

The Impact of Professional Learning Communities
on High School Graduation Rates

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The Impact of Professional Learning Communities
on High School Graduation Rates

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ABSTRACT

The purpose of the project was to investigate the use of PLCs in three high schools, its effectiveness on student achievement, and, therefore, the impact on graduation rates. Graduation rates were collected from OSPI for a three year period. Quantitative casual-comparative analysis was used to analyze data collected from OSPI. The results of the t-test showed a P-value of 0.016810206. This was less than the critical P level of 0.05. Significant correlations existed between uses of PLCs and increases in graduation rates. The correlation of increases in graduation rates and uses of PLC did not eliminate other variables, which might have contributed to these increases.

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CHAPTER 1

Introduction

Background for the Project

In 2002, President George Bush signed into law the No Child Left Behind Act. The act required federal and state governments to measure a student's academic progress and improve student achievement. This became the focus of many school administrators. School administrators felt the pressure to increase student achievement, thereby increasing graduation rates. Many districts sent teachers to professional development seminars or to schools that had achieved high standardized test scores. School administrators hoped that they could find a magic bullet that would help them meet the requirements of No Child Left Behind (NCLB). One of the programs that appeared to meet these requirements was the implementation of Professional Learning Communities (PLC).

PLCs had been in use in the educational system since the 1980s. The concept of PLCs was most closely associated with Richard Dufour. Dufour was principal of Adlai Stevenson High School in Lincolnshire, Illinois, from 1983 to 1991. During his tenure as principal at Stevenson High School, the school became recognized by the United States Department of Education (USDE) as one of three Blue Ribbon awarded schools. The successes of this school were attributed to the implementation of PLCs.

Teachers throughout the school worked in PLCs to develop common assessments, lessons, and curriculum. PLCs needed strong leadership from the administrator to ensure PLCs stayed focused and had adequate support in time and resources. When PLCs were implemented in a school the way that Dufour intended then student academic achievement should increase. This increase in students' achievement should result in an increase in graduation rates.

Statement of the Problem

Because NCLB mandated improved student achievement, school administrators needed a plan that met the needs of this mandate. When schools implemented a plan that included the use of PLCs to increase student academic achievement, the school's graduation rate should increase.

While there were many good reasons why improving the graduation rate was important, two reasons were significant. Those students who graduated would have a median income greater than those who did not graduate.

Median income of persons ages 18 through 67 who had not completed high school was roughly \$23,000 in 2008.¹ By comparison, the median income of persons ages 18 through 67 who completed their education with at least a high school credential, including a General Educational Development (GED) certificate, was approximately \$42,000. (Chapman, Laird, & KewalRamani, 2010, p. 1)

Increased graduation rates were also important for the continuation of our democratic society. Thomas Jefferson once said, "Above all things, I hope the education of the common people will be attended to; convinced that on their good senses we may rely with the most security for the preservation of a due degree of liberty" (Foley, 1900, p. 277). Jefferson saw the importance of education and the existence and continuation of our nation through education. If students were not graduating from high school, they could be putting our nation at risk.

Purpose of the Project

The purpose of the project was to investigate the use of PLCs in three high schools, its effectiveness on student achievement, and, therefore, the impact on graduation rates.

Delimitations

This study investigated three high schools located in the southeastern part of the State of Washington during the 2010-2011 school year. School 1 had 1612 students enrolled with 77% White, 15% Hispanic, and 7% Asian/Pacific Islander. Twenty-five percent qualified for the free and reduced-price meals. The school's faculty consisted of 80 teachers who had an average teaching experience of 14.9 years. Sixty-one percent of the faculty had at least a masters' degree.

School 2 had 1433 students enrolled with 52% White, 42% Hispanic, and 4% Asian/Pacific Islander. Sixty-one percent qualified for the free and reduced-price meals. The school's faculty consisted of 82 teachers who had an average

teaching experience of 13.6 years. Seventy-two percent of the faculty had at least a masters' degree.

School 3 had 1428 students enrolled with 71% White, 21% Hispanic, and 4% Asian/Pacific Islander. Thirty-four percent qualified for the free and reduced-price meals. The school's faculty consisted of 74 teachers who had an average teaching experience of 11.1 years. Seventy-percent of the faculty had at least a masters' degree (Office of Superintendent of Public Instruction Washington State Report Card, 2010-2011).

The data for graduation rates was obtained from the Office of Superintendent of Public Instruction (OSPI) for the 2007-2008 school year, the 2008-2009 school year, and the 2010-2011 school year. Graduation rates from 2009-2010 were not used because this was the first year that schools 1, 2, and 3 used PLCs.

Assumptions

The project was conducted under the assumption that PLCs at schools 1, 2, and 3 followed Dufour's three main ideas. These three main ideas were ensuring that students learn, having a culture of collaboration, and focusing on results. When a school used Dufour's version of PLCs, it was assumed that the faculty had been properly trained in the structure and function of a PLC. PLCs were used by all departments in the school. The researcher also assumed that improving

student achievement should result in higher graduation rates and improved graduation rates was an important goal.

Hypothesis

High schools that used the Dufour method of Professional Learning Communities had increased graduation rates.

Null Hypothesis

High schools that used the Dufour method of Professional Learning Communities did not have an increase in graduation rates.

Significance of the Project

If graduation rates increased in schools that used PLCs, then PLCs could be one of the reasons why they showed an increase. Schools that did not use PLCs should be encouraged to implement PLCs as a possible strategy for increasing graduation rates.

Procedure

The researcher collected data from OSPI for graduation rates from the 2007-2008 and 2008-2009 years. The researcher averaged together the graduation rates for 2007-2008 and 2008-2009 years as a baseline for pre-PLC graduation rates for schools 1, 2, and 3. Graduation rates for schools 1, 2, and 3 2010-2011 school year were analyzed to determine if there was an increase in graduation rates. A t-test was used to compare pre-PLC graduation rates of

schools 1, 2, and 3 to the 2010-2011 graduation rates. The data was displayed and conclusions were drawn.

Definitions

Professional Development. Professional development generally referred to ongoing learning opportunities available to teachers and other education personnel through their schools and districts.

Professional Learning Communities. Professional Learning Communities were defined by Dufour as containing three main ideas which were ensuring that students learn, having a culture of collaboration, and focusing on results.

Acronyms

NCLB. No Child Left Behind.

OSPI. Office of Superintendent of Public Instruction.

PLC. Professional Learning Communities.

USDE. United States Department of Education.

CHAPTER 2

Review of the Selected Literature

Introduction

School administrators felt the pressure to improve student achievement, and thereby increase graduation rates. Increased student achievement occurred when many factors were implemented throughout a school. This literature supported four main factors that contributed to student achievement. The first of these was leadership from the principal. The principal led in a manner that allowed the teachers to have ownership in day-to-day events while monitoring and guiding their progress. The second was professional development. Teachers and administrators needed to be continually learning about content and teaching strategies. The third was the implementation of PLCs. The PLCs needed to have a structured format in order for the group to function. This meant assigning an individual as a group leader. Finally a fourth factor was briefly reviewed; the value of a high school diploma. When these four factors were carefully implemented, student achievement had the potential to increase and graduation rates had the potential to increase as well.

Leadership from the Principal

The traditional view of a principal was working in the front office taking care of day-to-day events. The principals would spend their days working on discipline issues, making sure the busses arrived on time, and preparing for the

next staff meeting. This meant the teachers, usually working in isolation, were the ones focused on student achievement. Richard Dufour (2002) recognized the differences between traditional principal leadership and what he described as the learner leader. Under this definition, the principal worked side-by-side with teachers in their PLC group discussions and professional development. According to Mullen and Hutinger (2008) and Wilhelm (2010), the principal engaged PLC group discussions in curriculum, instruction, and assessment. They helped guide the groups but were not the group leaders. They guided the groups with questions and information that helped increase student learning. They worked with group leaders in developing their leadership skills. This was done by the principal asking question and giving suggestions during individual meetings with the group leaders. During professional development, the principal actively participated in the learning alongside the teachers (Mullen et al., 2008). Principals who sat in their offices while teachers worked on professional development were broadcasting its unimportance to others (Wilheim, 2010). The principal became the expert in the building and provided resources that helped the group find answers.

Principals also needed to provide time and resources for PLCs. Dufour (2002) suggested that teachers needed to meet on a weekly bases. The time needed for the PLC meeting times was set aside by the principal. Because time was usually set aside during the school day, principals ensured proper use of time

by visiting the PLCs. The principal also provided many resources for the PLCs. This included money for training, supplies, and access to current research in instructional methods and subject expertise (Mullen et al., 2008). With the principal providing these resources, the PLCs were able to focus on student learning more effectively by developing common assessments and lessons.

Professional Development

Much of the literature repeatedly emphasized the importance of professional development in increasing student achievement. The literature used numerous names such as study groups, workshop, and adult learning. "Teachers' knowledge of subject matter and pedagogical skills and strategies is vital if students are to learn well," (Bezzina, 2006, p. 164). The importance of professional development to student achievement made many principals use numerous strategies over a short period. The rush to use these numerous strategies caused teacher confusion and lack of understanding. Professional development became the flavor of the month, which made the new strategies difficult for teachers to implement in the classroom (Joyce, 2004). Dufour (2004) suggested the use of four questions when choosing professional development:

1. Does the professional development increase the staff's collective capacity to achieve the school's vision and goals?
2. Does the school's approach to staff development challenge staff members to act in new ways?

3. Does the school's approach to staff development focus on results rather than activities?
4. Does the school's approach to staff development demonstrate a sustained commitment to achieving important goals? (pp. 1-2)

NCLB Act (section 2101 of Title II) required that teachers increase student academic achievement through strategies such as improving teacher and principal quality, increasing the number of highly qualified teachers in the classroom, and increasing highly qualified principals and assistant principals in schools.

Another way that principals increased professional development was in developing partnerships with schools and universities. According to Mullen and Hutinger (2008), schools that formed partnerships with universities had access to a greater range of resources. The resources focused on student learning and teacher development. Schools that had these relationships had a greater chance of increasing student achievement.

Professional Learning Communities

Increasing student achievement also occurred when schools implemented PLCs. Dufour (2002) described how teachers who taught the same course worked together at developing common assessments. The common assessments allowed teachers to focus on what students needed to learn and set a bar for student performance. The PLCs used these assessments to drive the direction the PLCs would be working. Analyzing data from these common assessments helped

teachers identify struggling students in a timely manner (Dufour, 2002, 2007, Mullen et al., 2008). Teachers turned to the team for ideas, strategies, and materials to improve student learning for those struggling students (Bezzina, 2006, Dufour, 2002). The team identified areas of weakness, strengths, and areas of concern, and developed a plan of action to improve student learning for all students (Dufour, 2002, 2007). Other literature also stated that schools that used PLCs showed an increase in student learning when measured with standardized test or other assessments (Thompson, Gregg, & Niska, 2004).

Value of a High School Diploma

There were several major reasons why a high school diploma was of value. One such reason was economic. According to Levin, Belfield, Muennig, and Rouse (2007), the amount of income earned over the lifetime of an individual who graduated from high school was \$177,000-\$320,000 more than those who did not graduate. A second reason was enunciated by Thomas Jefferson who once said, "Above all things, I hope the education of the common people will be attended to; convinced that on their good senses we may rely with the most security for the preservation of a due degree of liberty" (Foley, 1900, p. 277). A country's liberty afforded its citizens the ability to earn a living and to build communities. The literature also stated that individuals who graduated paid more taxes over a lifetime. These taxes benefited the community by paying for schools, police, fire departments, and infrastructure.

Summary

The review of the literature indicated that student learning occurred when several factors were in place. The first was the leadership role of the principals. Principals needed to be working side-by-side with teachers in monitoring student learning. Principals were also present during PLC meetings and engaging with group members. When teachers needed resources, the principal provided them when available. Secondly were the uses of professional development. Professional developed was used to increase teacher knowledge in course content and teaching methods. Principals were also encouraged to develop partnerships with other schools and universities giving them a greater range of resources. Thirdly were the uses of PLCs. PLCs worked to develop lessons and common assessments while monitoring student learning. The PLCs would also make changes in the lesson to ensure that all students were learning. Lastly was the value of a high school diploma. People with a high school diploma earned more income over a lifetime than those who did not have a high school diploma. This increase in income benefited the community because more taxes were collected allowing the support of community services and infrastructure. The community also benefited from an educated society when difficult issues or events needed public input to come to a solution.

CHAPTER 3

Methodology and Treatment of Data

Introduction

Three high schools located in the southeast corner of the State of Washington were studied to determine potential reasons behind increases in graduation rates. The researcher used graduation rates from the OSPI school report card web site to determine if increases in graduation rates were partly due to the use of PLCs. The researcher assumed, when graduation rates increased for a school, the explanation for this increase was potentially due to the use of PLCs.

Methodology

The researcher used quantitative research to determine the validity of the hypothesis. According to Gay, Mills, and Airasian (2009), quantitative research was the collection of numerical data to explain, predict, describe, or control phenomena of interest. The literature also stated that quantitative research was the philosophical belief that we inhabit a stable world that we can measure and generalize about. Because graduation rates were a numerical measurement, quantitative research was the best method to be used. A t-test was used to determine the correlation between graduation rates and the use of PLCs over the past 3 years.

Participants

The researcher investigated three high schools located in the southeastern part of the State of Washington during the 2007-2008, 2008-2009, and 2010-2011 school years. The average population for all three high schools was 1491 students enrolled with 67% White, 26% Hispanic, and 5% Asian/Pacific Islander. The average for all three high schools, for the free and reduced price meals, was forty percent. Each high school used PLCs as a teaching practice starting in the 2008-2009 school year.

Instruments

Graduation rates for the three high schools were collected from the OSPI school report card. The graduation rates from OSPI were calculated the same for every district in the State of Washington.

Design

The research used a causal-comparative correlation research design. According to Gay and others (2009), causal-comparative research was sometimes treated as a type of descriptive research because it described conditions that already existed. Because graduation rates had already occurred, causal-comparative research was best suited for this research. "Causal-comparative research attempts to establish cause-effect relations among groups" (Gay, Mills, & Airasian, 2009, p.10). The research compared the effect in increased

graduation rates for the 2010-2011 compared to previous years and whether PLCs were the cause.

Procedures

The researcher collected graduation rates for the 2007-2008, 2008-2009, and 2010-2011 school years for each of the three high schools involved from the OSPI school report website. The graduation rates from the 2007-2008 and 2008-2009 school years were averaged together to give the researcher a baseline to compare the 2010-2011 school year graduation rates. A t-test was ran to determine the correlation between the averaged graduation rates and the 2010-2011 graduation rates.

Treatment of Data

A data table was used to present the graduation rates for each of the three high schools and their averages. A second data table was used to present the results of the t-test for each of the three high schools and whether a correlation existed between the use of PLCs and increases in graduation rates.

Summary

Three high schools in southeastern Washington State were identified that used PLCs over the past three years. Quantitative research was used to determine the validity of the hypothesis. Graduation rates for the three high schools were collected from the OSPI school report card. A causal-comparative correlation research design was used. Two data tables were developed to present data on

graduation rates and the results of the t-test. A t-test was run to determine the correlation between the uses of PLCs and increase in graduation rates over a two year period.

CHAPTER 4

Analysis of the Data

Introduction

Because NCLB mandated improved student achievement, school administrators needed a plan that met the needs of this mandate. PLCs were thought to be a plan that met these needs of this mandate. The purpose of the project was to investigate the use of PLCs in three high schools, their effectiveness on student achievement, and, therefore, the impact on graduation rates.

Description of the Environment

The researcher investigated three high schools located in the southeastern corner of the State of Washington. Each of the three schools used PLCs starting in the 2010-2011 school year. The researcher collected data from the OSPI report card website for the graduating years 2007-2008, 2008-2009, and 2010-2011. The three high schools had an average population of 1491 students.

Hypothesis

High schools that used the Dufour method of Professional Learning Communities had increased graduation rates.

Null Hypothesis

High schools that used the Dufour method of Professional Learning Communities did not have an increase in graduation rates.

Results of Study

Data Table 1 showed that high school 1 had an average graduation rate for pre-PLC use of 78.6% for the 2007-2008 and 2008-2009 school years and 82.9% for the post-PLC 2010-2011 school year. This was an increase in graduation rates of 4.3% for high school 1. High school 2 had an average graduation rate for pre-PLC use of 62.9% for the 2007-2008 and 2008-2009 school years and 70.9% for the post-PLC 2010-2011 school year. This was an increase in graduation rates of 7.8% for high school 2. High school 3 had an average graduation rate for pre-PLC use at 73.55% for the 2007-2008 and 2008-2009 school years and 82% for the post-PLC 2010-2011 school year. This was an increase in graduation rates of 8.45% for high school 3.

Data Table 1: Graduation Rates

| High School | Average graduation rate(%) 2007-2008,2008-2009 | Graduation rate(%) 2010-2011 | % of increase |
|-------------|---|------------------------------|---------------|
| 1 | 78.6 | 82.9 | 4.3 |
| 2 | 62.9 | 70.7 | 7.8 |
| 3 | 73.55 | 82 | 8.45 |

Data Table 2 showed the results of a t-test analysis from the data found in Data Table 1. The P-value for the t-test one-tail was 0.016810206. The critical P level was set at P=0.05. Any P-value less than the critical P level meant the null hypothesis must be rejected. Because the P-value of 0.016810206 was less than the critical P level of 0.05, the null hypothesis was rejected.

Data Table 2: t-test: Paired Two Sample for Means

| | <i>Average graduation rate(%) 2007-2008,2008-2009</i> | <i>Graduation rate(%) 2010-2011</i> |
|---------------------------------|---|---|
| Mean | 71.68333333 | 78.53333333 |
| Variance | 64.23583333 | 46.22333333 |
| Observations | 3 | 3 |
| Pearson Correlation | 0.967847849 | |
| Hypothesized Mean Difference | 0 | |
| df | 2 | |
| t Stat | -5.315297108 | |
| P(T<=t) one-tail | 0.016810206 | |
| t Critical one-tail | 2.91998558 | |
| P(T<=t) two-tail | 0.033620413 | |
| t Critical two-tail | 4.30265273 | |

Findings

Because the null hypothesis was rejected, the hypothesis, that high schools that used the Dufour method of PLCs had increased graduation rates, was accepted. The P-value of 0.016810206 indicated that there was a significant correlation between the use of PLCs and increased graduation rates. The correlation did not exclude other factors that could have increased graduation rates.

Discussion

The results of this research were consistent with the findings of Dufour (2002) and Bezzina (2006). Dufour (2002) and Bezzina (2006) indicated that PLCs did increase student achievement. The use of PLCs by high schools did increase student achievement and therefore increased graduation rates. Besides PLCs, other factors could have been responsible for increased graduation rates. The factors that could have increased graduation rates were high school tutoring programs, changes in high school professional staff, and increased parental involvement with students. The researcher studied none of these factors for this research.

Summary

The researcher investigated three high schools located in the southeastern corner of the State of Washington. Each of the three schools used PLCs starting in the 2010-2011 school year. The hypothesis stated that high schools that used

the Dufour method of Professional Learning Communities had increased graduation rates. The null hypothesis stated that high schools that used the Dufour method of Professional Learning Communities did not have an increase in graduation rates. Each of the three high schools showed an increase in graduation rates for the 2010-2011 school year. Because the P-value of 0.016810206 from the t-test was less than the critical P level of 0.05, the null hypothesis was rejected. The t-test also suggested a significant correlation existed between the use of PLCs and high school graduation rates. The results of the t-test did not exclude other possible factors, such as tutoring programs, for increased high school graduation rates. The significant correlation for PLC usage and increased high school graduation rates suggested that the hypothesis was a possible explanation for the increased graduation rates.

CHAPTER 5

Summary, Conclusion, and Recommendations

Introduction

The purpose of the project was to investigate the use of PLCs in three high schools, their effectiveness on student achievement, and, therefore, the impact on graduation rates. Concerns with the research were the number of schools sampled and the number of years of data collected.

Summary

The impact of NCLB had many principals looking for ways to increase student achievement. One such way was the use of PLCs. The research looked into how PLCs might have increased the graduation rates of three high schools located in southeastern Washington State. The average population for all three high schools was 1491 students. The schools also had an average of 40% free and reduced price meals. Graduation rates were obtained from the OSPI school report card website. Graduation rates from the 2007-2008, 2008-2009, and 2010-2011 school years were collected. The review of the literature supported four main factors that contributed to student achievement. The first of these was leadership from the principal. The second was professional development. The third was the implementation of PLCs. Finally a fourth factor was briefly reviewed; the value of a high school diploma. Quantitative research was used to determine the validity of the hypothesis. A causal-comparative correlation research design was

used. The three high schools located in southeastern Washington State had increases in graduation rates of 4.35% for high school 1, 8% for high school 2, and 8.45% for high school 3. A t-test was used to determine the correlation of PLCs and increases in graduation rates. The result of the t-test was a P-value of 0.016810206, which was less than the critical P level of 0.05. The null hypothesis was rejected. Increases in the three high schools' graduation rates were significantly correlated with the uses of PLCs.

Conclusion

The correlation in the graduation rates of three high schools located in southeastern Washington State with the uses of PLCs was significant. The correlation of increases in graduation rates and uses of PLC did not eliminate other variables, which might have contributed to these increases.

Recommendations

Further research into increases in graduation rates and uses of PLCs would help determine how strong the correlation is between them. The researcher would like to include more high schools and more years of graduation rates in the data to determine how strong the correlation is between PLCs and graduation rates. The researcher would also like to determine if the high schools have high parent involvement with the students and schools, and if the schools have any tutoring or other programs that might also increase graduation rates.

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