

THE INFLUENCE OF SUSTAINED PROFESSIONAL DEVELOPMENT
ON PANAMANIAN TEACHERS:
STUDENT ENGAGEMENT AND PERCEPTIONS

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INFLUENCE OF SUSTAINED PROFESSIONAL DEVELOPMENT

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ON PANAMANIAN TEACHERS:

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ABSTRACT

This study's purpose is to determine the effectiveness of ProEd's Teachers Teaching Teachers Program, by examining how participation impacts student engagement, lesson design, and student perceptions of their teachers. Twenty teachers from Escuela San Jose de Malambo were observed during one lesson. After each observed lesson, students filled-in a teacher perception survey. The twenty teachers were divided into two groups: teachers who attended TTT workshops zero or one year, and teachers who attended for two to five years. Statistically significant differences between both groups were found for some of the instructional strategies and activities observed. With teachers who had more TTT experience, students spent significantly more time working with each other and used more conferencing. Teachers with less TTT experience used more question and answer and observation by student. Statistically significant differences between the two groups were found in four independent survey items and in an overall quality score given to each teacher. For these items, means were higher in the group of teachers who had attended TTT for 2 to 5 years. Additional lessons by the same teachers should be observed and the study can be replicated in other schools that have participated in TTT to see if the findings are similar.

Section I

Introduction

Background of the Study

Teacher effectiveness and training. Teacher quality has the most significant effect on student learning (Looney, 2011; Gallagher, 2004). Many studies in the existing literature have linked teacher effectiveness and student learning (Rockoff & Speroni, 2011). Considering this, attempts to improve education should begin with the betterment of teachers, teaching practices, and instructional strategies. Polk (2006) lists lifelong learning as an important quality of effective teachers.

Panama is a growing country that aims to strengthen its educational programs and opportunities. A considerable part of this effort should be placed on developing effective teacher training programs for both aspiring and current instructors. Such programs would produce high quality teachers that would in turn lead to increases in student achievement. The development of new training programs, along with the improved performance of both teachers and students, would further enhance the field of education in Panama

Given that effective teaching practices have a positive effect on student outcomes, much importance should be placed on creating programs that develop beneficial instructional strategies in new teachers. Existing training programs often leave teachers feeling unready to start their work as educators (Roofe & Miller, 2013). In particular, new teachers feel like they are not equipped with the necessary tools to manage a classroom after completing teacher preparation programs (Jackson, Simoncini, & Davidson, 2013). Professional development programs can allow teachers to fill the gaps left from inadequate preparation. Continued professional development throughout their

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careers can promote the improvement of teaching practices and further prepare teachers for success, therefore leading to higher student achievement.

ProEd Foundation. ProEd is a nonprofit organization that promotes education in Panama by providing continuous professional development opportunities to teachers. Six years ago, ProEd created the program Teachers Teaching Teachers (TTT), which offers workshops where teachers can learn dynamic and interactive ways to engage students during lessons, along with many other instructional strategies (Fundacion ProEd Panama, 2013). Initially, Teachers Teaching Teachers offered 40 hours of professional development per year to a group of 50 teachers. Today, this program is endorsed by the Ministry of Education and offers 80 hours of professional development every year to over 200 teachers throughout the country.

Through their workshops, ProEd has created a professional learning community with the goal of providing continuous learning opportunities to teachers, therefore contributing to the improvement of student learning (M. A. Cassino, personal communication, April 13, 2015). Professional learning communities allow teachers to learn from each other, as well as engage in practices that help them gain new knowledge and improve upon their existing competencies and skills (Wood, 2007). Public schools apply to participate in this program, and if they are selected, they are given the opportunity to send 10 of their teachers to the workshops. This is a year-long program, divided into three multiple-day conferences that teachers attend throughout the year. The workshops offered in these conferences cover topics such as pedagogy, inclusion, and the implementation of dynamic instructional practices that are modeled by ProEd's coaches. In order to ensure superior training, ProEd's staff members participate yearly in

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continuing education programs both locally and internationally that allow them to acquire information regarding the latest instructional strategies. Through the professional development of teachers, this program reaches approximately 7,000 students in grades K-12, therefore contributing to their academic achievement (M. A. Cassino, personal communication, April 13, 2015).

Statement of the Problem

Effective teacher training programs are important because there is a relationship between teaching practices and student achievement (Antoniou & Kyriakides, 2013; Nandamuri & Rao, 2012). However, existing undergraduate education programs are not always successful in preparing teachers for this demanding task. New teachers often feel unprepared to begin teaching after completing their teacher training programs (Harrington, 2013; Jackson et al., 2013; Rooffe & Miller, 2013). Programs that offer better preparation, as well as continuous training to teachers, should be developed.

Teachers are expected to be constant learners. Many educational systems require instructors to continue to pursue formal education in order to stay current with new instructional tendencies. An option for this continuing education can be professional development programs. Professional development leads to quality teaching, which in turn promotes student learning and success (Boyd, Grossman, Hamilton, Loeb, & Wyckoff, 2009; Gansle, Noell, & Burns, 2012; Kyriakides, Creemers, & Antoniou, 2009). Through these programs, educators can be taught classroom strategies that encourage student participation and engagement.

Student engagement is also an important predictor of academic success (Wang & Eccles, 2013), as well as positive lifelong outcomes (Goldspink & Foster, 2013).

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According to Goldspink and Foster (2013), evidence in the research shows that a large number of students become increasingly less engaged as they spend more time in school. Unfortunately, these behaviors that are conducive to learning are seldom present in Panamanian public schools' classrooms. Panama has begun to exert efforts in the field of education in order to increase student achievement. However, teacher-training programs in Panama are limited, and more options for aspiring teachers are needed (Ministerio de Educacion, 2010; Universidad de Panama, 2010). Quality teacher preparation and professional development programs are needed in order to allow both new and existing teachers to meet the educational needs of Panamanian students.

Education in Latin America is beginning to get more attention from the public, politicians, and non-governmental organizations. However, there is still much work to be done (Purcell, 1981; Roofe & Miller, 2013; Sands, 1964; Vaillant, 2011). Many gaps exist currently in the literature, particularly regarding education in Central America and in Panama specifically. The research in this particular field is scarce. Any studies regarding the educational field in the region would significantly contribute to the literature. Determining the precise skills and competencies that are required by teachers in the region and that training programs should aim to develop is also missing from existing literature. Moreover, research on alternate methods of teacher training would also supplement current studies that are present in the literature.

Purpose of the Study

The development of an effective teacher-training program in Panama is imperative for the improvement of the country's educational system. The existing relationship between effective instructional practices and positive student outcomes

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further emphasizes the need to develop competent teachers. The formation of competent educators can be achieved through the creation of teacher education and professional development programs that can properly prepare new and current teachers for professional success. Teachers that emerge from such programs can then lead Panamanian students to improved academic achievement and enhance education in the country overall.

The main purpose of this study is to determine the effectiveness of ProEd's Teachers Teaching Teachers Program. More specifically, this study will examine the impact participation in this program has on student engagement, lesson design, and student perceptions of their teachers. Research questions will focus on whether program participation results in teachers encouraging student engagement in the classroom, as well as in improved assessments of teachers as viewed by students. The results of this study will allow ProEd to assess their training practices, by analyzing successful and insufficient methods that are part of their current professional development program. These findings can guide both planning and advancement of future workshops. For this purpose, the research for this study will examine the effects of this specific program in one particular school.

Research Questions

The research questions guiding this study are:

1. How does participating in a professional learning community through a professional development program impact instruction in a way that promotes student engagement?
2. How much student engagement is present in lessons imparted by teachers who have participated in this program?

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3. What are the student perceptions of teachers who have participated in this program?
4. What are the differences in student perceptions of teachers, as well as in instructional methods and activities they use, who have never participated in TTT, teachers who have participated only one year, and teachers who have participated two or more years?

Conceptual Framework

In order to be able to assess these programs and their impact, it is important to look at existing theories of adult learning. Among these theories, transformational learning better applies to the program being evaluated in this study. Therefore, the conceptual framework guiding this study is transformative learning. The reason this theory was chosen to direct this study is because teachers who participate in ProEd's Teachers Teaching Teachers program transform their instructional practices and perspectives entirely, and adopt new strategies to promote student engagement. People who undergo transformative learning are shaped by their experiences and show recognizable evidence of change (Merriam & Bierema, 2014).

Transformational learning theory has grown to become the leading theory guiding adult education (Choy, 2009; Merriam & Bierema, 2014). Mezirow (2009) defines transformative learning as "learning that transforms problematic frames of reference to make them more inclusive, discriminating, reflective, open, and emotionally able to change" (p. 22), shifting an individual's schematic views into more comprehensive, flexible, and open perspectives. In order for transformational learning to take place, learners must engage in a reflective process through which they examine and challenge their personal beliefs (Merriam & Bierema, 2014). It is an intrinsic process through

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which individuals transform their identity by shifting their worldview through personal reflection (Poutiatine & Conners, 2012).

Mezirow (2009) describes transformative learning as a mainly cognitive process through which individuals assess existing assumptions in order to change their personal viewpoints and give new meaning to known concepts. Based on this definition, it can be concluded that learners must engage in critical thinking in order to experience transformative learning. Through critical thinking, individuals evaluate their beliefs, look for different alternatives, and make informed decisions based on those reflections (Merriam & Bierema, 2014). In explaining his theory, Mezirow (2009) depicts transformative learning as the process through which adults make their own judgments, rather than follow known assumptions.

Four perspectives compose transformative learning: cognitive, developmental, emancipatory, and spiritual-integrative (Merriam & Bierema, 2014). There are different ways in which individuals can learn according to transformational learning theory: by adapting existing frames of reference, by acquiring new frames of reference, and by changing viewpoints and habits of mind (Slavich & Zimbardo, 2012). Transformative learners search for meaning in what they experience, engage in mindful learning, verify and broaden their beliefs, and accept the views of others (Choy, 2009). In order for transformational learning to truly take place the learner must not just alter their feelings and behaviors, but also the way they acquire and manage new knowledge (Poutiatine & Conners, 2012).

Reflective thinking, feelings, communication, beliefs, ideals, and relationships can propel transformational learning (Kiely, 2005). It is driven by an intrinsic motivation

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that allows the learner to make connections to their own life (Illeris, 2014). In order to support transformational learning, educators should provide learning activities that allow students to explore and give personal meaning to new content (Slavich & Zimbardo, 2012).

Merriam and Bierema (2014) offer several instructional strategies that promote transformational learning: practice-based problems, collaborative learning, teamwork, critical reflection, emotional events, and most importantly creating a safe space where learners can engage in these activities. Choy (2009) also lists several methods that encourage transformative learning, such as "relevancy of content, direct and active learning experiences, use of varied media, trustful relationships, and organizational support to act on new understandings" (p. 77). These are all strategies that are tackled by ProEd's workshops, providing transformative learning opportunities to its teachers.

Transformational learning theory can be used at the time of developing teacher training programs. Choy (2009) listed several instructional strategies that support transformative learning in the workplace. These include using content that is relevant to their work, facilitating direct and active learning experiences, employing assorted teaching materials, establishing a trusting relationship among learners, and ensuring organizational support for transformation. Instructors can also encourage transformative learning in their students by providing learner-centered activities, as well as interactive and interdependent learning exercises that promote the shifting of assumptions (Slavich & Zimbardo, 2012).

Transformational learning can also be prompted through transformational teaching. Through this process, dynamic relationships are formed between educators and

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learners, who attain new knowledge through collaborative means (Slavich & Zimbardo, 2012). This process promotes both personal and academic growth by transforming learners' beliefs, attitudes, and abilities (Slavich & Zimbardo, 2015). The coaches leading ProEd's workshops engage in these behaviors, encouraging collaboration among peers and establishing meaningful relationships with their students.

Research Design

This research is designed as a case study that evaluates the impact that ProEd's Teachers Teaching Teachers program has on the instructional strategies of participant teachers, as well as on the perceptions of those teachers' students. Evaluation research can be used to gather evidence on a program's merit and utility (Merriam, 2009). A case study is an extensive examination of a specific phenomenon in its natural setting (Rosenberg & Yates, 2007; Yin, 2013). Case study evaluations can have a descriptive, exploratory, or explanatory role (Yin, 2013). "Case study research permits the selection of the methods used to collect and analyse data with the complexity of the case and its context in mind" (Rosenberg & Yates, 2007, p. 448). In this particular case, the phenomenon of interest is the Teachers Teaching Teachers program and the impact it has had on teachers and students subsequently. The constructs described are instructional effectiveness, student engagement, and student perceptions of teachers, specifically how they are influenced by ProEd's professional development program.

Setting and participants. The setting for this study is Escuela San Jose de Malambo, which has consistently participated in ProEd's Teachers Teaching Teachers for the past three years. Escuela San Jose de Malambo is a Catholic institution that is annexed to an orphanage with the same name, offering an education to both children who

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reside in the orphanage, as well as students from local communities, adding to a total of around 400 students (Perez, 2011). It includes grades from preschool to high school, and follows all the norms and guidelines established by Panama's Ministry of Education.

A total of twenty teachers were chosen to participate in the study. The teachers participating attended the conferences for different amounts of time. The amount of time was measured as the total amount of years having participated in TTT (not consecutive years). Of the twenty teachers, four participated in TTT for 3 or more years, four participated for 2 years, four participated 1 year, and six did not participate at all. This wide range of participants allowed for the comparison of the impact the Teachers Teaching Teachers program has in the short-term (1 or 2 years) as well as over a longer span of time (3 to 5 years).

Both the setting and participants were selected through convenience sampling. Convenience samples are made up of naturally occurring groups, such as classrooms and schools (Creswell, 2009). This particular school was chosen because of its repetitive participation in ProEd's program, and willingness to participate in the study. The teachers were selected according to the number of years they have attended ProEd's TTT program, and their openness to classroom observations and being study participants.

Data collection. There are two quantitative components that make up the data for this study: classroom observations and student perception surveys. These measures were chosen following the MET Project's (2013) report suggesting that three separate measures be used to evaluate effective teaching: "student achievement gains on the state tests, student perception surveys, and classroom observations" (p.11). Since no standardized

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tests exist in Panama to measure student achievement, this third component cannot be part of the data collected for this study.

The data for this study was collected through classroom observations by the researcher. Only one lesson by each teacher was observed. These observations were audio recorded for further evaluation and analysis. The researcher developed an observation form (see Appendix A) that was used as an instrument to document in-class student engagement. These forms measured and recorded the amount of time students were engaged during class by actively participating in various learning activities. More specifically, the researcher recorded the number and type of activities that teachers used to actively encourage students to participate during lessons.

In order to measure student engagement present during lessons, the researcher measured the amount of time per class period that teachers spent in instruction, the amount of time students spent working together, and the amount of time students spent working individually. The researcher measured how much time students spent actively working and participating, and compared it to the amount of time teachers spent talking or lecturing in class. The researcher specifically recorded the amount of time students were working (both individually and with others) during class, and the number of times teachers provided opportunity for student participation. These are quantifiable measures.

The activities that were recorded during classroom observations are the following:

- Question/Answer
- Quiz/Worksheet
- Test
- Group response

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- Individual response
- Conferencing
- Observation by student

The teachers' instruction delivery methods were also recorded as part of classroom observations. The researcher looked at instructional strategies targeted in the ProEd curriculum. The methods that were part of the observation form are the following:

- Lecture (Teacher)
- Class discussion (Teacher–Students)
- Cooperative learning (Student-Student)
- Learning centers (Student)
- Independent Seat Work (Student)
- Partner Teaching (Student-Student)
- Guided Practice (Teacher-Students)

The second data collection instrument that was used for the purpose of this study is a student perception survey that measures students' impressions regarding their teachers. Surveys can provide quantitative descriptions of the opinions and beliefs of a specific population (Creswell, 2009). ProEd has received permission from the MET Project (Measures of Effective Teaching) to translate and adapt their student perception survey for their own use. This survey consists of 12 items on a Likert scale that ask students whether their teachers care about their learning, among other queries. This survey has been previously used as an assessment tool at ProEd, and was administered again in the classrooms of the teachers that were observed.

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Data analysis. This is a quantitative study. Quantitative research examines relationships between variables using methods that can be analyzed through statistical tests (Creswell, 2009). The observation forms and student perception surveys were measured through statistical analysis. The tests that were run for this study include descriptive statistics, frequency tests, and comparative means.

For the survey analysis, Spearman Rank-Order correlations were run to examine relationships between the number of years attending TTT and each survey item. The sample was divided into two groups for comparisons both in survey and observation analysis: 0 or 1 year in TTT and 2 to 5 years in TTT. Independent-Samples t-tests and Levene's Test for Equality of Variances were run to examine differences between these two groups.

Limitations

An important limitation of this study is that a case study is difficult to generalize to other programs or situations. Yin (2013) particularly mentions that results from case studies generally cannot be transferred from one country to another. This might be a limitation when seeking to replicate the program being evaluated in other countries in the area with different educational systems and instructional practices.

Another limitation in the study is the lack of standardized student achievement measures in Panama. Since a standardized measure is unavailable it will be difficult to evaluate student gains and academic performance for the purpose of this study. Because of this it might be argued that the evaluation for the impact of TTT on effective teaching is incomplete.

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A major limitation of the study is that teachers were informed of the dates in which their class would be observed, therefore they had opportunity to prepare their lessons beforehand to make them more interactive and to foster student engagement. There is a strong possibility that the lessons observed were not representative of teachers' usual instructional strategies.

Key Terms

Several concepts are examined for the purpose of this study. The first are those related to teacher learning and training, such as teacher preparation and professional development. Teacher preparation involves learning that takes place before teachers begin service as educators in various school settings, such as teacher education programs. Professional development is learning that takes place continuous to professional work, such as workshops or seminars. Professional learning communities, such as the one being evaluated in this study, are made up of teachers who learn together to improve practice and student gains (Wood, 2007).

Another key concept examined through this study is student engagement, and how it can be influenced by teacher participation in professional learning programs. For the purpose of this study, student engagement is defined as students' active involvement and participation during lessons. More specifically, activities considered as active engagement include: students completing individual class work, students working with other students, students verbalizing lesson-related questions or comments, and general lesson-related communication. Such observable behaviors, otherwise known as procedural engagement (Spanjers, Burns, & Wagner, 2008), will be recognized as student engagement for this study.

Significance of the Study

This research may possibly contribute to the development of additional professional development programs so that larger amounts of teachers may benefit from participation in similar programs. Programs may not only become available in different areas of the country, but they may also follow a similar curriculum as the one used in the program being studied. The establishment of effective training programs for teachers would further Panama's current agenda of providing continuous learning opportunities to local teachers, as well as the bottom line of improving the existing educational system.

ProEd will particularly benefit from this study because they will gain deeper awareness of the impact of their work. The results of this study will inform their program directors regarding the strengths and weaknesses of Teachers Teaching Teachers. The knowledge gained from this study will directly improve practice by allowing the program directors to alter their curriculum and strategies accordingly. Furthermore, ProEd will also be able to share this information with sponsors and other important stakeholders in the organization. If the results are aligned with their program's objective, they will be able to understand the practices that lead to success and replicate them in the future. In addition, it will be beneficial at the time of fundraising and seeking new donors for the organization. If the results do not meet program's expectations, ProEd's staff will be able to evaluate their current instructional methods and determine what strategies must be changed in order to meet the organization's objectives and accomplish its mission.

This study will contribute to scholarship and the existing literature by adding information regarding education in Central America, given that education-related research in this geographical area is lacking. Moreover, this study will add to the

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literature further knowledge about current teacher training and professional development programs, specifically regarding their impact on student engagement and student perceptions of their teachers. The results that are attained by these programs can encourage further research on similar projects.

Summary

Effective teacher training programs in Panama and Central America are lacking. ProEd has tried to meet this need by creating a professional development program for public school teachers. Such programs can have a significant positive effect in instructional performance and student achievement. This study can help determine effectiveness of this and similar programs, by examining their impact on classroom instruction and student engagement. Teachers participating in continuous training may experience transformative learning, altering their practices and beliefs accordingly. This study will look at teachers who have participated in ProEd's professional development workshops for varying amounts of time and observe their classroom instruction, in order to examine their instructional strategies and their students' participation and engagement. Findings from this research may encourage the establishment of similar teacher training programs in the country and other areas of Latin America.

Section II

Practitioner Setting

This section is a description of the setting that serves as base for this study. It begins with a brief history of the organization, the events that inspired its creation, as well as its vision and what the founder hopes to accomplish through it. The history is followed by an analysis of its organizational framework, as well as a short depiction of its structure. The leadership analysis then explains the leadership style that directs this organization. The section concludes with the implications this study's research questions present for the practitioner setting.

History of the Organization

Fundacion ProEd is a non-profit organization in Panama City, Panama that was founded in 2001. Horrified by the events of 9/11, New Jersey native Debbie Psychoyos had a vision for the need to reconstruct society. That same evening, she wrote the draft for Students Supporting Students, ProEd's first project (M. Cassino, personal communication, January 25, 2016). Debbie Psychoyos, founder and CEO of ProEd, is the heart of the organization. She has been working towards Panamanian education for over thirty years. Her goal for creating this nonprofit was to establish something that would bring people together in order to prevent similar events from taking place. Debbie believes that through education and cooperation, and with the help of inspiring teachers, Panamanian students will be motivated to work towards the betterment of their country, therefore creating a more positive culture.

Guided by this mission to improve culture through education, she created Students Supporting Students, a community service program through which students

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worked with students from underprivileged areas and helped them improve their schools' facilities. This program was very successful, but the organization's focus began to shift from physically improving schools' classrooms to reconstructing instructional pedagogy (M. Cassino, personal communication, January 25, 2016). That is when ProEd launched Teachers Teaching Teachers (TTT) in 2005, which became their main program, providing free professional development to over 200 teachers in Panama. Around ten schools participate in this 80-hour program every year.

In the past few years, ProEd has developed other supplementary programs for the schools participating in TTT, including the Directors' Leadership Academy and the Youth Leadership Academy (for middle school and high school students). The Directors' Leadership Academy offers opportunities to the principals of participating schools to reflect on their leadership practices and how they may affect their respective schools' communities (M. Cassino, personal communication, January 25, 2016). The Youth Leadership Academy aims to develop leadership skill in young students and empower them to be agents of change within their school communities. These three programs make up ProEd's Professional Learning Community (PLC), which has the purpose to improve student learning and performance through the support of educational leaders and teachers. The members of this professional learning community are approximately 15 school administrators and 200 school teachers, who together influence about 7000 students (M. Cassino, personal communication, January 25, 2016). In addition to this community, ProEd also runs a literacy program in a school in a remote rural area of the country, which has expanded to other schools in Panama.

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The values guiding ProEd's work are passion, respect, integrity, and responsibility (Fundacion ProEd, 2013). ProEd's mission is to promote education by providing professional development to teachers and programs for students in order to enhance their learning process. Their vision is to develop qualified, dedicated, and passionate teachers (M. Cassino, personal communication, January 25, 2016). Following their values, mission, and vision, ProEd's team continues to work hard in favor of Panama's education and to embark in new projects that will form successful students who strive rebuild society and foster a positive culture.

Organizational Analysis

Fundacion ProEd is a very small organization with only six employees: the founder and CEO, the executive director, the program director, two teacher leaders, and an accountant. The occasional intern, usually a college student, helps the employees with their various projects throughout the year. A board of directors, consisting of ten volunteers with different backgrounds, guides the organization, develops fundraising strategies, and makes important budget decisions. Everyone works together as a team to ensure ProEd's success.

The organizational frame guiding this foundation is the Human Resource frame. This frame regards people as the most important asset of an organization. Within this framework, the needs of the organization and its members are the same, therefore, individuals reaching self-actualization will bring the best results to the organization (Bolman & Deal, 2008). An individual who reaches self-actualization achieves his or her personal quest for self-fulfillment and urgency to reach his or her highest potential (Maslow, 1943/2005).

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The human resource frame considers people's abilities and contributions necessary to complete required tasks within an organization (Bolman & Deal, 2008). For this reason, ProEd invests in developing their own people's skill sets. Teacher leaders and directors participate in continuing education and professional development programs every year, often abroad. ProEd believes that all teachers must engage in continuous learning throughout their career, which is why they ensure their own team members also follow this ideal and cultivate their knowledge and experiences in order to offer their best abilities to the teachers they train. This investment in perpetual learning and development allows ProEd's employees to meet their self-actualization needs.

Teamwork is also extremely important for ProEd. When searching for the right candidate to work at the organization, the directors must not only find someone who shares ProEd's values, but also someone who can work well in a team. A cooperative environment in an organization contributes to the effective operation of teams (Levi, 2014). ProEd counts with a very small group of employees that manages a vast amount of teachers and programs throughout the school year. For this reason, they must use every resource available and learn how to rely on each other as a team, drawing on one another's strengths whenever necessary. Teams can integrate the various aspects of an organization in a timely and cost-effective fashion (Levi, 2014).

As ProEd's leaders work with teachers, trying to develop and enhance the human resources of various schools, it is expected that they value both the human resource frame and teamwork within (and outside) their organization. Cooperative work and cooperative learning are practices they seek to establish and promote through their programs.

Leadership Analysis

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The leadership framework that is found in ProEd's organization is transformational leadership. The nonprofit's founder and CEO created ProEd in order to effect change in others and rebuild culture. Through transformational leadership, a leader follows moral values and makes connections with others in order to create change (Northouse, 2013). This type of leadership is attained through a process by which leaders transform others as well as themselves. ProEd's goal is to transform Panamanian classrooms by exposing teachers to new and interactive instructional methods that promote student engagement. This goal is what has led the ProEd team to undertake transformational leadership.

An important trait of transformational leaders is that they recognize and meet their followers' needs, engaging them in a way that fosters their personal growth and allows the followers to become leaders (Denhardt & Campbell, 2006). When developing workshops, ProEd's team always has in mind the needs of the teachers they will be training, including transportation, nourishment, availability of classroom resources, and educational gaps.

Northouse (2013) lists four factors of transformational leadership: idealized influence or charisma, inspirational motivation, intellectual motivation, and individualized consideration. Transformational leaders use modeling, innovation, collaboration, values, emotions, and rewards in order to accomplish a vision that is shared by the entire organization. ProEd's founder has been able to influence the organization's directors into that shared vision, who have in turn influenced the teacher leaders who work with them, as well as the hundreds of teachers they train. Transformational leaders develop a clear vision for their goals, shaping their organization around that vision and

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enabling followers to reach those goals (Northouse, 2013). They motivate those around them to consider the organization's goals as their own by increasing their awareness of the goals' importance and attending to higher-level needs (Denhardt & Campbell, 2006; Northouse, 2013).

In order for transformational leaders to be considered as such, they must catalyze change derived from a moral source, while also instilling moral values in their followers and raising their awareness of what is right (Denhardt & Campbell, 2006). ProEd's leaders constantly promote their values of passion, responsibility, integrity, and respect, ensuring that all members of the organization also share them. Through their workshops, they underline the importance of pursuing these values within their professional learning communities, hoping that they will reach the classrooms of all participating teachers. If they are successful, they will ignite the transformation of thousands of students throughout Panama.

Implications for Research

The practitioner setting for this study is a nonprofit organization that is guided by transformational leadership, while placing much importance in teamwork and in developing human resources. Considering that it is a very small organization running such a large number of programs, it may be difficult to schedule time with its members in order to attain access to information that the researcher may need in order to complete the study. However, the emphasis ProEd's team places on cooperation will help counteract this issue. In addition, ProEd has an increased need for research and data regarding the effects of their various programs. Because of this need, they have encouraged the researcher to pursue this study.

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The research questions for this study look at the impact that participating in Teachers Teaching Teachers has on student engagement. The practitioner setting would benefit from this study, as it would answer questions regarding the effectiveness of its professional development program. Each of the research questions will bring a significant contribution to the organization:

1. How does participating in a professional learning community through a professional development program impact instruction in a way that promotes student engagement? More specifically, what activities do teachers use during instruction to promote student engagement?

Answering these questions will allow the practitioner setting to determine whether their professional development program has the desired outcome in the classrooms of participating teachers. More importantly, it will provide information regarding the types of activities these teachers use to engage their students during instruction.

2. How much student engagement is present in lessons imparted by teachers who have participated in this program?

This question will provide a quantifiable measure of student engagement in the classrooms of teachers who have attended TTT. Moreover, it will allow for the comparison of the amount of engagement present in classrooms of teachers who have been through ProEd's professional development program, versus the amount of engagement in the classrooms of those who have not been a part of the program.

3. What are the student perceptions of teachers who have participated in this program? Students' perceptions of teachers who have been through ProEd's Teachers Teaching Teachers will be valuable to the organization, as their main goal is to influence

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- students by creating engaging teachers who use interactive activities to make lessons more appealing.
4. What are the differences in student perceptions of teachers, as well as in instructional methods and activities they use, who have never participated in TTT, teachers who have participated only one year, and teachers who have participated two or more years?

Knowing the differences between these two groups will provide insight as to how ProEd's TTT workshops can have an impact on its teachers and their practices according to the amount of years they attend the program. This might allow ProEd to determine the number of years they implement their program in order to have a lasting effect on its teachers.

Summary

Fundacion ProEd is a nonprofit organization that aims to rebuild education in Panama by establishing a professional learning community for various schools throughout the country. ProEd's strong values have led it to establish a transformational leadership through which they guide both organization members and educators participating in their various programs. Through their leadership, they have been able to transform hundreds of teachers and their instructional strategies by encouraging cooperation and teamwork. ProEd's focus on developing their and others' human resources have led to the success and growth of the organization.

Section III

Scholarly Review:

Teacher Training and Student Engagement

Education is becoming an issue of growing importance worldwide. Skilled and dedicated teachers are imperative for the advancement of a nation's educational system (Nandamuri & Rao, 2012). "The teacher is the most important element in any educational program" (Nandamuri & Rao, 2012, p. 21). For this reason, education researchers and practitioners should create programs that promote the development of competent teachers.

Effective teachers are instrumental to student achievement (Antoniou & Kyriakides, 2013; Gansle et al., 2012; Nandamuri & Rao, 2012; Polk, 2006). Some of the traits that describe effective teachers include communication skills, knowledge, modeling ability, and continuous learning (Polk, 2006). Successful teachers are also skilled in classroom management practices, which involve setting expectations, enforcing norms, and following a structure (Gregory, Allen, Mikami, Hafen, & Planta, 2014). In order to produce quality teachers, it is important to offer them a variety of effective learning opportunities.

Polk (2006) stated that "a major component of teaching is that of learning" (p. 23). Teaching and learning have a reciprocal relationship. Teachers must continue seeking learning experiences in order to promote learning in their students. Teacher learning can occur both prior to service and during service (Nandamuri & Rao, 2012). Pre-service learning generally involves teacher training or preparation; while in-service learning can consist of professional development programs. Teacher preparation and

professional development are a current priority in the education field (Antoniou & Kyriakides, 2013). Developing effective training programs for teachers has also become an important concern in Latin America.

This scholarly review begins with a brief overview of existing studies about teacher education in Latin America and Panama. The review then explores literature regarding existing teacher preparation and professional development programs, including their effects on student achievement and teacher effectiveness. The literature review also includes an appraisal of the effects training programs may have on students' classroom engagement, as well as their perceptions regarding their instructors.

Education in Latin America

The educational field in Latin America has received increased attention from policy-makers, as well as other important figures and stakeholders. Education in Latin America has evolved considerably over the past two decades (Vaillant, 2011). While many changes have had positive results, the process has been strenuous, and progress has been limited. Some of the new developments include new evaluation systems, curricular changes, equity development, instructional improvement, and systemic advances (Vaillant, 2011).

Unfortunately, education in Latin America continues to encounter many challenges. Latin America has consistently underperformed on a variety of international educational evaluations (Vaillant, 2011). One of the most important issues that is encountered by Latin American students is that access to schools is very inconsistent (Vaillant, 2011). Students in some areas, particularly rural locations, can have difficulty reaching a school in order to complete their education. In addition, researchers have

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reported difficulty conducting field research and accessing teacher-related data in various Latin American nations, particularly in developing countries (Chambers-Ju, 2014).

The Latin American educational system is lacking in competent teachers and quality of instruction. One of the most significant difficulties is the ineffectiveness and insufficiency of teacher training programs in Latin America (Vaillant, 2011). Moreover, Latin American teachers are often not qualified to handle diverse populations or inclusive education. In many countries, student teaching is not a consistent practice, meaning that many new teachers enter the profession with little to no classroom experience (Purcell, 1981). Teachers, as well as their profession, are undervalued and perceived to have a low status in Latin American society (Vaillant, 2011).

In Panama, the situation continues to be difficult. Teacher education programs in Panama are limited to one public program in the national university and a two-year training program (Ministerio de Educacion, 2010; Universidad de Panama, 2010). While several professional development programs for teachers have been developed by the current government, more options for aspiring teachers are needed. The development of an effective teacher training program in Panama is imperative for the improvement of the country's educational system.

Teacher Preparation

Teachers are considered to be life-long learners, continuously pursuing opportunities to expand their education. Expectations for teachers and their work are increasing daily. Teacher preparation programs play an instrumental role in the development of new teachers. The role of these programs is complex, involving several functions such as recruiting prospective teachers, conveying content and pedagogical

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knowledge, training new educators, and selecting those who are ready to begin professional work (Gansle et al., 2012). Training programs should also address teachers' professional needs in order for them to feel confident to manage actual classroom situations and create environments that are conducive to learning (Jackson et al., 2013; Nandamuri & Rao, 2012).

Boyd, Grossman, Lankford, Loeb, and Wyckoff (2009) identified five areas that should be addressed in quality teacher preparation programs: "program structure; subject specific preparation in reading and math; preparation in learning and child development; preparation to teach racially, ethnically, and linguistically diverse students; and the characteristics of field experiences" (p. 419). Student populations are becoming increasingly diverse, calling for teachers who can handle their educational needs (Roofe & Miller, 2013). Current pre-service programs should provide teachers with the necessary competencies and knowledge to address this diversity. Certain types of preparation programs produce teachers that are more effective and attain higher learning in their students. Such are programs that require a capstone project, heavily supervise student teaching, and provide numerous opportunities for practical learning (Boyd et al., 2009).

The way in which teachers are prepared prior to professional service can have an effect on student outcomes (Boyd et al., 2009; Roofe & Miller, 2013). This effect is a significant indicator of the need to develop appropriate training programs. Suitable preparation programs can result in the formation of competent teachers (Nandamuri & Rao, 2012). Harrington (2013) found that adjusting preparation programs according to the needs of the student population teachers will be serving has a positive effect in both

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their confidence and ability in the classroom. Effective training programs should focus significantly on pedagogical content, as well as opportunities for practice and self-reflection (Roofe & Miller, 2013).

Existing teacher preparation programs frequently encounter a variety of challenges. These programs can fail to completely prepare future teachers for effective performance in classroom settings with diverse student populations. The most frequent concern is that few teachers feel fully prepared from their pre-service training programs (Jackson et al., 2013). Prospective teachers worry that their pre-service educational experiences are not comprehensive enough to fully prepare them for practice (Roofe & Miller, 2013). In particular, new teachers often feel they are insufficiently prepared in classroom management strategies (Jackson et al., 2013; Roofe & Miller, 2013). Student teachers sometimes perceive that their instructors' competency and qualifications are inadequate, and they worry that this can have a detrimental effect on their preparation (Roofe & Miller, 2013). These lapses in preparation place increased dependency in the establishment of professional development programs.

Professional Development

Professional development can be described as workplace learning opportunities, which can either be formal or informal. It involves teachers learning how to promote the academic, cognitive, and behavioral growth of their students (Avalos, 2011). Teacher learning is a perpetual practice (Polk, 2006). Haug and Sands (2013) describe teacher professional learning as a process involving three factors: "interactions among teachers, students, and content; environments and resources; and student learning and teacher teaching practices" (p. 197). Through professional development, teachers can preserve

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their skills as well as learn how to address new challenges (Birkvad, 1997). This learning process requires teachers to examine their present abilities and vulnerabilities in order to find and develop strategies to become more effective educators (Avalos, 2011). In addition to promoting professional growth, in-service training programs also advance the personal and social development of teachers (Avalos, 1998).

There are different ways in which professional development can be implemented: coaching, lesson study, assessment interpretation, presenting academic content, and expanding instructional strategies (Hill, 2009). Informal professional development can consist simply of sharing experiences and strategies with peers, involvement in new projects, and problem-solving (Avalos, 2011). Formal in-service training can also take place in the form of seminars, workshops, modeling, or professional learning communities. Another method, known as the consultancy approach, allows teachers to build a relationship with a coach, with whom they can collaborate and review feedback based on classroom observations (Gregory et al., 2014). Additional techniques for professional development include self-reflection, content analysis, co-teaching, school-university partnerships, establishing collaborative networks, and introducing new technologies (Avalos, 2011).

Learning communities are a popular method of professional development. They can exist in various forms, including "critical friends groups, study groups, and teacher research collaboratives" (Wood, 2007, p. 284). These communities offer teachers opportunities to meet other professionals with whom they can share information and experiences (Birkvad, 1997). As part of learning communities, teachers work collectively to promote professional growth, by evaluating and solving everyday problems (Wood,

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2007). Learning communities also give teachers the opportunity to reflect on their own professional experiences, analyze them, and share their insight with their peers in a safe environment.

Professional development programs offer an opportunity to foster transformational learning in educators. These programs should focus on the traits and competencies of effective teachers (Antoniou & Kyriakides, 2013). Promoting characteristics that lead to effective teaching can encourage teachers to alter their behavior in favor of more competent practices. Professional development should also enable teachers to better connect with their students (Hill, 2009). According to Avalos (1998), teachers prefer professional development programs that focus on the way students think and learn. When teachers adapt instructional methods to their students' needs, learning improves in both reading and science, as well as in general (Avalos, 2011). In-service programs should offer teachers opportunities to improve both their instructional strategies and curriculum development proficiency (Avalos, 1998). The most important component of these training programs is to provide teachers with the tools they need to transfer this new knowledge into the classroom.

In order for professional development to be effective it is important to identify the specific needs of the teachers being trained, to be able address those teachers' deficiencies and weaknesses within the programs, and provide them with the tools they require to improve. Teachers should also be given the opportunity to voice their educational objectives and express what they would like to learn in these programs (Avalos, 1998). According to Haug and Sands (2013) teacher learning is most effective in school settings. At the time of developing professional learning programs, it is important to consider three

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factors: the way in which teachers learn, the culture and environment of the school where the program will take place, and the capacity in which mediating or collaborating agents will partake in the program (Avalos, 2011). For professional development programs to be successful, the school's culture must be conducive to learning, collaboration, and improvement.

The existing literature presents several studies that have encountered varying results from professional development programs. Proficient professional development has a positive effect in teaching practices, which influence student outcomes (Antoniou & Kyriakides, 2013). Professional development focused on enhancing classroom practices has stronger effects on both teacher practices and student performance (Hill, 2009). Student achievement improves after teachers participate in content-focused professional development (Boyd et al., 2009). Haug and Sands (2013) reported that engaging in a professional development lab had significant impact on teachers' instructional practices, as well as student satisfaction. Wood (2007) found that teachers participating in professional learning communities gained confidence and began to consider themselves as change agents for their students' learning.

Different kinds of professional development can have diverse effects on both teachers and students. Such programs can enhance student motivation, advance teachers' technical knowledge, or modify teachers' expectations for their students (Avalos, 2011). Birkvad (1997) found that teachers who participated in an in-service learning program in Denmark fared better professionally than those who did not participate. Furthermore, after participation in a professional development program, teachers felt better equipped to manage their classrooms (Jackson et al., 2013).

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Unfortunately, teacher learning programs have not been perfected, and can encounter a variety of difficulties. Professional development programs are usually not available to a large number of teachers (Hill, 2009). This denies a majority of teachers access to opportunities that will allow them to evolve professionally. Conversely, teachers who do have access to such programs sometimes participate in the least required amount of professional development (Hill 2009). This can be the case because professional development programs can occasionally become repetitive, relying mostly on lecture methods, lacking a diversity of instructional techniques, and missing necessary content material (Avalos, 1998). Teachers feel that professional development does not influence their instruction, and often have trouble transferring lessons from in-service programs into the classroom (Hill, 2009). This assumption calls for the right type of program that can have an effect on instructional practices, and enable teachers to feel that their learning experiences will result in productive outcomes.

Student Engagement

Productive teaching practices are often linked to student engagement as part of the learning process within the classroom. Engagement involves both an individual's behavior and emotional investment in a specific task, expressing his or her motivation and enthusiasm for the task (Reeve, Jang, Carrell, Jeon, & Barch, 2004). Academic engagement consists of both behavioral and psychological factors, which comprise students' actions and feelings regarding school-related activities (Strambler & McKown, 2013). It constitutes the way in which students participate and identify with academic learning (Strambler & McKown, 2013). There are two components in academic engagement: procedural engagement, which involves observable on-task behavior, and

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substantive engagement, which consists of a student's commitment to the learning task (Spanjers et al., 2008). Gregory et al. (2014) describe three dimensions of student engagement: behavioral, which is portrayed through active classroom participation; emotional, which is present in students' feelings regarding class activities; and cognitive, which is observed in the completion of assignments. Engagement during lessons uses students' intrinsic motivation to foster academic growth (Reeve et al., 2004).

There are several reasons why school engagement is important to effective teachers. It can have a number of positive outcomes on students' growth and academic performance, as students' engagement with content material leads to optimal learning (O'Connor, 2013). Classroom engagement is an important predictor of student outcomes, such as development, motivation, school completion, achievement in standardized tests, and favorable lifelong results (Reeve et al., 2004; Goldspink & Foster, 2013). "Active engagement in school is critical to student academic success" (Wang & Eccles, 2013, p. 12). When students are engaged they show focus, interest, and direction toward their own learning (Reeve et al., 2004). For such reasons, successful teachers continuously seek to attain engagement among their students.

The type of relationship between teachers and students has an impact on student engagement (Gregory et al., 2014; Strambler & McKown, 2013). Positive student-teacher relationships are developed when teachers offer appealing classroom activities and attempt to meet their students' needs (Gregory et al., 2014). Fostering these relationships is important for enhanced engagement. According to Wang and Eccles (2013), the way a school's environment accommodates to students' psychological needs drives student engagement. This shows that both teachers' behavior and school context influence the

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quality of their students' engagement. Teachers must therefore model the engaged learning style they expect to see in their students (Cullen, 2012). In order to promote engagement, teachers should adapt their instruction toward strategies that will draw students to become more involved in their learning (O'Connor, 2013). Educators should also utilize instructional strategies that engage students who have different learning styles (O'Connor, 2013).

Early academic experiences can influence future student engagement (Strambler & McKown, 2013). O'Connor (2013) describes a variety of strategies to promote student engagement, including: prompting students, eliciting and evaluating responses, group discussions, board participation, sharing circles, written responses, and physical movement. Teachers can also foster engagement by communicating actively with their students, being attentive to their emotional responses, and showing enthusiasm toward their interests (Reeve, 2004). Strambler and McKown (2013) listed instructional practices that support student engagement: social interdependence, which relies on cooperative learning to achieve academic success, status equalization, which involves balancing the academic position of all students, and relational and emotional support for interactions between teachers and students. In addition to promoting engagement, these practices can have a positive impact on student achievement.

There are different ways in which students can become involved in the classroom. Students' concentration during lessons, as well as the amount of times in which they express their voice and are active in the classroom are both relevant examples of engagement (Reeve, 2004). A valuable way of student engagement is class participation, through which students take responsibility for their own learning (O'Connor, 2013). Class

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participation also makes lessons more pleasant and is a preferred learning method by students.

Professional development programs can also be a powerful tool used to enhance student engagement. In a study by Gregory et al. (2014), teacher participation in professional development had a positive effect in student engagement in the classroom by improving relationships and interactions between teachers and students, as well as by introducing content material in ways that were more appealing to students. Strambler and McKown (2013) found that providing teachers with guidance regarding instructional approaches that promote student engagement led to an increase in their classroom involvement, as teachers began to spend more time working in groups with their students. These results show promise in the impact that teacher training programs can have in student engagement.

Student Perceptions

Students' perceptions of their teachers can be a powerful tool to understand what instructional strategies and teacher behaviors they find engaging. There are several factors that motivate students to focus on academic achievement and lead them to feel enthusiastic about their learning experience. Student perception surveys and questionnaires can allow us to better understand their beliefs about learning, motivational efforts, and academic goals (Dolan & McCaslin, 2008; Wubbels, 2005). A student's perceptions of their relationship with their teachers are linked to their feelings regarding their educational environment (Wubbels, 2005). Students can recognize when teachers care for them and respect them, such perceptions are positively related to student achievement (Shaunessy & McHatton, 2009). Students have the ability to describe

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teacher behaviors that they find positive and engaging (Shaunessy & McHatton, 2009).

This capability can allow researchers to measure practices that can promote learning and school engagement.

Gaps in Literature

The existing literature presents many gaps in relation to teacher training and preparation. There is not enough research to determine how to best prepare teachers to meet current educational challenges (Boyd et al., 2009). Further research will allow educators to identify the specific abilities, competencies, and behaviors that need to be developed both in new and existing teachers in order to improve the academic success of students. Additional studies depicting effective components of professional development programs would positively contribute to the teacher education field. Most importantly, education-related research taking place in Central America, and Panama specifically, is almost inexistent. Conducting studies regarding teacher training would present a significant contribution to the region.

Conclusion

Teacher training programs can be instrumental contributors to the advancement of education. Good teachers have considerable positive effects in student learning. It is therefore important to promote successful teaching through pre-service and in-service programs that encourage transformational learning in teachers. Effective teacher preparation and professional development programs can significantly impact student achievement and motivation. Teachers' instructional practices can also influence student engagement. Engagement is important because it leads to positive student outcomes and teacher perceptions. The educational system in Latin America would benefit from

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developing training programs that can improve teaching strategies, and subsequently students' academic gains.

Section IV

Contribution to Practice

The results of this study will be disseminated in the format of a program evaluation report. This report will be distributed to ProEd, the nonprofit organization that offers the program being evaluated (Teachers Teaching Teachers). These results will be presented to ProEd's Board of the Directors by the researcher. Each board member will receive a copy of the program evaluation report, and the researcher will offer a visual presentation during one of the regular Board meetings. The report will also be distributed to other interested parties, such as Panama's Ministry of Education, which endorses Teachers Teaching Teachers, as well as participating schools and other educational entities.

This study is designed as a program evaluation. The purpose of an evaluation is to answer specific questions, and then use the results to inform practice as well as the program's stakeholders (McDavid, Huse, & Hawthorn, 2013). The structured process used to perform a program evaluation is usually a case study. These results are then presented in a report that summarizes the strengths and limitations of a specific program or policy (McDavid et al., 2013). A program evaluation report is the ideal type of document to use for this study as it will thoroughly depict the program's impact, including its advantages and shortcomings.

Program Evaluation Report

Introduction

This program evaluation report examines the effects that participation in Fundacion ProEd's professional development program Teachers Teaching Teachers has

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on student perceptions, student engagement, and instructional behavior. The case study took place in Escuela San Jose de Malambo, which has consistently and repeatedly participated in ProEd's workshops. The report begins with a brief description of the organization's background, followed by the purpose of the evaluation. The research questions guiding the study are listed, as well as the study's methodology and design. Finally, the results of the evaluation are explained.

Background of the Organization

Fundacion ProEd is a non-profit organization that has the mission of improving Panamanian education by offering professional development opportunities for teachers. Through their workshops, ProEd coaches seek to guide teachers in developing instructional strategies that will lead to more dynamic lessons by involving students more deeply in the learning process. By modeling pedagogical practices that are based on collaboration, cooperative learning, and student interaction, ProEd coaches hope teachers will apply the same methods in the classroom, and therefore attain more engaged and increasingly participative students.

ProEd is made up of a very small team of six members, however, they are able to reach schools throughout the entire country and successfully bring fruition to four different programs that influence students, teachers, and principals in Panama. Fundacion ProEd values both teamwork and professional development for its own members, who model these values in their daily endeavors. A transformational leadership guides this organization, which aims first to transform their own members, followed by the teachers and principals they coach, then those educators' students, and ultimately Panama's educational system.

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The program that is being studied in this evaluation of the organization's main and biggest program Teachers Teaching Teachers. This program consists of three three-day workshops that add up to 80 professional development hours that are completed during the course of one school year. In these workshops teachers develop a professional learning community where they learn about important pedagogical issues, such as instructional methods, inclusion, and student engagement. The ProEd team follows up on the teachers' participation by involving their schools' principals and visiting their schools and classrooms. Teachers also have the opportunity to win model classrooms for their schools and other professional incentives, based on their performance and attendance in the workshops, as well as within their classrooms.

Purpose of the Evaluation

Through this study, one of Panama's current teacher professional development programs is evaluated. The link between training, instructional strategies, and student engagement is further examined. Evaluating the outcomes of existing teacher training programs will contribute to the development of future programs, as well as add to Panama's scholarship in the field. In addition, this evaluation depicts pedagogical activities and practices that are currently being used in classrooms in Panama.

The purpose of the evaluation is to determine whether Teachers Teaching Teachers meets its goal of encouraging teachers to develop more dynamic lessons rooted on cooperative learning, therefore enhancing student engagement in the classroom. Not only does this evaluation allow ProEd to assess the outcomes that their workshops have in the classroom, it offers a view of the instructional practices and techniques used by participating teachers. Moreover, this evaluation provides a measure of student

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engagement present in the classroom of TTT teachers, as well as a comparison to classrooms of teachers who have not participated. Most importantly, the evaluation also seeks to develop an outline of how students perceive the teachers who have attended ProEd's Teachers Teaching Teachers program. This information will be valuable to the organization.

The results attained through this evaluation will allow ProEd to assess the impact of their professional learning community. They will contribute to the improvement of the workshops' curriculum, because ProEd coaches will better recognize the practices that allow for desired outcomes, particularly student participation and engagement, and those that are not as successful. Thanks to this evaluation new and additional workshops may be replicated in other areas of Panama in order to reach an even wider population.

Research Questions

The research questions guiding this study are:

1. How does participating in a professional learning community through a professional development program impact instruction in a way that promotes student engagement?
2. How much student engagement is present in lessons imparted by teachers who have participated in this program?
3. What are the student perceptions of teachers who have participated in this program?
4. What are the differences in student perceptions of teachers, as well as in instructional methods and activities they use, who have never participated in TTT, teachers who have participated only one year, and teachers who have participated two or more years?

Research Design

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The research done for this evaluation is a case study, as it assesses the impact of a specific program (ProEd's Teachers Teaching Teachers) in one school. The school where the study took place is Escuela San Jose de Malambo, which was selected for convenience because they were open to take part in the study and because of the numerous times they have participated in ProEd's professional development programs. Twenty teachers were selected by the school's principal to be observed by the researcher during class time. Teachers who had participated in TTT for a number ranging one to five years were chosen to participate. This group included three teachers who had participated five years, one teacher who participated three years, five teachers who participated two years, and five teachers who participated only one year. Six teachers who had never participated in TTT were also observed.

The lessons that were examined by the researcher took place in middle school and high school classrooms. The researcher used an observation form (see Appendix A) to record the data for the study. In these forms, the researcher recorded the amount of minutes teachers spent in lecture, the amount of minutes students participated in class, and the amount of minutes students spent both working together and individually. In addition, the researcher tallied the specific instructional activities teachers chose for those lessons, as well as instructional methods.

The activities that were part of the observation forms are the following:

- Question/Answer
- Quiz/Worksheet
- Test
- Group response

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- Individual response
- Conferencing
- Observation by student

These were methods that were examined during the observations:

- Lecture (Teacher)
- Class discussion (Teacher–Students)
- Cooperative learning (Student-Student)
- Learning centers (Student)
- Independent Seat Work (Student)
- Partner Teaching (Student-Student)
- Guided Practice (Teacher-Students)

The other construct that was examined for this evaluation was the students' perceptions of their teachers. For this purpose, at the end of each lesson observed, student perception surveys (see Appendix B) were distributed to all the students in the classroom. This survey has been adapted from the MET Project for ProEd's use, and was shortened by the researcher for use in this study. The students were asked to complete the 12-item, Likert scale surveys based on the teacher whose class had just ended. The results from these surveys allowed the researcher to understand how students perceived their teachers, and compare the perceptions of ProEd teachers to those of non Proed teachers.

Data analysis. The data for this study was analyzed quantitatively through descriptive statistics, frequency tests, comparative means, and correlation tests. The relationships examined include the number of years attending TTT and each item in the survey, as well as the number of years attending TTT instruction strategies and class

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activities recorded during observation. The teachers observed in the study were divided into two groups, those who had participated in TTT one year or those who had never participated, and those who had participated between two to five years. Independent-Samples t-tests were run to test for differences between these groups in survey items, class participation, instructional strategies, and lesson activities.

Evaluation Results

A total of twenty teachers were observed in the study, ranging in participation in the Teachers Teaching Teachers (TTT) workshop from zero to five years. The sample of teachers studied had a mean of 1.83 years of TTT participation (Mean = 1.83, $SD = 1.759$). The student perception surveys students filled-in after each teacher's lesson was observed (see Appendix B) were analyzed through descriptive statistics. An overall quality score was assigned to teachers based on survey results. The average quality score among all observed teachers was 3.397 out of 5 (Mean = 3.397, $SD = 0.466$). The highest rated items in the surveys among all teachers were Item 12 "My teacher respects my ideas and suggestions" (Mean = 3.76, $SD = 0.562$) and Item 8 "In this class, we learn a lot almost every day" (Mean = 3.54, $SD = 0.684$). Refer to Table 1 for means of each survey item.

Table 1

Descriptive Statistics for Student Perception Survey

	<i>N</i>	Mean	Median	<i>SD</i>
Years in TTT	440	1.83	1	1.759
Quality	440	3.40	3.5	0.466
Item 1 "cares"	434	3.41	4	0.828
Item 2 "behavior"	436	2.83	3	0.852
Item 3 "respect"	435	3.40	4	0.813
Item 4 "busy"	439	3.43	4	0.767
Item 5 "explains"	435	3.42	4	0.834

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Item 6 "clear"	435	3.33	4	0.849
Item 7 "expand"	434	3.40	4	0.784
Item 8 "learn"	439	3.54	4	0.684
Item 9 "fun"	436	3.35	4	0.873
Item 10 "like"	434	3.43	4	0.810
Item 11 "share"	438	3.46	4	0.790
Item 12 "ideas"	439	3.76	4	0.562

The relationship between the number of years attending TTT and each survey item was tested using Spearman Rank-Order Correlations because years in TTT was an ordinal variable, while survey items were rated in a Likert scale (see Table 2). Three of the items tested had a significant correlation to years spent in TTT: Item 1 "My teacher in this class makes me feel like he or she cares about me" ($\rho = .099, p = .040$), Item 2 "My teacher makes learning fun" ($\rho = .161, p = .001$), and Item 12 "My teacher respects my ideas and suggestions" ($\rho = .097, p = .041$). These results indicate that teachers who had attended TTT for more years also received higher ratings for those three items.

Table 2

Correlations between Time in TTT and Survey Item

Number of years in TTT		Correlation		
		Coefficient	Sig. (2-tailed)	N
Spearman's rho	Number of years in TTT	1.000	.	440
	Quality	.039	.411	440
	Item 1 "cares"	.099*	.040	434
	Item 2 "behavior"	-.004	.936	436
	Item 3 "respect"	.060	.215	435
	Item 4 "busy"	-.069	.150	439
	Item 5 "explains"	.043	.370	435
	Item 6 "clear"	-.031	.521	435
	Item 7 "expand"	.037	.447	434
	Item 8 "learn"	.044	.362	439
	Item 9 "fun"	.161**	.001	436
	Item 10 "like"	.036	.457	434

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Item 11 "share"	.073	.128	438
Item 12 "ideas"	.097*	.041	439

*. Correlation is significant at the 0.05 level (2-tailed).

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

To understand if there were differences between the teachers according to the amount of time they had participated in TTT, they were divided into two groups. The first group included those who had never participated in TTT and those who had participated in TTT only one year. The second group included teachers who had participated in TTT two or more years (up to five years). These groups were used for both survey and lesson observation analyses.

The 12 items in the student perception surveys and a composite score for overall quality were compared for differences between the two groups of teachers. An independent samples t-test was run to search for differences. Statistically significant differences were found in five independent survey items and in the overall quality score given to each teacher between the two groups (0 or 1 year and 2 to 5 years). For all items with statistical significant differences, means were higher in the group of teachers who had attended TTT for 2 to 5 years. The overall quality score was lower for those with 0 or 1 years ($M = 3.35$) than for those with 2 to 5 years ($M = 3.45$) of TTT, a difference of .101 points. This difference was significant ($t = -2.283$, $p = .021$), indicating that TTT is related to higher overall quality ratings. While the reason for this is not known, it was consistent for some of the survey items.

One of the survey items that was found to be significantly different ($t = -2.445$, $p = .014$) was Item 1 "My teacher in this class makes me feel like he or she cares about me," with a higher mean ($M = 3.51$) for the teachers in the group with increased TTT

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attendance and a lower mean ($M = 3.32$) for those in the group with little to no TTT attendance. There was also a significant difference ($t = -4.129, p = .000$) between the group with more TTT experience ($M = 3.54$) and the group with less or no experience ($M = 3.19$) in means for survey Item 9 "My teacher makes learning fun." Differences were also found for survey Items 11 "My teacher wants us to share our thoughts" ($t = -2.297, p = .021$) and 12 "My teacher respects my ideas and suggestions" ($t = -2.145, p = .029$). The group with 0 or 1 year in TTT had a lower mean ($M = 3.71$) than the group with 2 to 5 years ($M = 3.82$). See Table 3 for reference.

Table 3

Independent-Samples t-test for Differences in Survey Measures between teacher groups

	Means		<i>T</i>	Df	<i>P</i>
	TTT= 0 or 1	TTT = 2-5			
Quality	3.35	3.45	-2.283	436.79	.021
Item 1 "cares"	3.32	3.51	-2.445	431.00	.014
Item 2 "behavior"	2.85	2.82	3.54	406.77	.726
Item 3 "respect"	3.36	3.46	-1.361	428.16	.172
Item 4 "busy"	3.46	3.40	.748	421.89	.456
Item 5 "explains"	3.38	3.46	-1.009	407.82	.317
Item 6 "clear"	3.34	3.32	.227	418.31	.821
Item 7 "expand"	3.35	3.46	-1.430	424.49	.152
Item 8 "learn"	3.50	3.59	-1.394	434.05	.161
Item 9 "fun"	3.19	3.54	-4.129	430.82	.000
Item 10 "like"	3.38	3.49	-1.446	429.36	.145
Item 11 "share"	3.38	3.56	-2.297	435.67	.021
Item 12 "ideas"	3.71	3.82	-2.145	433.28	.029

One lesson by each of the teachers who participated in the study was observed for student participation, instructional strategies, and class activities. A correlation test was run between each item observed during lessons (see Appendix A) and the variable for number of years teachers had attended TTT. There was only one statistically significant relationship found between the observed items and the number of years in TTT. The

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correlation was found in the class activity "conferencing" ($r = .514, p = .020$). See Table 4 for all correlations.

Table 4

Correlations between Observed Items and Years in TTT

Years Participated in TTT	Correlation		N
	Coefficient	Sig. (2-tailed)	
Years TTT	1.000	.	20
Grade	-.024	.920	20
Instruction	.106	.656	20
Individual work	.158	.506	20
Group work	.337	.146	20
Participation	-.244	.300	20
Times Participated	-.102	.669	20
Times Invited Participation	-.093	.696	20
Question and Answer	-.330	.155	20
Worksheet	-.001	.997	20
Test	-.253	.281	20
Group Response	-.179	.450	20
Individual Response	-.354	.125	20
Conferencing	.514*	.020	20
Observation	-.428	.060	20
Lecture	-.272	.247	20
Discussion	-.218	.355	20
Cooperative Learning	.155	.514	20
Learning Centers	.361	.118	20
Independent Work	.162	.495	20
Partner Teaching	.149	.531	20
Guided Practice	-.062	.795	20

*. Correlation is significant at the 0.05 level (2-tailed).

Descriptive statistics tests were run to examine what class activities were used most by teachers in each group. The activities mostly used by teachers with 0 or 1 year in TTT were question and answer, group response, and individual response. Teachers with 2

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to 5 years in TTT also frequently use group and individual responses, but rely less on question and answer and more on conferencing. Teachers with less TTT experience also use more lectures as an instructional strategy, while teachers with more TTT experience use more cooperative learning and partner teaching.

T-tests were run to search for differences between the two groups of teachers in the study (0 or 1 year in TTT and 2 to 5 years in TTT). Statistically significant differences between both groups were found for some of the instructional strategies and classroom activities observed. With teachers who had more TTT experience ($M = 15.22$), students spent significantly more time ($t = -2.742, p = .013$) working with each other than with teachers who had spent little or no time in TTT ($M = 5.45$). For the class activities observed, teachers with 0 or 1 year in TTT used question and answer ($M = 2.27$) and observation by student ($M = 1.36$) than teachers with 2 to 5 years in TTT. On the other hand, conferencing was used more by teachers with more time in TTT ($M = 1.00$) than by those with less time in TTT ($M = 0.09$), also showing statistically significant differences ($t = -2.631, p = .027$). See Table 5 for t-test values.

Table 5

Differences in instructional behaviors between levels of TTT (N = 20)

	Means		<i>T</i>	Df	<i>P</i>
	TTT= 0 or 1	TTT = 2-5			
Instruction	7.00	9.44	-1.04	18	.312
Individual	6.73	5.11	0.365	18	.720
Group	5.45	15.22	-2.742	18	.013
Participation	10.91	7.89	0.771	18	.451
Times Participated	9.18	6.89	0.771	18	.451
Times Invited Participation	4.64	3.33	0.886	18	.387
Question and Answer	2.27	0.89	2.221*	15.534	.042
Worksheet	0.73	0.78	-0.171	18	.866
Test	0.18	0.00	1.491	10	.167
Group Response	2.55	1.00	1.439	18	.167
Individual Response	4.00	1.78	1.815	18	.086

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Conferencing	0.09	1.00	-2.631*	9.194	.027
Observation	1.36	0.56	2.135	18	.047
Lecture	1.09	0.56	1.672	18	.112
Discussion	0.73	0.33	0.987	18	.337
Cooperative Learning	0.64	1.00	-1.057	18	.304
Learning Centers	0.09	0.44	-1.787*	12.16	.099
Independent Work	0.36	0.56	-0.612	18	.548
Partner Teaching	0.64	1.22	-1.126	18	.275
Guided Practice	0.27	0.22	0.247	18	.808

*Significant Levene's test for equality of variances, equal variances not assumed.

Notes: Sample sizes were TTT 0 or 1 (n = 11) and TTT 2-5 (n = 9).

Analysis of Results

The most significant results in the study include the relationships between number of years in TTT and items in the student perception survey, as well as the mean comparisons between both teacher groups. While correlation does not imply causation, there are many interpretations that can be made for the results where Items 1 ("My teacher in this class makes me feel like he or she cares about me"), 2 ("My teacher makes learning fun"), and 12 ("My teacher respects my ideas and suggestions") were significantly and positively related to number of years in the Teachers Teaching Teachers workshops. These three items are aligned to ProEd's teachings, where they encourage teachers to be caring and to apply fun learning techniques during lessons. These correlations could show that TTT does have an effect in these three aspects of teachers' behaviors and strategies. An alternative explanation could be that teachers who are more inclined to follow these behaviors also choose to attend TTT for more years.

The t-test results where groups of teachers were compared according to the number of years they had attended ProEd's TTT workshops (0 or 1 and 2 to 5) also showed statistically significant results. The overall quality score was higher for teachers with more TTT experience. In addition, the items from the student perception survey

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where teachers in the 2-to-5-year group received significantly higher scores include: Item 1 ("My teacher in this class makes me feel like he or she cares about me"), Item 9 ("My teacher makes learning fun"), Item 11 ("My teacher wants us to share our thoughts"), and Item 12 ("My teacher respects my ideas and suggestions"). Items 1, 9, and 12 are consistent with the correlations between years in TTT and survey items overall.

Teacher lessons were observed for student participation and engagement during instruction, as well as for strategies and activities used by teachers to foster those behaviors. The only statistically significant correlation found between number of years in TTT and the items observed during lessons (see Appendix A) was with the class activity "conferencing." While this is one of the activities taught and encouraged during TTT workshops, causation cannot be interpreted from this correlation.

The statistically significant differences that were found in the t-tests run between both groups of teachers include the following strategies and activities: question and answer and observation by student, for teachers in the 0 or 1 year group, and conferencing for teachers in the 2 to 5 year group. In addition, the students of teachers who had more TTT experience spent more class time working with each other than the students of teachers with less TTT experience. Since ProEd values cooperative learning and group work, these results are aligned to their beliefs and TTT workshop curriculum. While the study results do not offer an explanation, it could be inferred that prolonged participation in ProEd's Teacher Teaching Teachers workshops does influence teachers and the way they conduct their lessons.

While all teachers seem to rely mostly on individual and group responses, the teachers with little or no TTT experience use more question and answer as an

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instructional strategy. Regarding class activities, teachers with little to no TTT background are more likely to use lectures. The group of teachers who had participated in TTT for 2 to 5 years used more cooperative learning and partner teaching in their lessons. Cooperative learning is one of the pillars on which ProEd bases their workshops. These results can lead to the conclusion that more years of TTT do have an effect on the instructional strategies and classroom activities that teachers choose for their lessons.

After all statistical tests that were completed for this study, no significant relationship was found between participation in TTT and student participation in class. The participation variables observed, including minutes students spent participating in class, times students participated, and times teacher opened class for participation, did not present statistically significant differences between teachers who had participated less or more years in TTT, nor a relationship was found between those variables and number of years in TTT. Students of teachers with more TTT experience did not participate more in class, nor did those teachers invite students to participate more than students with less TTT experience.

The group with less TTT experience included both teachers who had never participated in ProEd's workshops and teachers who had participated only one year. The second group included teachers who had participated two, three or five years. Since the possible influences of ProEd's Teachers Teaching Teachers were found only on teachers who had attended the workshops two or more years, it can be inferred that teachers must return to the program in order for it to have truly lasting effect. Teachers who had only participated one year in the program had the same results as teachers who had never participated. An alternative explanation for this could be that teachers who share ProEd's

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values are more likely to return to the program, and therefore will also have a stronger inclination to use the techniques and strategies learned in the program.

This study has several limitations. The main limitation is that it is a case study, meaning that only one school served as setting, where a sample of twenty teachers were observed. The results from this one setting and sample cannot be generalized to other schools. This study also observed teachers who had participated in one specific program, so it cannot be generalized to other professional development programs in the area. The teachers who were observed for the study were selected by the school's principal, so it was not a random sample of teachers from the school. In addition, teachers knew ahead of time when they were going to be observed, so they could have planned their lessons accordingly, and purposely chosen activities that followed ProEd's guidelines and teachings. Since only one lesson by each teacher was observed, it would be difficult to generalize the results of one day of observation to their day-to-day work.

Considering all findings, observations, and limitations, it appears that ProEd's Teachers Teaching Teachers program does have a small but significant effect in teachers who have participated two or more years. However, further research and study needs to be done in order to have clearer results. It would be beneficial to replicate the study in some of the other schools that have participated in TTT to see if the findings are similar. Schools who have never participated in TTT could also be studied to make comparisons at a larger scale.

Summary

This program evaluation examined how participating in Fundacion ProEd's Teachers Teaching Teachers, a professional development program that provides

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workshops for teacher to learn alternative strategies and activities to use for instruction, influences teachers' lessons, as well as student engagement and their perception of their teachers. One school, Escuela San Jose de Malambo, was chosen to serve as a case study for this evaluation. Several teachers in this school have repeatedly participated in Teachers Teaching Teachers, which made the school a good setting for the study. Twenty teachers' lessons were observed to examine student participation, as well as the methods of instruction and learning activities that teachers chose to use during lessons. In addition, a survey was given to students after each lesson to learn about their perceptions regarding their teachers.

To analyze the results, teachers observed were divided into two groups: teachers who had participated in TTT one year or who had never participated, and teachers who had participated between two and five years. Some statistically significant differences were found between the two groups. Students had better overall perceptions of teachers who had participated in TTT two or more years, also feeling that those teachers made their classes more fun and cared more about them and their ideas. Teachers who had increased TTT experience also tended to use more conferencing, partner teaching, and cooperative learning, while teachers who had only participated in TTT one year or never at all relied more on observation and question and answer. While these differences are aligned to ProEd's teachings, the cause for these differences cannot be determined based on the results of this study.

Section V

Contribution to Scholarship

The target journal for this study to be published is *Teaching and Teacher Education*, a peer reviewed journal with an international perspective. The purpose of this journal is to "enhance theory, research, and practice in teaching and teacher education through the publication of primary research and review papers" (Elsevier, 2014, p.1). *Teaching and Teacher Education* is appropriate for this study due to the journal's international focus, as well as its openness to different disciplines and methodologies (Elsevier, 2014). This study would be a good fit to this journal's editorial aims.

The Influence of Sustained Professional Development on Panamanian Teachers:

Student Engagement and Perceptions

This case study examines the effects that participation in a professional development program can have on a teacher's instruction and on student engagement, as well as students' perceptions of their teachers. This article includes a literature review that contains a brief background of educational research in Latin America, and explores the impact of teacher training and the importance of student engagement. The methodology used in the case study is thoroughly described, followed by an analysis and discussion of the results that originated from this study.

Purpose of the study

Various studies have linked effective teaching practices to learning and student outcomes (Looney, 2011; Gallagher, 2004; Rockoff & Speroni, 2011). In order to create effective teachers, it is important to understand what constitutes successful teacher training programs, for both teacher preparation and professional development.

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Professional development programs offer teachers opportunities to continue learning, thus gaining new and positive instructional strategies and in turn improving student success (Boyd, Grossman, Hamilton, Loeb, & Wyckoff, 2009; Gansle, Noell, & Burns, 2012; Kyriakides, Creemers, & Antoniou, 2009). Some of the strategies that can lead to positive student outcomes are those that promote student engagement and participation (Goldspink & Foster, 2013; Wang & Eccles, 2013).

The purpose of this study is to evaluate the effectiveness of an existing teacher professional development program run by ProEd Foundation, and its influence on student engagement and perceptions. ProEd Foundation is a nonprofit organization in Panama that has established a professional learning community for educators in Panama's schools. As a part of this community they developed the Teachers Teaching Teachers program, which provides 80 hours of professional development every year through workshops offered throughout the school year (M. Cassino, personal communication, January 25, 2016). Encouraging interactive instructional practices that allow students to actively participate in class represents a significant goal for the ProEd Foundation, therefore increasing the amount of student engagement present during lessons. This program evaluation used a case study approach that looks at how participating in ProEd's Teachers Teaching Teachers influences student engagement, as well as how students perceive their teachers.

Literature review

For over 20 years, Latin America's educational system has undergone advancements that have led to changes in curriculum, evaluation, instruction, and organization (Vaillant, 2011). However, education in Latin America still has systemic

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gaps and room for growth. Because existing research is limited, investigators often encounter obstacles when conducting education-related research in the area (Chambers-Ju, 2014). Another challenge faced by Latin American educators, particularly in Panama, is the absence of efficient teacher training programs (Vaillant, 2011). Teachers often start their careers with insufficient classroom experience, which can mean that they are not fully prepared to begin teaching (Purcell, 1981). The development of successful teacher preparation and professional development programs would significantly contribute to the betterment of education in the region.

Teacher preparation programs are responsible for recruitment, training in both content and pedagogy, and ensuring classroom readiness, meaning that teachers are prepared to manage and organize a classroom (Gansle et al., 2012; Jackson et al., 2013). Moreover, teacher training programs must prepare teachers for newly diverse student populations, with varied backgrounds and learning needs (Boyd et al., 2009; Roofe & Miller, 2013). Effective preparation programs lead to the development of teachers who positively impact student outcomes (Boyd et al., 2009; Nandamuri & Rao, 2012). Unfortunately, these programs often fail to meet their goals and new teachers report feeling unprepared to enter the classroom (Jackson et al., 2013; Roofe & Miller, 2013).

In order to continue training teachers after they have begun their careers, it is important to offer professional development opportunities where teachers can continue learning the skills and knowledge required to be successful teachers. Professional development can take many forms, including workshops or lectures, presentations, mentoring, and observations, among others (Hill, 2009). A popular method for professional development is creating a learning community, which offers a safe space

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where educators can meet, share their experiences, and work together to find solutions for issues they may encounter in classrooms daily (Birkvad, 1997; Wood, 2007).

Professional development programs for teachers that have positive results are those that aim to enhance classroom practice, offer content-focused material, or use learning lab methods (Boyd et al., 2009; Haug and Sands, 2013; Hill, 2009). The effects of professional development are numerous and significant. Teachers participating in these programs can improve their knowledge, gain more confidence, increase student motivation, and even develop higher expectations for their students, as well as further advance professionally (Avalos, 2011; Birkvad, 1997). However, professional development programs face many challenges. Teachers often lack motivation to participate in these programs because they find them monotonous or having little influence in their teaching efforts (Avalos, 1998). In addition, educators who do which to engage in continuous learning do not have access to professional development or encounter a scarcity of such programs.

Academic engagement concerns students' motivation and enthusiasm in class, particularly the way they behave and feel about school tasks (Reeve et al., 2004; Strambler & McKown, 2013). School engagement involves the way students identify with, commit to, and participate in class activities (Gregory et al., 2014; Spanjers et al., 2008). Student engagement is significantly related to student outcomes, including academic achievement, motivation, graduation, and professional success (Reeve et al., 2004; Goldspink & Foster, 2013). For this reason, teacher training programs should aim to instruct educators on how to develop and encourage this behavior during lessons. A way to do this is by using interactive instructional strategies, establishing positive

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student-teacher relationships, and meeting students' psychological and learning needs (Gregory et al., 2014; Wang & Eccles, 2013). Students' perceptions of their teachers can help researchers understand the practices and behaviors that promote student engagement (Shaunessy & McHatton, 2009; Wubbels, 2005).

The conceptual framework guiding this study is the adult learning theory known as transformational learning. Transformative learning alters an individual's schemas and opens them for change (Mezirow, 2009). This learning process calls for reflection and analysis of one's personal views, leading to transformation of the individual's worldview (Merriam & Bierema, 2014; Poutiatine & Conners, 2012). Transformational learning involves a critical thinking process through which individuals evaluate their cognitions in order to make judgments (Mezirow, 2009). These learning experiences transform adults' beliefs, feelings, and ideas, and change the way they understand new knowledge (Merriam & Bierema, 2014; Poutiatine & Conners, 2012).

Methods

This research took the form of a case study. One school that had consistently participated in ProEd's Teachers Teaching Teachers was selected due to availability and convenience as the setting for this study. Escuela San Jose de Malambo has participated in ProEd's workshops for five years, which has allowed for a wide selection of teachers to be exposed to the program, as well as for several of them to attend multiple times.

Malambo is a school of around 400 students, ranging from preschool to high school.

Twenty teachers from the school were selected to participate in the study, including teachers who had participated in ProEd's Teachers Teaching Teachers one or more times and teachers who had never attended ProEd's workshops. Four of the teachers

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observed had participated in TTT three or more years, eight had participated one or two years, and six teachers who had no participation. For the purpose of the observation, middle and high school classrooms were selected. One lesson was observed per teacher, using an observation form (see Appendix A) developed by the researcher to account for instances of student participation and engagement, as well as classroom activities directed by the teacher. In these forms, the researcher recorded the amount of minutes teachers spent in lecture, the amount of minutes students participated in class, and the amount of minutes students spent both working together and individually. Instructional methods and activities were also recorded in the forms.

The activities that were part of the observation forms are the following:

- Question/Answer
- Quiz/Worksheet
- Test
- Group response
- Individual response
- Conferencing
- Observation by student

These were methods that were examined during the observations:

- Lecture (Teacher)
- Class discussion (Teacher–Students)
- Cooperative learning (Student-Student)
- Learning centers (Student)
- Independent Seat Work (Student)

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- Partner Teaching (Student-Student)
- Guided Practice (Teacher-Students)

This study also used a survey to evaluate the students' perceptions of their teachers. Surveys were distributed to all students in the classroom after each lesson observed. This survey has been adapted from the MET Project for ProEd's use, and was shortened by the researcher for use in this study. The students were asked to complete the 12-item, Likert scale surveys based on the teacher whose class had just ended. The survey asked questions that allowed students to express whether they felt teachers cared for them and their learning, and whether they took the time to explain concepts they did not understand. The purpose of the survey was for the researcher to understand how students perceived their teachers, and whether there was a difference in those who had attended TTT and those who did not have ProEd experience.

Data analysis. Several statistical analyses were run for this study, most of them included descriptive statistics, frequency tests, and comparative means. The sample was divided into two groups in order to run comparison tests for both the survey and observation variables: 0 or 1 year in TTT and 2 to 5 years in TTT. The first group had 11 teachers and the second group had 9 teachers. The tests run for these comparisons included Independent-Samples t-tests and Levene's Test for Equality of Variances. In addition, Spearman Rank-Order correlations were run for further survey analysis searching for relationships between the number of years attending TTT and each item in the student perception survey.

Results

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The twenty teachers that were studied had various levels of experience in ProEd's Teachers Teaching Teachers program, resulting in a mean of 1.83 years of TTT participation (Mean = 1.83, $SD = 1.759$). Eleven teachers had one year of TTT participation or no participation at all, and nine teachers had participated between two and five years. These two groups were compared for differences in both survey and observation results. Descriptive statistic tests were also run for the entire group.

Lesson observations were made to attain information regarding student participation in class, and the strategies and activities teachers used to encourage engagement. During observed lessons, teachers spent a mean of 8.10 minutes ($SD = 6.50$) in instruction. Students spent a mean of 6 minutes ($SD = 9.64$) working individually and a mean of 9.55 minutes ($SD = 8.62$), working in groups in those same lessons. The most popular class activities recorded during observed lessons were question and answer (M = 1.65, $SD = 1.60$), group response (M = 1.85, $SD = 2.46$), individual response (M = 3.00, $SD = 2.88$), and observation by student (M = 1.00, $SD = 0.92$). See Table 6 for reference.

Table 6

Means for Instructional Practices Observed during Lessons

	<i>N</i>	Mean	Median	<i>SD</i>
Years TTT	20.00	1.65	1.00	1.69
Instruction	20.00	8.10	6.50	5.24
Individual	20.00	6.00	0.00	9.64
Group	20.00	9.85	10.00	9.18
Participation	20.00	9.55	5.00	8.62
Times Participated	20.00	8.15	7.00	6.55
Times Invited Participation	20.00	4.05	3.00	3.25
Question and Answer	20.00	1.65	1.00	1.60
Worksheet	20.00	0.75	1.00	0.64
Test	20.00	0.10	0.00	0.31
Group Response	20.00	1.85	1.00	2.46
Individual Response	20.00	3.00	2.00	2.88
Conferencing	20.00	0.50	0.00	0.83
Observation	20.00	1.00	1.00	0.92

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Lecture	20.00	0.85	1.00	0.75
Discussion	20.00	0.55	0.00	0.89
Cooperative Learning	20.00	0.80	1.00	0.77
Learning Centers	20.00	0.25	0.00	0.44
Independent Work	20.00	0.45	0.00	0.69
Partner Teaching	20.00	0.90	1.00	1.17
Guided Practice	20.00	0.25	0.00	0.44

The data was analyzed for relationships between the variables observed in each teacher's lesson (see Appendix A) and the number of years they had attended TTT. For these correlation tests the only statistically significant result involved the use of conferencing as a class activity ($r = .514, p = .020$). The more time teachers had participated in TTT, the more they used conferencing in their lessons. Other correlations for these two variables were not statistically significant.

Another factor that was analyzed was the frequency in which observed activities and strategies were used by each group of teachers (zero or one and two to five years in TTT). Teachers in the first group (0 or 1 TTT years) used question and answer, group response, and individual response more often. Teachers in this group also gave more lectures as part of instruction. Teachers in the second group (2 to 5 years in TTT) used conferencing more often, as well as group and individual response. However, they used question and answer a lot less frequently than the first group. In addition, this group of teachers did not rely so much on lectures, and used cooperative learning and partner teaching as their most frequent instructional strategies. See tables below for the means for each activity and strategy used in groups 1 and 2.

Table 7

<i>Class Activities Means for Group 1</i>					
	N	Minimum	Maximum	Mean	Std. Deviation
Question and Answer	11	0	5	2.27	1.794

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Worksheet	11	0	2	.73	.647
Test	11	0	1	.18	.405
Group Response	11	0	8	2.55	2.697
Individual Response	11	0	11	4.00	3.286
Conferencing	11	0	1	.09	.302
Observation	11	0	3	1.36	1.027
Valid N (listwise)	11				

Table 8

Class Activities Means for Group 2

	N	Minimum	Maximum	Mean	Std. Deviation
Question and Answer	9	0	3	.89	.928
Worksheet	9	0	2	.78	.667
Test	9	0	0	.00	.000
Group Response	9	0	6	1.00	1.936
Individual Response	9	0	6	1.78	1.787
Conferencing	9	0	3	1.00	1.000
Observation	9	0	1	.56	.527
Valid N (listwise)	9				

Table 9

Instruction Strategies Means for Group 1

	N	Minimum	Maximum	Mean	Std. Deviation
Lecture	11	0	2	1.09	.831
Discussion	11	0	3	.73	1.009
Cooperative Learning	11	0	2	.64	.674
Learning Centers	11	0	1	.09	.302
Independent Work	11	0	2	.36	.674
Partner Teaching	11	0	2	.64	.809
Guided Practice	11	0	1	.27	.467
Valid N (listwise)	11				

Table 10

Instruction Strategies Means for Group 2

	N	Minimum	Maximum	Mean	Std. Deviation
Lecture	9	0	1	.56	.527
Discussion	9	0	2	.33	.707

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Cooperative Learning	9	0	2	1.00	.866
Learning Centers	9	0	1	.44	.527
Independent Work	9	0	2	.56	.726
Partner Teaching	9	0	5	1.22	1.481
Guided Practice	9	0	1	.22	.441
Valid N (listwise)	9				

T-tests were completed to compare means and find differences between groups 1 and 2 in the study for the instructional activities and strategies used in the lessons observed. Students of the teachers in the second group spent significantly more time working with each other ($M = 15.22$, $t = -2.742$, $p = .013$) than students of teachers in the first group ($M = 5.45$). There were also statistically significant differences in some of the class activities used by teachers in each group. Teachers in the first group used more question and answer ($M = 2.27$, $t = 2.221$, $p = .042$) and observation by student ($M = 1.36$, $t = 2.135$, $p = .047$) than teachers in the second group. Alternatively, teachers in the second group used more conferencing ($M = 1.00$, $t = -2.631$, $p = .027$) than by those in the first group ($M = 0.09$). Refer to Table 5 for t-test values.

After each observed lesson, students were asked to complete a student perception survey (see Appendix B) about the teacher who had just been studied. An overall quality score was assigned to teachers based on survey results. Descriptive statistics show that the mean quality score among all observed teachers was 3.397 out of 5 ($SD = 0.466$). The lowest rated survey item among all teachers was Item 2 "The behavior of students in this class is under control" (Mean = 2.83, $SD = 0.852$). The survey items with the highest ratings were Item 12 "My teacher respects my ideas and suggestions" (Mean = 3.76, $SD = 0.562$) and Item 8 "In this class, we learn a lot almost every day" (Mean = 3.54, $SD = 0.684$). Refer to Table 1 for means of each survey item.

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A Spearman Rank-Order Correlation test was completed to examine the relationship between each survey item and the number of years teachers attended TTT. Statistically significant correlations were found in three of the survey items. These items included: Item 1 "My teacher in this class makes me feel like he or she cares about me" ($\rho = .099, p = .040$), Item 2 "My teacher makes learning fun" ($\rho = .161, p = .001$), and Item 12 "My teacher respects my ideas and suggestions" ($\rho = .097, p = .041$). Teachers who had attended TTT for more years also received higher ratings for those three items. However, no causation can be implied from these results.

In order to compare the two groups of teachers previously mentioned (0 or 1 year in TTT and 2 to 5 years in TTT), independent samples t-tests were completed on the 12 items in the student perception surveys, as well as the composite score for overall quality. Five statistically significant differences were found between both groups, including the overall quality score that was assigned to each teacher and four of the items in the survey. Means were higher for the second group of teachers (those with more time and experience in ProEd's TTT program) in the items that showed statistically significant differences.

The survey items with statistically significant differences were the following: Item 1 "My teacher in this class makes me feel like he or she cares about me," Item 9 "My teacher makes learning fun," Item 11 "My teacher wants us to share our thoughts," and Item 12 " My teacher respects my ideas and suggestions." The overall quality score was lower for those in the first group (0 or 1 year in TTT) of teachers ($M = 3.35$) than for those teachers in the second group (2 to 5 years in TTT) ($M = 3.45, t = -2.283, p = .021$). The difference between the two scores was statistically significant, indicating that TTT is

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related to higher overall quality ratings. However, the reason for this difference cannot be implied from the results. See Table 11 for additional information, including means and p-values of statistically significant items.

Table 11

Differences in Survey Measures between Both Teacher Groups

Measure	TTT = 0 or 1 year			TTT = 2 to 5 years			Mean Diff.	T	P
	N	M	SD	N	M	SD			
Quality	238	3.35	.507	202	3.45	.408	-.101	-2.283	.021
Item 1	234	3.32	.880	200	3.51	.750	-.194	-2.445	.014
Item 9	236	3.19	.948	200	3.54	.736	-.340	-4.129	.000
Item 11	237	3.38	.834	201	3.56	.727	-.173	-2.297	.021
Item 12	238	3.71	.621	201	3.82	.477	-.115	-2.145	.029

Note: only significant findings are included in the table. Differences are significant when p-value is below .05 level.

Discussion

The data analysis for this study led to several statistically significant results. Two groups were compared: teachers who had participated in TTT workshops only one year or not at all, and teachers who had participated in TTT workshops between two and five years. Teachers in the first group (zero or one year) were more likely to use question and answer, observation by student, and lectures. Teachers in the second group (two to five years) were more likely to use conferencing, cooperative learning, and partner teaching. In addition, students of teachers in the second group spent more time working with each other in the lessons observed than students of teachers in the first group.

ProEd's Teachers Teaching Teachers workshops are based on cooperative learning. The instructional methods that are instilled in their teachers include partner

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teaching and group-based work. Collaborative learning is the foundation of the methods and exercises that take place in TTT workshops. Teachers who attend this program are encouraged to use the same strategies and activities in their own lessons. Furthermore, ProEd encourages its teachers to be caring toward their students and to apply fun learning techniques during lessons. While the results found in this study cannot be considered as an explanation, it can be inferred that continuous exposure to ProEd's TTT program can have an effect on teachers' preferred methods of instruction and choice classroom activities.

Some items in the student perception surveys had statistically significant correlations with participating an increased number of years in TTT. Those items were Items 1 ("My teacher in this class makes me feel like he or she cares about me"), 2 ("My teacher makes learning fun"), and 12 ("My teacher respects my ideas and suggestions.") When groups one (zero or one year in TTT) and two (two to five years in TTT) were compared for differences, teachers in group two were scored higher in the following items: Item 1 ("My teacher in this class makes me feel like he or she cares about me"), Item 9 ("My teacher makes learning fun"), Item 11 ("My teacher wants us to share our thoughts"), and Item 12 ("My teacher respects my ideas and suggestions"). Items 1, 9, and 12 are consistent with the correlations between years in TTT and survey items overall. In addition, teachers in the second group had a higher overall quality score than the teachers in the first group.

While causation cannot be implied from those results, when these items are compared to ProEd's values and workshop curriculum, it can be inferred that participation in TTT does have an effect in these aspects of teachers' behaviors and strategies. These

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specific behaviors include being caring, choosing fun activities, and valuing their students' thoughts and ideas. An alternative explanation for these results could be that teachers who are more inclined to follow these behaviors also choose to attend TTT for more years. Therefore, either they already used these strategies before attending TTT, or they share the same values as ProEd and that is why they choose to continue attending their workshops.

It is important to note that no statistically significant relationship was found between the number of years teachers participated in ProEd's TTT and the level of student participation in the lessons observed. Students of teachers with more TTT experience did not participate more in class, nor did those teachers invite students to participate more than students with less TTT experience. Since statistically significant results were only found on teachers who had attended TTT for two or more years, a conclusion that can be drawn is that prolonged or continued participation in the program is necessary in order to positively influence teachers. Because of this information ProEd might consider increasing the minimum amount of time required to participate in their program in order to have a more lasting effect.

Several limitations can be listed in this study. The first limitation is that this is a study where only one school was examined; therefore, these results cannot be generalized to other schools in the program. The second limitation is that the school's principal chose the sample of teachers who were observed as part of this study. This means that teachers were aware that they would be observed and knew which particular lessons would be observed. Consequently, teachers could have prepared their lessons ahead of time and used strategies that they do not usually employ in their lessons, but that followed ProEd's

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teachings. Moreover, only one lesson by each teacher was observed, which may be considered a very small sample. A third limitation of this study is that it examines only the effects of one specific professional development program and cannot be generalized to other similar programs. Further research can be made in order to make this study's results more complete. The study can be replicated to other schools that have participated in the program. It could also be replicated with teachers who have participated in other professional development programs in order to make comparisons between various existing programs.

Conclusions

When the study's results and discussion are taken into account, it can be concluded that ProEd's Teachers Teaching Teachers program does influence the teachers who have participated at least two years. Teachers who attend ProEd's workshops for two or more years are perceived to care more about their students, to use more fun activities in their lessons, and to encourage students to share their ideas more often. In addition, teachers with increased TTT experience also use more group work in their lessons, encouraging more partner teaching and cooperative learning. However, there was no difference in student class participation according to the number of years that teachers attended TTT. In order to have a more lasting effect, ProEd may want to increase the length of their professional development program and make changes in the curriculum that may influence student participation more strongly.

Section VI

Scholarly Practitioner Reflection

The main way that the dissertation process has influenced me, is that it has reminded me of the value of good teachers. This is a notion that I have always known, but as I left teaching to become a college counselor, it has not always been present in my mind in the past few years. Teachers have the opportunity to create lasting effects in their students, to cultivate in them skills that they may be useful for a lifetime, to build deep bonds and relationships that may encourage and motivate students to reach their highest potential. While I continued to work with students as a counselor, providing guidance during the college application process, I do not believe my work had as lasting an effect as it is possible to achieve as a teacher.

As I did research in order to write my dissertation's literature review, I was reminded of the power of effective teachers. I read time and time again about how qualified and effective teachers had positive and significant correlations with students' outcomes and academic performance. Teachers who are well-trained, focus on their students' learning needs, and use activities that promote academic engagement can help their students achieve successful results in school, as well as in personal and professional aspects of their lives. As I read, re-read, learned, and re-learned all this information, I realized that I also wanted to contribute to the possible success of students. For my dissertation study, I had to visit a school and observe twenty teachers' lessons. I saw them interact with their students, I saw students reacting to them, I saw students accomplishing academic triumphs in those classrooms. I observed learning in process. I experienced

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education from its most basic root. I realized that I needed to be a part of this process. That is why I decided to go back to teaching.

This school year (Panama's school year starts in March and ends in December) I began to teach part-time an English Writing class to high school seniors. On my first day back in the classroom, as I saw the eager faces of my new students (who also happened to be the first group of students I ever taught in my previous life as a fourth grade English teacher), I knew that it was the place where I belonged and that teaching was my true calling. While I continue to experience the joys and struggles of being a teacher, I know I made the right decision. I owe this decision entirely to my dissertation. If I had not read all those research articles about the influence of effective teachers, if I had not observed all those classrooms and lessons, I would not have sought to go back to teaching.

Throughout my work as a teacher, a counselor, a leader, and a scholar, the dissertation process has highlighted the importance of research and data. Research is what guides all existing theories in any field. In the field of education, where there is so much at stake, research is of utmost importance. Every decision I make as a professional and a scholar is based on data. Data-driven decision-making is a pillar of my life that has emerged due to the dissertation process and the influence of this doctoral program in general. As a teacher, I look for common standards that my students should reach at the end of the school year based on research. As a college counselor, not only do I look at each university's statistics, but I collect my own data. I record each student's GPA, test scores, schools where they applied, and then schools where they were admitted. When making decisions with future students and helping them choose to which schools they should apply, I look back to that data and use it as reference. Not only is it extremely

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helpful, but it allows me to do my job more efficiently. As a scholar, I find myself constantly searching for new data to add to my knowledge. I read articles that are related to my field of work and study. I look for studies that sought to answer questions that I often ask myself. I find it difficult to see myself as a leader, even though I know that I am one in many occasions. But I do think of myself as a prospective leader, or a leader in the making, and as such I know I need to gather all the information that is available from experience, research, and data, in order to use it to guide others and myself in making the best decisions needed for growth and success. This I know thanks to my work in the dissertation, and to my time as a doctoral student at MU.

Another way the dissertation has had a significant impact in me, both as a scholar and a leader, is that it brought to my attention the lack of existing research and data in Panama and Latin America. In Panama, there is few research studies are available from any field, even less research in the social sciences, and hardly any regarding education. In Latin America as a region, there is not a large amount of research offered from the field of education. If you want to focus on specific educational issues in the region, the research is even more scarce. As I sought to provide a background of education in Panama and Latin America for my dissertation's literature review, I recognized that the lack of studies and regional data are probably large contributors to many of the issues and problems we encounter daily in the educational field. In order to overcome these challenges, we must work hard to fill this gap and to provide the necessary information that is required.

This unfortunate situation made me realize that in order to become a good leader and have a positive impact in my country, I have to contribute as a scholar to this aspect.

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I need to accept that it is my responsibility and continue my work as a researcher and educator. It is my duty as an educational leader and citizen to keep doing research, to find the areas and issues where research is more needed, and go out to the field and gather the required data. It is my job to write about what I discover and to publish articles about education in the region. Thanks to working on my dissertation, I have encountered the problem. Now it is up to me to become part of the solution.

My work for my dissertation has also led me to acknowledge that I have to dedicate more to teaching. Whether it is in elementary, secondary, or higher education, I need to play my part and contribute to Panama's educational needs and help shape my country's future professionals. I need to devote my energy and resources to the development and growth of education in the region. After studying the effects of professional development in teachers and their students, I understand that continuous learning and study are necessary for success and effectiveness. As a leader, a teacher, and a scholar, I must always keep learning, I must always seek progress, I must always aim for higher goals. After I attain my degree, I would like to refocus my career so that I can become a leader in the educational field in Panama, and make an impact in my country - however small it may be.

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Appendix A

Teacher Number: _____

Grade: _____

Subject: _____

Time Records	Class Activities (number of times used in lesson)	Instruction Methods (number of times used in lesson)
Minutes spent in lecture/instruction:	Question/Answer	Lecture (teacher)
Minutes students working individually:	Quiz/Worksheet	Class discussion (teacher-students)
Minutes students working with each other:	Test	Cooperative learning (student-student)
Minutes students participating in class:	Group response	Learning centers (student)
	Individual response	Independent seat work (student)
Times students participated:	Conferencing	Partner teaching (student-student)
Times teacher opened class for participation:	Observation by student	Guided practice (teacher-students)

Notes:

VITA

Isabel Kourany was born in Panama on February 4, 1987. After graduating high school, she studied at Florida State University, where she attained a Bachelor of Science in Psychology in 2008. In 2009, she received a Master of Education from Harvard Graduate School of Education under the program of Human Development and Psychology.