teacher evaluation system. Areas studied included perceptions of the impact of the system on teachers' instructional practices and professional growth, as well as the ability to provide useful feedback to teachers as part of the evaluation process. The study revealed that most administrators felt the system had a positive impact on instructional strategies, that Danielson's Framework for Teaching was valuable in guiding planning and instruction, and that the process helped teachers plan future lessons and assessments. Many participating administrators observed teachers using the framework to set professionals goals. A majority of administrators confirmed the system had an impact on the planning of professional development activities, while others felt it had no such impact. An overwhelming number of participants agreed that the system allowed them to give useful feedback both inside and outside their trained content area.

Nearly a half-century ago the Education in Secondary Schools Act (ESEA) of 1965 was passed, sparking discussions on the importance of teacher evaluation that have continued through the present day (Popham, 2013a, 2013b). More recently, the federal government's No Child Left Behind Act [NCLB] of 2001 became another major influence on education reform. Its focus on school accountability for student achievement resulted in public reports on school and district progress (NCLB, 2001), which led to more specific investigations into school-level, teacher-level, and student-level factors and how they affect student achievement (Marzano, 2003). School reform efforts began to spotlight teacher evaluation practices and how teachers could influence student growth, causing states to revisit and revamp their teacher evaluation systems (Canelake, 2012).

The U.S. Department of Education's ESEA Flexibility Program (2012) and the Race to the Top (RTT) program of 2011 both impacted teacher evaluation programs in all but two states (Popham, 2013a). The ESEA Flexibility document published guidelines to include in teacher evaluation systems (U.S. Department of Education, 2012). States reviewed and revised their teacher evaluation programs in response to these initiatives (Sartain, Stoelinga, & Brown, 2011; State Collaborative on Reforming Education, 2012) and have designed teacher evaluation models and researched standards-based components to create new systems (Culbertson, 2012; Popham, 2013b; Stumbo & McWalters, 2011). As a result of ESEA's providing funding to schools, there was an increased effort to determine teacher effectiveness as part of schools' evaluating and proving their success (Popham, 2013a; Taylor & Tyler, 2011; Weisberg, Sexton, Mulhern, & Keeling, 2009). Similarly,

the U.S. Education Department's RTT program provided possible financial incentives to schools that met certain requirements, thus continuing the trend of necessitating evidence and reporting data.

Pennsylvania's Teacher Evaluation System

In 2010, Pennsylvania joined other states in making changes to its teacher evaluation system, a system that had gone unchanged for over 40 years (Aument, 2011; Pennsylvania Department of Education [PDE], 2013). In 2012, the Pennsylvania Department of Education implemented a new model for the Commonwealth (PDE, 2013).

The Pennsylvania Teacher Effectiveness System, under Act 82, was passed in 2012 to measure educator effectiveness (PDE, 2013). The system collected data for each teacher in four areas: teacher observation/practice, building level data/school performance profile, teacher specific data, and elective data (PDE, 2013). Studies on the Pennsylvania Teacher Effectiveness System were done during the pilot or initial years of implementation; not all districts were part of the system or this research (Edwards, 2014; Hoffritz, 2014). Recommendations from this research called for continued study of the Pennsylvania model in order to refine and improve it (Edwards, 2014; Hoffritz, 2014). Additional research has emerged on the importance of providing feedback as part of the evaluation process (Donaldson, 2010; Goe, 2013; Taylor & Tyler, 2011; Weisberg et al., 2009). This topic was not explicitly studied in earlier research on the Pennsylvania model (Edwards, 2014; Hoffritz, 2014).

Methodology of the Study

The purpose of this qualitative study was to explore administrators' perceptions of the impact of a standards-based teacher evaluation model in the areas of teacher instructional practices, teacher professional growth, and administrator feedback. The research explored the perceptions of school administrators in their use of Danielson's Framework for Teaching tool, specifically for the observation/evidence section of the Teacher Effectiveness System (Danielson, 2007; PDE, 2015). The following research questions guided the study:

1. What are administrators' perceptions of the impact of the Pennsylvania standards-based teacher evaluation process on teachers' instructional practices?
2. What are administrators' perceptions of the impact of the Pennsylvania standards-based teacher evaluation process on teachers' professional growth?
3. What are administrators' perceptions of their ability to provide useful feedback as part of the Pennsylvania Standards-based teacher evaluation process?

Setting

This study took place in seven rural districts in central Pennsylvania. Administrators from these districts voluntarily participated in the study. All the districts had been using the Framework for Teaching (Danielson, 2007) as part of the new Pennsylvania teacher evaluation model, in compliance with Act 82 of 2012. The findings of this study provided feedback from those actively engaged in the practice of Pennsylvania's teacher evaluation system.

Demographics. Five of the districts were located in rural north-central Pennsylvania. The remaining two districts were located in rural parts of eastern Pennsylvania. The districts are identified by the letters A, B, C, D, E, F, and G.

District A is a rural district located in a rural section of eastern Pennsylvania. The district covers about 100 square miles, serving three boroughs and five townships and approximately 17,400 residents. The district serves a student population of about 2,400 students ranging from kindergarten through grade 12. There are two elementary schools, one middle school, and one high school. The district has a wide course selection offering for students, which includes college prep and AP classes. The schools are staffed with approximately 180 full-time professional staff, 110 full-time and part-time support staff, and 16 administrative staff members.

District B is located in a rural part of eastern Pennsylvania. It includes medium-sized residential areas and farms. It serves a community of just over 18,000 citizens living in a 127-square-mile area. District B consists of three elementary schools, one middle school, and one high school. Total pupil enrollment is nearly 3,000 students for grades kindergarten through 12. There are roughly 225 professional staff, 150 full-time and part-time support staff, and 20 administrators.

District C is located in central Pennsylvania and occupies a land area of just over 100 square miles. The district encompasses three boroughs and six townships with a population of almost 20,000. The district houses one elementary school, one intermediate school, one middle school, and one high school. The district employs approximately 200 professional staff, 160 full-time and part-time support staff members, and 12 administrators. They serve a student population of nearly 2,800 children in grades kindergarten through 12. District C offers a wide range of courses to students at all levels.

District D is a small town in central Pennsylvania comprised of four townships, covering roughly 80 square miles, with a population just over 14,000 residents. The district serves a student population averaging 1,600 enrolled in grades kindergarten through 12 and employs just over 130 teachers, 90 full-time and part-time support staff, and eight administrators. The district houses three elementary schools, one middle school, and one high school and offers a wide range of courses, including AP and college prep classes.

District E is located in north-central Pennsylvania and encompasses just over 300 square miles of rural, mountainous terrain. It stretches approximately 60 miles from its eastern to western boundary. The district serves nearly 14,500 residents. It includes three elementary schools and two secondary schools serving around 2,100 students in grades pre-kindergarten through 12. The district on average employs 210 teachers, 120 full-time and part-time support staff, and 10 administrators. The secondary curriculum features both academic and vocational programs.

District F encompasses a geographic area approaching 225 square miles, covering eight townships and three boroughs, with a population of close to 18,000 residents. The district has three elementary schools, one middle school, and one high school and has a student enrollment of about 2,400. The district employs close to 185 full-time teachers, 135 full-time and part-time

support staff, and 15 administrators. The curriculum includes a wide range of courses, from career and technical programs to college readiness and AP classes.

District G is a small, rural district in central Pennsylvania covering just over 100 square miles. It encompasses townships in three different counties, serving a population of around 17,000 people. The district has two elementary schools, one middle school, and one high school, with total enrollment approaching 1,500 students. The district employs on average 140 teachers, 100 full-time and part-time support staff, and 13 administrators. A wide range of secondary course offerings includes college prep and AP courses.

Participants

The study included 22 administrators from seven participating districts. They held positions charged with the responsibility of evaluating teachers in their districts. All the participants used the Framework for Teaching (Danielson, 2007) tool for evaluating teachers. Administrators from all levels (elementary, secondary, and district administration) were invited to participate in the study. For phase one of the study, 22 participating administrators took an online survey and were invited to participate in a follow-up interview. Five administrators, identified as Participants 1, 2, 3, 4, and 5, participated in follow-up phone interviews. Participation was voluntary for each phase of the study.

Instruments

Instruments for this qualitative study included a survey that contained Likert-scale, multiple-choice, and open-ended questions, as well as interviews.

Survey. The survey asked participants about their experiences, attitudes, and knowledge on a certain topic of study (Graziano & Raulin, 2010). The survey for this study included a 22-item questionnaire and was created using an online tool through Survey Monkey. The completion time of the survey was 10-15 minutes. The survey included three demographic questions and 19 content items. Of the latter, the design included 14 Likert-scale questions and one multiple-choice response, followed by four open-ended questions. Likert-scale responses allow participants to select the degree to which they agree or disagree across a continuum (Graziano & Raulin, 2010). The Likert-scale responses used in this study fell along a continuum of four choices, including strongly agree, agree, disagree, or strongly disagree. As part of designing the survey questions, the researcher contacted previous researchers, Hoffritz (2014) and Edwards (2014), who studied the topic of teacher evaluation in Pennsylvania. The purpose of contacting these researchers was to obtain permission to modify questions from their surveys that were relevant to this study. Permission was granted via email responses. The researcher piloted the survey questions using a group of three non-participating administrators, who accessed a sample survey link. Feedback from the pilot allowed the researcher to modify the questionnaire to more carefully tailor it to the study.

Interviews. Follow-up interviews allowed for the researcher to ask questions about a general topic and further uncover the participants' views and experiences in providing immediate data (Marshall & Rossman, 2011). Similar to the survey questions, the researcher piloted the interview

questions with three non-participating administrators prior to the study. The sample questions were sent via email and later discussed in person. Feedback from the pilot was used to make several modifications to the questions to help ensure clarity.

For the actual study, administrators who completed the survey were invited to participate, through voluntary consent, in an interview with the researcher. The interview included a set of six questions. These questions were based on the three main research questions of the study. Each interview lasted approximately 15-20 minutes and took place over the phone. The researcher took notes for each interview. Additionally, all interviewees granted permission to the researcher to record responses, which were later used to ensure accuracy. Written permission to both participate in the interview and record the interview was obtained prior to the interview as part of the consent process. Pseudonyms were used to maintain confidentiality.

Reliability and validity. Reliability is the ability to yield consistent results within the study (Graziano & Raulin, 2010). Piloting questions with non-participating administrators prior to the study assisted in ensuring reliability. The researcher took feedback from the pilot group and made changes to ensure clarity of the questions. Multiple uses of data collection can also help increase the reliability of the study (Graziano & Raulin, 2tab010). The use of Likert-scale, multiple-choice, open-ended, and interview questions helped ensure reliability in this study.

Validity refers to the methodological soundness of the research. Objective measures were taken throughout the study to avoid researcher bias by piloting questions for both the questionnaire and the interviews. Data provided by participants were accurately reported in order to present authentic research findings and ensure reliability and validity. Triangulation of data helps the researcher assert that findings are credible (Marshall & Rossman, 2011). In this study, the use of a variety of instruments (Likert-scale, multiple-choice, open-ended, and interview questions) allowed for triangulation of data by the researcher, confirming authentic perceptions of administrator participants.

Design of the Study

Marshall and Rossman (2011) described qualitative research as that which takes place in authentic settings and focuses on people's experiences and interpretations. A qualitative study was selected as the design of this research in order to describe perceptions of administrators who are actively using the Framework for Teaching (Danielson, 2007) tool as part of the Pennsylvania standards-based teacher evaluation system. A qualitative method of inquiry was used in order to explore current perceptions of administrators on how they viewed the impact of the evaluation system on teachers' instructional practices, teachers' professional growth, and their ability as administrators to provide feedback as part of their evaluation experience. The results of the study have helped the researcher gain insights and new ways of understanding the standards-based teacher evaluation system from the perspective of administrators.

Procedure

Initial contact was made with two intermediate units (IU) in central Pennsylvania. As a result of this contact, a lead person from each IU sent an email to public school superintendents in their region to announce the research study and the invitation that would be sent via email. Next, the researcher sent a formal email request to district superintendents from these IU regions requesting permission for their districts to participate in the study. An official invitation letter was included in the email to the superintendents. Those who agreed to participate in the study subsequently sent an official letter of permission on their district letterhead to the researcher.

Next, the survey and interview questions were developed based on the three main research questions of the study. Permission was also obtained from two researchers who had explored the topic of teacher evaluation in Pennsylvania. This effort allowed the researcher to modify questions used in earlier research. The survey questions were piloted by a select group of non-participating administrators to ensure accuracy and clarity of the questions and validity of the instruments. Feedback was sent to the researcher via email and any necessary changes were made. After the research instruments were refined, participating districts were finalized, and letters of permission were received, the researcher submitted all required materials to Immaculata University's Research Ethics Review Board (RERB).

Approval was granted from Immaculata University's RERB, after which the researcher contacted each participating superintendent (or contact person as designated by the superintendent) to obtain administrator email addresses. The researcher contacted participating district administrators to provide the survey consent letter and an electronic link to the survey on the Survey Monkey website. They had three weeks to complete the survey.

The survey included an introductory paragraph and consent statement, followed by the survey questions. It also included an embedded statement inviting participants to take part in the next phase of the study, the interview. Those interested in taking part in the interview sent contact information to the researcher. The researcher then contacted participants by email or phone to schedule an interview time. Interviews were scheduled to accommodate participants and took place over the phone.

The interview questions were designed by the researcher, based on a review of the literature, and focused on the three main research questions of the study. All six questions were open-ended to allow participants to provide details related to their experiences and perceptions of the teacher evaluation system. Each participant was provided with an overview statement about the study, as well as a consent form. Consent to record the interview was also part of this process. The researcher obtained permission from each participating administrator to record the interview prior to the interview, using the interview consent form. This practice communicated the continued importance of confidentiality as part of the study. The researcher recorded participant responses both in writing and in audio-recorded format. The recording of the interview helped ensure the researcher's accuracy in her understanding of participant responses.

Results from the survey and the interviews were maintained in confidentiality by the researcher. The survey results were tallied and analyzed using the database information from the Survey Monkey tool. Interview answers were compiled and checked for accuracy using the audio recordings. The researcher looked for similarities, differences, and patterns found in administrators' perceptions. A summary of the findings was later shared with participating districts.

Data Analysis

Collected data from both the survey and the interviews reported administrators' perceptions of the impact of the Pennsylvania standards-based teacher evaluation system in areas of teacher instructional practices, teacher professional growth, and administrator feedback. Data analysis followed the procedure outlined by Marshall and Rossman (2011). Steps followed in data collection and analysis included organizing, coding, finding themes and categories, comparing similarities and differences, searching for alternative understandings, and reporting results in both narrative and table formats (Marshall & Rossman, 2011).

Likert-scale question results were used to determine administrators' general feelings about the research questions. The multiple-choice response question provided examples of teacher instructional strategies administrators have observed as part of the teacher evaluation process. Open-ended survey questions allowed administrators to expand on these answers, resulting in the sharing of more personal experiences and details to be reviewed and compared by the researcher. Interview question results provided immediate and explicit details through conversations related to the three research questions. All these methods were used to help triangulate data, as well as reinforce research findings from the survey. As a result of these steps, common themes were revealed through the collected data.

The Results of the Survey

Demographic information covered areas of current job assignment, years as an administrator, and completed hours of training related to the standards-based evaluation system. Current job assignments of the participants were evenly distributed across seven (32%) elementary, eight (36%) secondary, and seven (32%) central office administration levels. The number of years of experience the participants had working in administrative positions varied, with the majority holding a position for less than 15 years. Table 1 shows the demographic data regarding the participants' years as an administrator.

Table 1

Demographic Data for Years as an Administrator

Years as an Administrator	Responses
1 to 5 years	32% (7)
6 to 10 years	23% (5)
11 to 15 years	32% (7)
16 to 20 years	5% (1)
21 to 25 years	5% (1)
26 to 30 years	0% (0)
More than 30 years	5% (1)

Note. N=22.

The final demographic question asked administrators how many hours of training they had completed on the new Pennsylvania standards-based teacher evaluation system. Table 2 lists the hours of training on the evaluation system completed by the administrators.

Table 2

Demographic Data for Hours of Training on Evaluation System

Hours of Training on Evaluation System	Responses
0 hours	0% (0)
1 to 5 hours	18% (4)
6 to 10 hours	9% (2)
11 to 15 hours	36% (8)
16 to 20 hours	0% (0)
21 to 25 hours	9% (2)
26 to 30 hours	0% (0)
More than 30 hours	27% (6)

Note. N=22.

Instructional Practices

Overall, administrators saw a change in the use of instructional practices by teachers with the new evaluation system and felt teachers used the guidelines from the evaluation system for future planning. Table 3 provides a summary of responses from administrators relating to their perceptions of the new teacher evaluation system in regard to teachers' instructional practices.

Table 3

Administrators' Perceptions of the Impact of the Evaluation Process on Teachers' Instructional Practices

Statement	Participant Response			
	SA	A	D	SD
4. Change in the use of instructional practices	0% (0)	64% (14)	36% (8)	0% (0)
6. Provides guidelines for future lesson planning	9% (2)	64% (14)	23% (5)	5% (1)
7. Has had no impact on instructional practices	0% (0)	14% (3)	82% (18)	5% (1)

Note. N=22.

Administrators were asked to choose specific instructional strategies in which they had observed an increase since the implementation of the evaluation model. The instructional strategies used in the study were outlined in Danielson's (2007) Framework for Teaching teacher performance rubric, under domain 3, component 3c: "Engaging Students in Learning." Results showed the top instructional strategy was the use of suitable and engaging instructional materials and resources. This strategy was followed closely by teachers' creating a coherent lesson structure with appropriate pacing and engaging students in activities and assignments. Productive and appropriate grouping of students was ranked next. Nine administrators selected both high levels of student engagement and engaging discussion techniques as instructional strategies they had observed. High-quality questioning had the lowest response rate. It is important to note that administrators were asked to select the instructional practices in which they had seen an increase, so "no response" may imply that a specific strategy was observed but not at an increased level or not observed at all. Table 4 depicts the data regarding instructional strategies.

Table 4

Increased Use of Instructional Practices as Observed by Administrators

Instructional Practice	Response	No Response
Suitable and engaging instructional materials and resources	55% (12)	45% (10)
Coherent lesson structure and appropriate pacing	50% (11)	50% (11)
Engaging activities and assignments	50% (11)	50% (11)
Productive and appropriate grouping of students	45% (10)	55% (12)
High levels of student participation	41% (9)	59% (13)
Engaging discussion techniques	41% (9)	59% (13)
High-quality questions	27% (6)	73% (16)

Note. N=22.

Teacher Professional Growth

The second section of the study focused on teachers' professional growth and design, professional goals at various career stages, and motivating teachers through professional development. Survey questions asked administrators if they used the new system to help them design professional

development activities for teachers in their district. Of the 22 responses, 73% agreed with the statement, while 28% disagreed.

Next, administrators were asked if the new evaluation system helped teachers establish goals for professional growth. Responses included 64% agreeing with the statement and 36% disagreeing with the statement.

In relation to professional development, administrators were asked if as a result of the new evaluation system professional development options in their district were differentiated to meet the needs of teachers at various career stages. The survey responses showed 50% agreed and 9% strongly agreed. The remaining 36% disagreed, and 5% strongly disagreed.

Administrators were evenly divided when asked if as a result of the evaluation system the professional development options were motivating teachers to improve practice, with 50% agreeing and 50% disagreeing. None of the survey responses fell in the strongly agree or strongly disagree categories.

Finally, on the topic of professional growth, administrators were asked if the evaluation system helped teachers grow professionally. The responses showed that overall 73% agreed, while the remaining 27% disagreed. Table 5 summarizes the data for administrators' perceptions of the impact of the evaluation process on teachers' professional growth.

Table 5
Administrators' Perceptions of the Impact of the Evaluation Process on Teachers' Professional Growth

Statement	Participant Response			
	SA	A	D	SD
8. Helps design professional development activities.	9% (2)	64% (14)	23% (5)	5% (1)
9. Helps teacher establish goals for professional growth.	9% (2)	55% (12)	36% (8)	0% (0)
10. Professional development options are differentiated.	9% (2)	50% (11)	36% (8)	5% (1)
11. Professional development options are motivating.	0% (0)	50% (11)	50% (11)	0% (0)
12. Helps teachers grow professionally.	5% (1)	68% (15)	23% (5)	5% (1)

Note. N=22; SA= Strongly Agree, A=Agree, D=Disagree, SD=Strongly Disagree**.**

Administrator Feedback

Survey questions for this section of the study focused on administrators' ability to provide useful feedback to teachers as part of the evaluation process. Content of feedback, communication

with teachers, and opportunities for administrators to meet and discuss the reliability of their evaluation findings were all part of the survey.

Ninety-six percent of administrators agreed that the new evaluation system process allowed administrators to provide useful feedback on teachers' planning and instruction. Additionally, the majority of administrators agreed with the statement regarding their new evaluations' containing a balance of encouraging positive comments and suggestions for improvement and growth.

In regard to providing feedback, administrators were asked if they felt they were able to provide purposeful, specific, and timely feedback as part of the evaluation process. Eighty-six percent of administrators agreed they are able to provide this type of feedback with the new evaluation system. Additionally, administrators were asked if they felt as comfortable providing feedback to teachers in their trained content areas as they did for teachers outside their trained content areas. A majority of administrators were comfortable providing feedback in both their trained and outside their trained content areas, with 86% agreeing. Of those responses, 10% strongly agreed and 76% agreed. The remaining 14% of administrators disagreed with the statement. In general, administrators felt comfortable providing feedback to teachers in a variety of content areas, while a small number did not feel as comfortable giving feedback to teachers in areas outside their own trained content areas.

As part of the teacher observation process, administrators were asked if they felt they had ample time to engage in two-way conversations with the teachers they evaluated. A higher number of responses reported administrators felt they did not have ample time with the new evaluation system to have these exchanges, with 57% in disagreement and 5% in strong disagreement. Conversely, 38% agreed with the statement, revealing they believed they had ample time for two-way conversations with teachers they evaluated.

In working with other evaluators, participants were asked if they had opportunities to collaborate to establish inter-rater and intra-rater reliability in relation to the evaluation process. An overwhelming 76% disagreed with the statement, believing they did not have collaboration opportunities as such, while 24% agreed they had collaboration opportunities. Table 6 represents data relating to administrator feedback.

Table 6

Administrators' Perceptions of the Ability to Provide Useful Feedback as Part of the Evaluation Process

Statement	Participant Response				
	SA	A	D	SD	NR
13. Administrator is able to provide useful feedback on teachers' planning and instruction	29% (6)	67% (14)	5% (1)	0% (0)	0% (1)
14. Evaluations contain a balance of encouraging positive comments and suggestions for improvement and	19% (4)	71% (15)	10% (2)	0% (0)	0% (1)
15. Administrator provides purposeful, specific, and timely feedback.	24% (5)	62% (13)	14% (3)	0% (0)	0% (1)
16. Administrator has time to engage in two-way, meaningful conversations with evaluated teachers.	0% (0)	38% (8)	57% (12)	5% (1)	0% (1)
17. Administrator has opportunities to collaborate about inter-rater and intra-rater reliability.	0% (0)	24% (5)	62% (13)	14% (3)	0% (1)
18. Administrator is comfortable providing feedback both in and outside of trained content areas.	10% (2)	76% (16)	14% (3)	0% (0)	0% (1)

Note. N=22; SA=Strongly Agree, A=Agree, D=Disagree, SD=Strongly Disagree, NR=No Response.

Open-Ended Responses

Open-ended survey questions allowed administrators to expand on their survey answers. This resulted in more personal experiences and details for the researcher to review and compare.

Instructional Practices

In open-ended response survey questions, administrators were asked about the impact the new evaluation system had on classroom instruction. Among those who felt the new system had such an impact, there were common themes. The new system made teachers more aware of expectations for student learning. It helped align intended outcomes with instructional practices and assessment. One administrator expanded on the point stating, "Many teachers are more aware of planning their instruction to include highly engaging activities and assessments; including more formative assessments, and using assessment data to drive their instruction." While some administrators stated their district always had quality lessons, the new system brought with it "clear content goals and targets."

Similarly, on the topic of adult learning within the evaluation process, respondents stated both parties involved in the process became more aware of the domains in the Framework for Teaching tool, which created a common language with examples and descriptors for both teachers and administrators. This awareness led to more purposeful lessons with highly-engaging activities and assessments. Additionally, one administrator discovered, "Teachers are using the rubric to self-reflect on instructional practices."

One respondent indicated that the new teacher evaluation system has "put an emphasis on reaching all learners and differentiating for their needs." In addition to lessons' being student-

centered, teachers know the components from the Framework for Teaching they need to include in order to succeed on their evaluations. Similarly, another administrator stated, "Teachers strive for 'distinguished' and the examples of evidence are clear."

Contrary to findings that supported how the teacher evaluation system has impacted instruction, some administrator responses indicated little or no connection of the new system to instructional changes they have observed. One administrator explained that it is too early to determine the new system's impact but identified a problem among teachers who teach tested vs. non-tested content areas. The administrator described how some teachers teach tested subjects (e.g., Keystone Exam Algebra course) and student test scores contribute to their overall teacher effectiveness rating. Meanwhile, other teachers within the same department might teach courses that do not include student assessment results in their teacher effectiveness rating. The administrator noted the pressure that tested subject area teachers perceived compared to non-tested area teachers, stating that teachers who do not teach Keystone courses "don't have the same pressures [and] it creates some dissonance among teachers."

Another administrator posited that "there is not a causal relationship" between the new evaluation system and changes the district has seen in instructional practices in the classroom. That district was already using the Framework for Teaching tool and designing professional development to improve specific instructional strategies, so there may have been little to no impact from the new system.

Teacher Professional Growth

In open-ended response questions, administrators were asked how the new teacher evaluation system impacted professional development in their districts and if they were doing anything differently since the onset of the new system. The 20 responses were divided into two main categories: individual professional development and building or district professional development.

Three responses addressed professional development opportunities from an individual perspective. One stated that professional development is "more tailored to individual needs" of the teachers as they go through the evaluation process. Another confirmed this opinion, indicating that teachers are able to select activities to address their needs from the choices available to them. All three responses focused on the fact that professional development for teachers had become more individualized since the inception of the new system.

Seven of the administrators' responses focused on professional development as it pertained to building or district-wide training. Within this category, responses covered training teachers to understand or use the evaluation tool, analyzing student achievement data using the new system, addressing staff instructional needs as a result of evaluation findings, and modeling instructional strategies.

About one-third of the administrators said the evaluation system had not really impacted professional development in their districts. One of the reasons presented was that effective professional development was already underway in using the Framework for Teaching, so this

practice was not a new area for the district. Equally, some districts already had multiple-year professional development plans in place for identified initiatives, so the focus stayed on those areas. These topics ranged from learning-focused strategies, literacy, Pennsylvania Common Core alignment and sequencing, and other initiatives in relation to district needs. Therefore, the new evaluation system did not impact their preexisting professional development plans. One administrator mentioned that they had grant monies allocated for specific initiatives, so their time was devoted to professional development associated with grant requirements.

Administrator Feedback

Through open-ended responses questions, administrators were asked how the Pennsylvania standards-based evaluation system impacted the feedback they gave to teachers as part of the process. Nineteen administrators answered the question, while three did not respond. Of the respondents, four believed that the new evaluation system brought insignificant or negative changes from the feedback process, while 15 responses detailed positive changes.

Common themes emerged from the responses. Many administrators noted more focus on preparation and planning in their pre-conference meetings, with more feedback provided regarding preparation and planning using the Framework for Teaching rubric. One administrator noted the rubric was helpful in better understanding teachers' preparation and planning efforts.

Another administrator stated, "My feedback is much more focused and meaningful. The pre- and post-conferences warrant time for discussion of planning, which was often-times missed prior to the Teacher Effectiveness instrument." Another administrator indicated that the rubric allowed for teachers' professional responsibilities to be recognized. Others noted the use of the rubric to facilitate discussions and affirmed that the feedback in the face-to-face meetings was based on the rubric. The rubric was viewed as an element that added accountability for both teachers and evaluators. One administrator noted, "The feedback isn't much different but the pre-observation conference has yielded in-depth conversations that have resulted in some teachers adjusting the original lesson plan."

In addition to the benefits of using the rubric, some administrators recognized a difference in the quality of their feedback since the new evaluation system was implemented. Feedback was described as specific, consistent, explicit, and constructive. One administrator presented advantages, stating, "The feedback has become more explicit and two-way. Teachers have the opportunity to provide additional evidence the observer may have missed or which required clarification." The term "evidence-based" was used in more than one response, with one administrator noting the evidence was "clear cut as to whether it exists or not" and another confirming it was "free of judgment." Lastly, feedback was described as being immediate, with a 24-hour turnaround of an administrator sending comments to the teacher after an observation.

Some administrators felt the new evaluation system had no impact on the feedback they provided to teachers. One stated the evaluation system has "made the process more cumbersome." Another indicated, "It really has not impacted it very much. We were utilizing Danielson's rubrics prior to this becoming a PDE mandate, so we have been having these conversations for years

prior to PDE turning her work into an evaluation tool." Additionally, one administrator felt the evaluation system was not good for teacher morale stating, "When the trainers at the IU said that the state has said repeatedly that you can visit 'distinguished' but don't plan to live there—it is a bit disheartening." Finally, one administrator preferred the old system where administrators gave the rating of "satisfactory" or "unsatisfactory," stating that with the addition of a "needs improvement" category, the old system was preferred to the new one.

Interview Responses

Five administrators participated in follow-up interviews. All five participants agreed the new evaluation process brought an increased awareness to the Framework for Teaching evaluation tool. They believed teachers are more aware of what they have to do to get a higher rating and work toward it.

Instructional Practices

As other factors, such as student data and building-level data, weighed in as part of their final score/rating, administrators reported that teachers looked to the teacher evaluation tool as something over which they had more control. Participant 1 explained, "They [teachers] want to be able to control what they can control, and they feel the teacher evaluation process is something they do have a lot of control over." Participant 1 further explained that the evaluation tool, combined with a two-way conversation between the evaluator and teacher, gave teachers "real things to try in the classroom to get to 'distinguished,' if that's an area they want to become distinguished in." Participant 2 agreed, citing clear expectations with examples of what tiered performance looks like within these expectations. Participant 2 expanded on the impact the clarity of framework had on teachers:

> That makes weak teachers stronger. They can look to the examples to see how to get better. And it gives the teachers who have always been satisfactory or amazing who want feedback, more examples to go to…For some teachers who may have gotten tired or a little sleepy, they were awakened by the rubric, by the language, the examples, and the specificity. And it also re-energized those teachers who wanted to get better but didn't know how.

Contrarily, two of the participants felt that while they had seen an increased focus on the Framework for Teaching tool, the changes they saw in instructional practices were not necessarily a result of the new tool. Participant 3 summarized that the newness of the tool has left teachers still trying to figure out what they need to do and how they need to change. Additionally, Participant 3 explained that the standards-based evaluation tool "for some has caused teachers to change their instructional practices, while some are just trying to find ways to get around the system. It's so new that there has not been enough time to really determine if the changes are of benefit." For example, for some teachers who instruct tested subjects (e.g., Keystone exam courses), the increased pressure they feel in having student scores count toward their teacher final evaluation score (as part of their value-added average) might cause them to not want to be assigned to teach that class three years in a row. Participant 4 concluded that the changes in instructional practices

were more likely due to well-designed professional development that addressed the needs of the teachers in specific areas of instruction rather than the new evaluation system.

Three of the five participants had seen changes in instructional practices. Participant 5 felt the new evaluation tool had caused teachers to become more attuned to their planning and questions. They also believed it provided guidelines and helped teachers focus on what was expected of them. Teachers looked more at data and how it related to future planning. Participant 5 felt the new tool brought an increase in teachers actively engaging students and asking in-depth questions. Participant 1 noted positive instructional strategy changes in student grouping and lesson planning.

While there were specific positive changes in instructional practices, Participant 2 saw a persistent challenge in high quality questioning, pointing out, "Teachers, even with the rubric, still need help asking deep, quality questions, eliciting good answers from kids, and giving quality feedback to the kids. Depth of knowledge we can talk about, but it's hard to do." Participant 1 also cited a continued struggle with questioning and discussion practices as an instructional need for improvement.

Another area of weakness presented by Participant 2 was in the area of creating valid and reliable assessments, claiming, "This is all just an area where our teachers haven't had a lot of instruction, in their undergraduate work or professional development. It's a hard thing to quickly get out of a rubric, so that's an instructional practice challenge." Participant 2 described an issue concerning the rubric and its relationship to instructional practices in that although teachers may be meeting all the requirements in the evaluation tool to receive a "distinguished" rating, the activity the students are engaging in must still be meaningful—a potential "gap" in what occurs in the classroom.

Lastly, related to the teacher rating resulting from using the framework, an overall challenge as seen by Participant 1 was helping teachers understand the difference between "proficient" and "distinguished" ratings. While one lesson observation or walk-through visit might yield a "distinguished" rating, Participant 1 felt data from various areas (e.g., observation data, walk-through data, and teacher submitted evidence) needed to align in order the receive a consistent rating overall.

Teacher Professional Growth

Follow-up interview questions garnered additional challenges and benefits to teacher professional growth as experienced by administrators who used the new evaluation system. During the interview phase, five administrators were asked if the system impacted teachers' professional growth. Four of the five participants felt that it had indeed impacted growth, both in positive and negative ways.

Participant 1 believed the new evaluation system had provided direction for teachers to know which area of personal professional development would be of benefit and found value in the teacher and principal discussing specific improvement areas during the pre- and post-conferences. As part of this evaluator-teacher discussion, Participant 2 found the specificity of the rubric allowed teachers

to have a clear awareness of their strengths and weaknesses and further noted that newer teachers were "embracing the feedback from the evaluation and working toward improvement in specific areas." Participant 3 identified a specific goal-setting process used in their district and felt this provided focus for teachers to improve their weaknesses in a step-by-step manner when reflecting on the teacher evaluation rubric. This move from one-size-fits-all professional development to a more individualized plan was cited as a benefit among all four participants.

In addition to personal goal setting, an emergence of a growth mindset was observed by Participant 3. This administrator noticed that some teachers who had not taken professional growth opportunities seriously in the past were more motivated by the new evaluation system: "More of the teachers who had not done it previously are looking at opportunities to improve their own knowledge about their profession, and in particular the area in which they teach." Participant 3 also noted more involvement in the profession from teachers who wanted to grow professionally (i.e., membership in state or national professional organizations).

Even with the benefits of the new evaluation system, there were some concerns related to professional growth. Participant 1 felt the system could be a hindrance. If teachers felt compelled to choose one specific area of the Framework as their professional growth goal, they might tend to neglect other areas of need. For example, if improving math scores was a need, the teacher might want to focus on math instruction first and apply the Framework components later. Participant 1 further explained that in this situation, "It seems to make more sense to focus on math and what we need to do, and then evaluate with the Framework after." In other words, Participant 1 viewed that some teachers felt constrained that "everything had to go through the lens of the framework."

Despite individual teacher professional growth goals being set and met, Participant 2 summarized that the culture of teaching is not yet ready to tailor professional development toward individual teacher needs. A struggle was observed between treating everyone the same vs. addressing individual needs. While the Framework has the potential to identify specific areas of growth for individuals, there was a dilemma whether to treat everyone the same (as a union mindset) or meet individual needs of each professional. Participant 2 pointed out that "fair is not always equal" and that some teachers were resistant to an individualized approach "even though our teachers are (as a result of this process) emerging at different levels, just like our kids."

Along similar lines of group-thought and union-governed boundaries, two participants struggled with the point at which a district needs to assign a specific professional development topic to a teacher who needs improvement vs. having a teacher self-select professional development topics that would be of benefit. Additionally, the question was raised as to how funding would be secured if an administrator required a teacher to attend a workshop or conference. With many districts facing financial struggles, a teacher might really want to attend a workshop that would be beneficial to their professional development but might miss out on the opportunity if funds were not available.

Contrary to the other four participants in the interview phase of the study, Participant 4 felt the new teacher evaluation system had not impacted teachers' professional growth, summarizing that professional growth was a result of professional development, not necessarily a result of the teacher

evaluation system. This participant viewed the evaluation system as a process of accountability from the Commonwealth, not a way to help teachers grow.

Three participants thought that the evaluation process was cumbersome and very time-consuming for everyone involved, requiring time for paperwork, observations, face-to-face meetings, self-reflection, evidence gathering, and goal setting. Participant 5 further clarified that some teachers viewed the expanded tasks as "busywork," requiring more time away from their craft. Participant 2 stated that in a way "we are fixing the plane while flying it," and that this method comes with its own set of difficulties. Additionally, setting priorities for covering 22 components within the Framework was difficult to determine and could become even more complex with changes in curricula. While the majority felt that it had impacted teacher professional growth, Participant 4 felt it had not, and that it was a system in which "common sense did not prevail." Participant 4 summarized larger concerns with changes and challenges, posing the thought:

> We are doing all of this to move a score, but are kids really better for it? When they walk the stage and go into college, workforce, or military, what becomes of them? Are they really ready? And they can be great test-takers, but what have they really learned? Do they have the intangible soft skills? So I think there are some challenges in terms of time and how we provide services to students.

Administrators shared a variety of perspectives related to the impact of the new teacher evaluation system on teachers' professional growth. Overall, their views confirmed that individual growth was more positively impacted than district-wide professional goals and programs.

Administrator Feedback

Follow-up interview questions asked administrators about the role of establishing trusting relationships with teachers and their preparation for providing feedback to teachers. Five administrators responded to these interview questions. All five stated that establishing trusting relationships with teachers plays a primary role in their ability to provide useful feedback. Participant 1 described the importance of establishing a trusting relationship by asking, "How do you get teachers to be open and honest about what they are not good at when it is tied to evaluation?" Participant 2 explained, "There's no way to have a meaningful conversation about all of this if we have defenses up or have biases, or the process isn't done fairly." Participant 2 summarized that when a lack of trust exists, teachers are more likely to simply go through the motions. However, when teachers believe they are being supported, they are more receptive to feedback. Creating a culture where administrators let teachers know they are there to help them reflect and grow, vs. a system of being "out to get" teachers was identified as being important to the feedback process. Participant 4 stated, "The more trust you have, the more you make gains." Similarly, Participant 5 concluded,

> The process is supposed to be non-threatening, but if you don't have a trusting relationship with your faculty and staff, the perception becomes reality. If they don't feel comfortable

sharing or if they don't feel comfortable taking constructive feedback, it can undermine the whole evaluation process and completely change how teachers perceive administrators, how they perceive one another, and it can really do some damage to the climate.

Establishing a trusting relationship was considered to be crucial, and administrators also detailed how they prepared for and provided feedback as part of the process. The participants all described a process that involved meeting for the pre-conference where the planning and preparation were discussed. The pre-conference was also viewed as an appropriate time to suggest any changes to the lesson that might be beneficial for the observation. The observation involved fact and evidence gathering that was then written up and sent to the teacher within 24 hours for further review and additions. Participant 3 also mentioned creating a trusting relationship with teachers informally about concerns before additional evaluations in order to give them a chance to improve in the specified area. Reminding teachers of these additional expectations in a less formal way helped them feel supported instead of threatened.

Two administrators specifically mentioned the value of the pre-conference, observation, and post-conference process. Two-way conversations allow for questions and discussion, which in turn provide many opportunities for feedback.

Four participants reported that a balance of positive and negative feedback was included in the post-conference. All the administrators cited the Framework for Teaching components as a guide for their feedback content. The majority went through the rubric, citing strengths and weaknesses, followed by discussion on where the teacher and evaluator disagreed with the evidence that was included. It was the areas of disagreement, rather than areas of agreement, that became the focus of the discussion. Three of the administrators noted that teachers are often more critical of themselves than the administrators are of the teachers. Participant 2 described the evaluative process as a series of questions including, "What are my tough conversations going to be, where are my red flags, vs. where did they do well, in order to create a balance?"

Overall, building a trusting relationship was seen as essential to the teacher evaluation process. Similarly, two-way conversations created open lines of communication for questions, discussion, and feedback. Lastly, all administrators agreed that the pre- conference/observation/post-conference process was very beneficial. Although it was very time-consuming when done well, it yielded successful results for all parties involved in the system.

The presented data confirmed that the majority of participants felt the new standards-based teacher evaluation had an impact on teachers' instructional strategies, both in the classroom and for future planning. It also yielded an increase in teachers' use of specific instructional strategies.

Additionally, administrators noted the impact on teacher professional growth. While participants were divided as to whether professional development options motivated teachers, the majority saw the new system as helping design professional development activities, assisting with establishing goals for professional growth, allowing for differentiated professional development at various career stages, and helping teachers grow professionally.

Finally, administrators believed they were able to provide useful feedback as part of the new process as well as provide information regarding planning and instruction. Their purposeful, specific, and timely feedback contained a balance of encouraging positive comments and suggestions for improvements and growth. Additionally, the administrators viewed establishing trust and two-way, meaningful conversations as essential to the success of the process. While administrators did not feel that they had time to collaborate about inter-rater and intra-rater reliability with administrative colleagues, they did feel comfortable in providing feedback both inside and outside trained content areas to the teachers they evaluated.

Discussion of Data Analysis

The research illuminated the use of Pennsylvania's new standards-based teacher evaluation system by school administrators. The study examined perceptions of 22 administrators regarding the new standards-based evaluation system using Danielson's Framework for Teaching and its impact on teachers' instructional strategies, teachers' professional growth, and administrators' ability to provide useful feedback. Overall, the administrators indicated the evaluation system impacted the three focus areas in a positive way.

Instructional Practices

Administrators had seen a change in the use of instructional practices in the classroom, there was an increase in the use of specific instructional practices, and the rubric provided guidelines that helped teachers plan future lessons. Sixty-four percent of administrators reported seeing an increase in specific instructional practices. These observed practices included suitable and engaging instructional materials and resources, coherent lesson structure and appropriate pacing, engaging activities and assignments, and productive and appropriate grouping of students. While these strategies were evident, there was room for growth in high levels of student participation, engaging discussion techniques, and high-quality questions.

A majority (73%) of administrators felt the Framework for Teaching rubric helped teachers develop future lessons, claiming the new system made teachers more aware of expectations for student learning. Eighty-seven percent of administrators felt the standards-based teacher evaluation process had an impact on teacher instructional practices, and more specifically that the Framework for Teaching added clarity to areas of planning, instruction, and assessment and helped further align intended outcomes with instructional practices and assessment. Despite the success of teachers using the framework, the newness of the evaluation tool with its 22 components created a dilemma concerning on which components to focus first. One administrator was drawn to areas that would have the greatest impact on student instruction. Still, the inclusion of all components was a lot of information for some to prioritize and implement.

While the Framework for Teaching tool was seen as helpful by many, 36% of administrators (8 of 22) had not seen a change in the use of instructional practices as a result of the new evaluation system. Similarly, some interview participants were concerned that it might be too soon to conclude whether the new system truly had an impact on instructional practices, and if it had, whether those changes were beneficial to purposeful lessons and student learning. Changes

in instructional practices did not necessarily translate to improved instructional practices. One concern was whether a lesson was truly a meaningful learning experience for students in spite of a teacher fulfilling all components in the evaluation rubric. Another administrator questioned whether everything should be viewed through the lens of the Framework, or whether teachers should first plan a lesson based on content needs and later apply the Framework. As a result of these perspectives, the researcher suggests that the Framework could be a hindrance by limiting content needs in exchange for Framework components, or making some teachers feel too locked into the Framework and potentially having a detrimental impact on their art of teaching.

Another administrator experienced dissonance among teachers in tested areas (e.g., Keystone math courses). Some of these teachers wanted to avoid teaching a class where student test scores contributed to their final teacher rating or be exempt from teaching these classes three years in a row in order to salvage the value-added three-year average of student scores impacting their teacher rating. Danielson (2007) intended the Framework for Teaching to be used for evaluation and growth; she did not intend originally for the Framework to be connected to value-added scores as part of a system that scored and ranked teachers. While many successful teacher evaluation systems have a dual mission of evaluation and growth, the addition of value-added measures created dissonance between math teachers of tested vs. non-tested courses. These findings leave the researcher with concerns of whether fostering a collaborative teaching environment is something that can be maintained if the system itself is dividing tested and non-tested areas, with increased stress levels about final evaluation scores that include extrinsic factors such as student test scores.

Teacher Professional Growth

In the area of professional development, 16 of the 22 participating administrators agreed that they had used the evaluation system to help design professional development activities for teachers in their districts. The remaining six administrators had not. A third of the respondents described their using the new evaluation system to design professional development that covered training teachers to understand or use the evaluation tool, analyzing student achievement data using the new system, addressing staff instructional needs as a result of evaluation findings, and modeling instructional strategies. Overall, the majority (73%) of administrators did feel the new system helped teachers grow professionally.

While the majority of responses showed that the new evaluation system did impact professional development planning, about one third of the participants believed it did not. This view was due to various pre-existing factors including multiple-year professional development initiatives already underway to address district-wide goals and responsibilities or programs in place to fulfill grant requirements already in progress. One might view this difference as a gap between federally-mandated initiatives and district-wide initiatives. Should districts be able to align their professional development areas with what they deem necessary for their students and staff? Should federal policy dictate a one-size-fits-all professional development mandate that might not best meet the needs of every district?

While the majority of participants agreed that the new system helped teachers grow professionally, the overall tenor was that the Commonwealth initiatives guided rather than dictated the planning of professional development activities. District administrators still valued the ability to customize professional learning experiences at some level to meet their district or building needs. Similarly, those who did not believe the new evaluation system helped teachers grow professionally chose specific local initiatives or grant requirements over federal mandates, citing the overall benefit and priority of meeting their district needs. The researcher acknowledges the gap created between federal mandates and district-wide initiatives and values local control over federal involvement in professional development. Often federal mandates are "cookie-cutter" in nature and are not sensitive to the needs of local districts that better understand the climate, culture, and history of their school community. Similarly, federal mandates can change frequently and/or be politically motivated—and long-term improvement of schools is not necessarily guaranteed in such scenarios.

The results also highlighted the fact that the Framework for Teaching guided teachers to individually select activities to address specific needs using the 22 components of the evaluation tool, with 64% agreeing that the new system helped teachers establish goals for professional growth. More specifically, professional development for teachers had become more individualized since the new evaluation system. This customization supported the finding that 59% of administrators felt professional development options in their district were differentiated to meet the needs of teachers at various career stages. When asked whether as a result of the new evaluation system professional development options were motivating teachers to improve practice or not, administrators were divided equally. One interview participant believed the framework had reignited the evaluation process for some veteran teachers who benefited from the specificity of the rubric in guiding their selection of individual professional goals.

Overall, the results of the study favored the positive impact the new evaluation system had on individuals' professional growth over district-wide professional development.

Administrator Feedback

Questions from the survey highlighted the impact of the new evaluation system on administrator feedback, content of the feedback, communication with teachers, and opportunities for administrators to meet and discuss the reliability of their evaluation findings. The interview questions addressed establishing trusting relationships with teachers, as well as the administrators' preparation for providing feedback to teachers as part of the evaluation process.

Ninety-six percent of administrators agreed that the new evaluation system process allowed them to provide useful feedback about teachers' planning and instruction. Administrators valued pre- and post-conference meetings and were able to provide more feedback regarding preparation and planning using the Framework for Teaching rubric. The rubric guided many and added a layer of accountability for both teachers and evaluators. As far as the nature of the feedback, 90% stated that their evaluations contained a balance of encouraging positive comments and suggestions for improvement and growth. Similarly, 86% confirmed they were able to provide purposeful,

specific, and timely feedback as part of the process. A few administrators noted that their feedback was of better quality, with expectations more clearly defined and two-way conversations taking place. Overall, 86% of administrators felt comfortable providing feedback to teachers in a variety of content areas, both in their trained content area and in subject areas outside their area of specialization.

Although administrators valued the two-way conversations that were part of the feedback process, a large group (62%) felt they did not have ample time to engage in these conversations. In addition to time with teachers, the majority of administrators (76%) reported that they did not have time to meet with administrative colleagues to discuss the reliability of evaluation results. Although administrators valued the process of the new evaluation system, time was a factor at all stages. The participants felt the pre-observation/observation/post-observation process was time-consuming, yet effective when done well.

All the interview participants felt that establishing a trusting relationship between the administrator and teacher was crucial. This trust resulted in more meaningful conversations, receptiveness to feedback by the teachers, and fewer defenses and biases for both administrators and teachers. Creating trusting relationships contributed to a non-threatening environment in which growth was supported and encouraged.

In addition to establishing a trusting culture, those actively involved in the system need to trust the system itself. One interview participant took issue with the message sent to teachers from intermediate unit trainings and the PDE that "teachers are to live in proficient and visit distinguished." This participant believed that such rhetoric was disheartening for teachers to hear and could have a negative impact on teacher morale. The impact on morale was also evident in the 50% split of administrators when asked whether as a result of the new evaluation system, professional development options in their district were motivating teachers. The equal divide in the area of motivation was not surprising to the researcher. If teachers were receiving a message that a "distinguished" rating was difficult to obtain, then they might be less motivated to improve or be vested in district professional development options.

Two-way conversations were part of the final stage of the teacher evaluation process. These post-observation discussions included feedback from the administrator. In preparing for these meetings, all the administrators were systematic in reviewing the observation data, collecting evidence, and comparing it to the Framework for Teaching components. While every administrator during the interview phase described how teachers were using the framework to guide their instruction and reflective practice, it was just as interesting to hear that all the administrators also used the Framework to guide their preparation for the post-conference. They planned for conversations that contained feedback focusing on strengths and weaknesses. Additionally, their preparation process involved anticipating discussion points where the administrator and teacher might disagree.

Limitations of the Study

Limitations emerged during the study. Sample size was one of them. While the superintendents from each district granted permission for the district to participate in the study, completing the

survey was voluntary for each administrator in each district. There were approximately 50 potential participants from the seven districts. Twenty-two administrators completed the survey, of whom five took part in the interview phase. In addition, all seven districts were not represented in the interview phase of the study. The voluntary nature of the study combined with limited responses impacted the generalizability of the results. While administrator perceptions were gathered from seven districts, they may not represent the perceptions of administrators from all 500 districts in the Commonwealth.

All the participating districts used Danielson's Framework for Teaching, but one of the districts had been using the Framework prior to the implementation of Pennsylvania's new standards-based teacher evaluation system. Administrator familiarity with the Framework may have shaped perspectives differently depending on experience in using the tool. Similarly, not all administrators had the same number of years of experience working in their current position or hours of training with the new teacher system, which may have had an impact on their experiences. One participant chose to give up anonymity and emailed the researcher, stating that some of the questions were difficult to answer due to recently accepting the position in administration. This participant did not answer all the questions. Therefore, limited experience as an administrator was also a limitation in this case.

Recommendations for Further Research

This study focused on administrators' perceptions of the Pennsylvania Teacher Effectiveness System, a standards-based teacher evaluation program implemented in 2012, and prompted recommendations for further research.

First, with the newness of the evaluation system, it would be beneficial to continue the research as a longitudinal study to gather perceptions of administrators after additional years of working with the system. Second, it would be beneficial to compare the results of the study with a study using participants from larger suburban or urban school districts in the Commonwealth to see if they yielded similar results.

Third, while this study focused on administrator perceptions, future research on teacher perceptions would be valuable to see if both groups view the teacher evaluation similarly. While previous research (Edwards, 2014; Hoffritz, 2014) had studied both areas, the topic of feedback was not part of previous research. Therefore, researching teacher perceptions of the feedback they receive during the evaluation process may yield results that would benefit this area of research.

Fourth, related to the area of professional development, it would be interesting to evaluate the gap created by federal policy initiatives over the past decade and how they have limited district autonomy in addressing and implementing local initiatives for school improvement.

Fifth, the unexpected dissonance created within and among departments as a result of value-added measures reported in this study should be studied to determine its impact on creating and maintaining a collaborative school culture. While the researcher focused mainly on the observation

part of the evaluation system, findings from this study showed that the value-added areas are not easily separated in the minds of educators and evaluators.

Conclusion

This study revealed that most of the participating administrators felt the new standards-based evaluation system had a positive impact on instructional strategies. They also observed an increase in the use of specific instructional strategies. Teachers used the Framework for Teaching to guide planning and instruction. Feedback from the process helped them in planning future lessons and assessments.

Despite the positive effects on instructional strategies, the new evaluation system also uncovered some concerns related to instruction. Some administrators were hesitant in evaluating the system and questioned whether it was too early to measure its effectiveness, and whether it truly prepared students for experiences after graduation. Although this study did not specifically focus on value-added measures, one administrator found that increased pressures from the inclusion of student data in the final teacher rating for tested subject areas created dissonance among teachers in those areas. Lastly, one administrator questioned whether including all 22 components of the Framework for Teaching tool in a lesson necessarily ensured a meaningful learning experience for the students.

Regarding professional growth, administrators observed teachers using the framework to set professionals goals. The rubric provided specific areas for self-selection of growth areas that could address teachers' needs at various stages of their career. When it came to building-wide or district-wide professional development, a majority of administrators confirmed that the new evaluation system had an impact on the planning of professional development activities. One third of the administrators stated that the new system had no impact on their professional development planning, citing pre-existing professional development plans or other district-identified initiatives taking priority. Based on these findings, the researcher agrees with the need for local control in the area of professional development planning. While the evaluation tool was valuable and provided guidance for individual goal setting, federal mandates did not necessarily align with the mission and goals of the districts. The researcher believes strategic planning and other needs identified by local school communities are better focus areas for district-wide professional development over ever-changing federal mandates.

Finally, administrators were asked about their ability to provide feedback as part of the new teacher evaluation system. An overwhelming number of participants agreed that the new evaluation system allowed them to give purposeful, specific, and timely feedback. They were also comfortable in providing feedback to teachers both in their trained content area and outside of their specialty. This was in part due to the clarity provided by the Framework for Teaching tool. Administrators valued the two-way conversations they were able to have with teachers during the pre- and post-conferences and cited developing a trusting relationship with teachers as essential to the process. Creating and maintaining a climate of trust allowed for authentic, open, and unbiased conversations to take place, and aided in teachers being more receptive to the feedback. The researcher agrees with the findings and feels continued two-way conversation is essential in building trusting and

authentic relationships. Given the cited dissonance in this study between tested and non-tested subject areas, cultivating and maintaining a collaborative, collegial, and supportive environment is imperative in avoiding potential divisions among staff.

Overall, participants expressed concern with the limited time they had to meet with other administrators about inter- and intra-rater reliability issues. They also felt that although they valued two-way conversations with teachers, they did not have as much time as they would like to conduct them. Creating more time for professional conversations to take place is needed. Just as teachers use feedback for future planning, making time for administrators to discuss their evaluation findings and how they will move forward in supporting, training, or modeling certain concepts to their staff is essential.

Research has shown that effective teacher evaluation systems fulfill a dual role of evaluating teachers while providing opportunities for professional growth. The new Pennsylvania standards-based teacher evaluation system, the Teacher Effectiveness Program, addresses both areas. A standards-based evaluation system provides an evidence-based, objective, and engaging opportunity for administrators and teachers to work together in improving teacher best practices. The findings of this study support the benefits of such a system, including the use of specific and effective instructional practices; opportunities for teacher reflective practice and professional growth; and purposeful, specific, and timely feedback as part of the evaluation process. Continued review and revision of teacher evaluation programs will help ensure teacher effectiveness that leads to student learning and success. This process will also allow for teacher growth through reflection, professional development, and using feedback to improve instructional practices for students.

References

Aument, R. (2011). *A new teacher evaluation system for Pennsylvania*. Retrieved from Commonwealth Foundation website: http://www.commonwealthfoundation.org/research/detail/a-new-teacher-evaluation-system-for-pennsylvania

Canelake, C. (2012). *Implementing a standards-based teacher evaluation system: Learning experiences for administrators in an urban school district* (Unpublished doctoral dissertation). Arizona State University, Tempe. Retrieved from http://hdl.handle.net/2286/R.A.93425

Culbertson, J. (2012). Putting the value in teacher evaluation. *Phi Delta Kappan*, *94*(3), 14-18.

Danielson, C. (2007). *Enhancing professional practice: A framework for teaching* (2nd ed.). Alexandria, VA: ASCD.

Donaldson, M. L. (2010). No more valentines. *Educational Leadership*, *67*(8), 54-58. Retrieved from http://www.ascd.org/publications/educational-leadership/may10/vol67/num08/No-More-Valentines.aspx

Edwards, D. J. (2014). *Teacher and administrator perceptions of Danielson's Framework for Teaching supervisory process* (Unpublished doctoral dissertation). Immaculata University, Malvern, PA. Retrieved from http://library.immaculata.edu/Dissertation/digital/Doc495EdwardsD2014.pdf

Goe, L. (2013). Can teacher evaluation improve teaching? *Principal Leadership*, *13*(7), 24-29.

Graziano, A. M., & Raulin, M. L. (2010). *Research methods: A process of inquiry* (7th ed.). Boston, MA: Pearson Education.

Hoffritz, M. E. (2014). *Teacher perceptions of Pennsylvania's teacher effectiveness model* (Unpublished doctoral dissertation). Immaculata University, Malvern, PA. Retrieved from http://library.immaculata.edu/Dissertation/digital/Doc498HoffritzM2014.pdf

Marshall, C., & Rossman, G. B. (2011). *Designing qualitative research* (5th ed.). Thousand Oaks, CA: Sage.

Marzano, R. J. (2003). *What works in schools: Translating research into action*. Alexandria, VA: ASCD.

No Child Left Behind Act of 2001, 20 U.S.C. § 6319 (2008). Retrieved from http://www2.ed.gov/nclb/landing.jhtml

Pennsylvania Department of Education. (2013). *Educator effectiveness project*. Retrieved from http://www.education.pa.gov/teachers%20-%20administrators/educator%20effectiveness/pages/default.aspx

Pennsylvania Department of Education. (2015). *Measuring educator effectiveness* [Graph illustration]. Retrieved from http://www.education.pa.gov/teachers%20-%20administrators/educator%20effectiveness/pages/default.aspx

Popham, W. J. (2013a). *Evaluating America's teachers: Mission possible?* Thousand Oaks, CA: Corwin.

Popham, W. J. (2013b). On serving two masters: Formative and summative teacher evaluation. *Principal Leadership*, *13*(7), 18-22.

Race to the Top Act of 2011, H.R. 1532, 112th Cong. (2011). Retrieved from https://www.congress.gov/bill/112th-congress/house-bill/1532

Sartain, L., Stoelinga, S. R., & Brown, E. R. (2011). *Rethinking teacher evaluation in Chicago: Lessons learned from classroom observations, principal-teacher conferences, and district implementation*. Retrieved from UChicago School Research website: https://consortium.uchicago.edu/publications/rethinking-teacher-evaluation-chicago-lessons-learned-classroom-observations-principal

State Collaborative on Reforming Education. (2012). *Supporting effective teaching in Tennessee: Listening and gathering feedback on Tennessee's teacher evaluations*. Nashville, TN: Author.

Stumbo, C., & McWalters, P. (2011). Measuring effectiveness: What will it take? *Educational Leadership*, *68*(4), 10-15. Retrieved from http://www.ascd.org/publications/educational-leadership/dec10/vol68/num04/Measuring-Effectiveness@-What-Will-It-Take%C2%A2.aspx

Taylor, E. S., & Tyler, J. H. (2011). *The effect of evaluation on performance: Evidence from longitudinal student achievement data of mid-career teachers* (NBER Working Paper No. 16877). Retrieved from National Bureau of Economic Research website: http://www.nber.org/papers/w16877

U.S. Department of Education. (2012). *ESEA flexibility*. Retrieved from www.ed.gov/esea/flexibility

Weisberg, D., Sexton, S., Mulhern, J., & Keeling, D. (2009). *The widget effect: Our national failure to acknowledge and act on differences in teacher effectiveness*. Retrieved from The New Teacher Project website: http://tntp.org/publications/view/the-widget-effect-failure-to-act-on-differences-in-teacher-effectiveness

About the Author

Jenny L. Neff teaches instrumental music in the Lower Merion School District. She holds a Bachelor and Master of Music Education degree from Michigan State University and has taught for 24 years in Connecticut and Pennsylvania. She recently earned her Doctorate in Educational Leadership from Immaculata University. She can be reached at stognerneff@hotmail.com.

Practitioner's Page:
Challenging Common Perceptions: Strategies for Moving Beyond Heroic Leadership

Matthew Meakin
Littlestown Area School District

The concept of role of school leadership changes constantly. Early school leaders were the moral compass of the community they served (Beck & Murphy, 1994). Progressive era leaders were problem solvers who took a scientific approach to educational and societal issues. (Kafka, 2009). After World War II, the American public cried out for democratic leadership; school leaders who would ensure that alien threats and subversive (non-liberal democratic) thoughts were extinguished as citizenship and participation in the democracy were forwarded and pushed through the classroom. The Civil Rights era saw a massive increase in the amount of federal involvement. School leaders had to draw on their bureaucratic skills to ensure that the management and financial benefits of new federal mandates were realized through compliance (Goodwin, Cunningham, & Eagle, 2005). Now the school leader has become a seeker of data that is used to inform both internal and external forces regarding student progress on defined academic standards.

No matter the defining expectation of the era, school leadership has consistently been viewed as a heroic pursuit of an inspirational and motivational character (Strike, 2007). Teachers and school communities desire a strong individual leader as a symbol of stable and committed leadership. They yearn for a person who understands local, state, and federal agendas in a way that provides a stable hand and a sense of reason. They believe that administrative stability will drive schools forward (Strike, 2007). They believe turnover in leadership positions is detrimental to incremental performance growth of schools and systems. School districts search for great leaders and bemoan their luck when one leaves or retires. A great leader is essential to educational success.

I am uneasy with the aforementioned concepts of great leadership. I do believe that schools and systems need accomplished leadership, but its embodiment as an inspiring, exceptional individual in an administrative position is becoming less attractive to me. In my opinion an educational leader can produce significant short- or medium-term performance gains in a school or school district through force of individual will, character, and ability. But you cannot truly know if you have a great leader until that person has left. Only great leaders have the ability to produce sustainable cultural changes that persist and remain effective for many years after they have gone. That is the type of leadership we need: leadership that has its genesis in the individual but is realized by the whole.

We need to reconceptualize school leadership as a partnership between a generally shorter-term, non-tenured administrator and a longer-term teaching staff. The administrator's primary concern should be developing and promoting teacher leadership to promulgate a sustainable system of growth, achievement, and human flourishing. Teacher leadership means more than being a part of a professional learning community, more than being a member of a principal's leadership team, more than being a formal (department head, union representative, etc.) leader. Teacher leadership means action. It means making significant contributions that will continue to press a progress agenda forward without being asked to do so or monitored by an administrator. How can an administrator foster this culture?

Hire Leaders First and Teachers Second

The teacher interview process should include questions and scenarios that allow a teacher to express who he or she is: insights, desires, passions, beliefs, and character. The hiring committee members should ask themselves how they see this teacher influencing and leading others. Pedagogy and content knowledge should be seen as the bare minimum. They are almost taken for granted. If you can see the fire and feel the desire, then you have leadership qualities to develop.

Reward the Excellent

In public school, increasing salaries of the best teachers is usually not possible, and not everyone aspires to be an administrator. A principal can, however, reward excellence. One positive way is to acknowledge, support, and encourage excellence. You have to know what your teachers are good at and recognize their skills. This process does not have to be elaborate. People just want to be noticed. Provide them the encouragement we all need.

Another effective way to recognize excellence is to make sure excellent teachers know that you will not accept poor performance. Excellent teachers appreciate seeing you work with weaker teachers. The result is always positive. The weaker teacher gets better, or the weaker teacher leaves, and you can hire a potential leader. The tangible aspects of teaching are clearly defined in teaching effectiveness frameworks but really boil down to a constant search for knowledge of curriculum, a relentless learning attitude towards instructional strategies, and a standards-based approach to assessment methodology. If a teacher can maintain high levels of competency in these areas and can inspire peers to the same levels, then that teacher can become part of the leadership process.

Delegate, Don't Abdicate

Search for opportunities to include teachers in leadership activities by assigning a variety of teachers to lead committees or processes. Don't always select the same few superstars. An administrator needs to search in unlikely places for unlikely candidates. Even the most unlikely leaders can emerge when given the correct task, support, and resources. But don't abdicate. Always be ready to accept the blame if something does not work out, and always assign credit elsewhere if it meets with success. Inspiring leadership in others does not exclude the administrator from ultimate responsibility for success.

Variety Is Strength

People have different attributes. This fact is self-evident, yet it is amazing how many times this is forgotten during the hiring process. Look to hire people who have the basic set of skills the school needs, but be aware of opportunities to hire the person with the different style, background, outlook, and ideas. Too many people thinking and acting the same way will lead to comfort and stagnation. The same concept applies when forming working committees or study groups. Select a variety of teachers to serve.

Authorize Criticism

The administrator is the primary model of how to conduct positive criticism in a school. If staff members see the administrator being constructively critical, they will be encouraged to be self-reflective of their pedagogy. This practice will lead to isolated classroom-level improvement. If the administrator can inspire teachers to question and challenge each other, then a culture of peer-supported and sustainable change will emerge. This practice is perhaps the most difficult aspect of leadership to achieve. It is, however, certainly the most powerful. Only by challenging each other can a teaching staff produce effective change.

The Time Is Now

Don't wait for individuals to show leadership qualities—demand it. Place teachers in roles early in their tenure where they can make contributions to the culture of the school. Responsibility breeds ownership, and these feelings will help strong cultures endure even after administrator change. I recently assigned a newer teacher to attend a workshop. The agenda was full of items that could be used as we embarked on a major departmental overall of curriculum, scope, and sequence. She is the junior member of the department. After she received my invitation, she came and asked, "Why me?" I asked her, "Why not?" The message was clear: Your insights and abilities are as important and valuable as everyone else's. Step up. It's time to lead!

Individual administrative leaders who rely on personal ability, charisma, and inspirational action can produce short-term success, but only when principals partner with empowered groups of teacher-leaders can a sustainable culture of progress and success be realized. It is the school leader's primary responsibility to find, nurture, and develop leadership abilities among his or her teaching staff.

References

Beck, L. G., & Murphy, J. (1994). *Ethics in educational leadership programs: An expanding role.* Thousand Oaks, CA: Corwin Press.

Goodwin, R. H., Cunningham, M. L., & Eagle, T. (2005). The changing role of the secondary principal in the United States: An historical perspective. *Journal of Educational Administration and History*, *37*, 1-17. doi:10.1080/0022062042000336046

Kafka, J. (2009). The principalship in historical perspective. *Peabody Journal of Education*, *84*, 318-330. doi:10.1080/01619560902973506.

Strike, K. A. (2007). *Ethical leadership in schools: Creating community in an environment of accountability.* Thousand Oaks, CA: Corwin Press.

About the Author

Matthew Meakin is serving his sixth year as principal of Littlestown High School in Adams County, PA. He earned his doctorate from Widener University and was recently named a Distinguished Principal by the National Institute for School Leadership. He can be reached at meakinm@lasd.k12.pa.us.

An Invitation to Write for
Pennsylvania Educational Leadership

Kathleen Provinzano, Editor

Pennsylvania Educational Leadership (PEL) is the professional journal of the Pennsylvania Association for Supervision and Curriculum Development (PASCD).

A peer-reviewed journal, PEL is typically published two times per year. Manuscripts are accepted year round. Topics address the interests and concerns of Pennsylvania educators at all levels. We welcome a wide variety of manuscripts including (but not limited to) single study inquiries, qualitative and quantitative research, theoretical and conceptual pieces, historical analyses, literature reviews, action research, and first-person narratives. Manuscripts may address, among other topics, descriptions of curriculum improvement projects, discussions of trends and issues, views on instructional strategies, statements of theoretical positions, accounts of staff development and supervisory practices, reports of formal research projects and teacher inquiries. In addition, the journal welcomes practitioner's pages—non-research manuscripts written by practitioners for practitioners.

Call for Submissions / Submission Guidelines

Pennsylvania Educational Leadership (PEL) is a peer-reviewed journal that is published twice per year and accepts manuscripts year round. Topics address the interests and concerns of Pennsylvania educators at all levels. We welcome a wide variety of manuscripts including (but not limited to) single study inquiries, qualitative and quantitative research, theoretical and conceptual pieces, historical analyses, literature reviews, action research, and first-person narratives. Beginning spring 2014, the journal began including a Practitioner's Page highlighting the voices, thoughts, and opinions of educators in the field. Submissions for the Practitioners Page can take a variety of formats including (but not limited to) book reviews, policy reviews, and critical reflections on current educational issues and trends. Individuals choosing to submit to the Practitioners Page should follow the same submission guidelines as those submitting manuscripts with the exception of the Abstract. Authors must also indicate that the submission is intended for the Practitioners Page on the cover sheet.

Manuscripts should be emailed to Editor Kathleen Provinzano (Drexel University) at ktp37@drexel.edu. All submissions are initially reviewed by the editor. Submissions evaluated as appropriate for review are then sent to three readers for blind review. Manuscripts should follow the guidelines set forth by the American Psychological Association.

Before submitting a manuscript to PEL, please consider the following guidelines carefully:

Your manuscript should be submitted as a single Word document and include a cover sheet, abstract, body/text, tables, charts, and figures (if applicable), and references list. If possible, please include the Digital Object Identifiers (DOI) for all electronic sources. The manuscript should be typed in 12-point font, Times New Roman, with one-inch margins. The text should be double-spaced.

The cover sheet should include the title and author information, including contact information for the primary author, including mailing address, email address, and phone number. On this page, the author should indicate that the manuscript has not been submitted elsewhere for publication. If the manuscript involves the use of human subjects, the author should indicate whether Institutional Review Board approval has been granted unless deemed exempt.

The second page of the submitted manuscript is the abstract page. The abstract should be 150 words or fewer. The abstract should include the purpose of the manuscript and essential findings or discussion points.

The author(s) should remove any references that might be self-identifying from the body of the text to ensure blind review of the manuscript.

The references page will follow the body of the text and any tables, charts, or figures. Please be sure to check that all in-text citations match references in the list and that the list is properly formatted using [APA guidelines](). Please include the DOI for electronic sources.

The deadline for the spring 2017 edition is Friday, March 3, 2017. *Questions regarding a possible submission, submissions under review, or submissions requiring revision can be directed to Kathleen Provinzano (Editor) at ktp37@drexel.edu.*