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The Impact of Recruiting and Retaining Teachers with Advanced Degrees on Student Learning

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The Impact of Recruiting and Retaining Teachers with Advanced Degrees on Student Learning

Introduction

Recent trends show a significant increase in the number of postgraduate students in education programs worldwide (Organization for Economic Cooperation and Development, 2012). The National Center for Education Statistics reports that 52% of the teachers nationwide have earned a master's degree (National Center for Educational Statistics, 2021). Rockoff (2004) suggests, "raising teacher quality may be a key instrument in improving student outcomes" (p. 252). Many countries and some states within the United States, require teachers to hold advanced degrees (National Center for Teacher Quality, 2017; Teacher Education in Europe, 2008). Others, like Texas, do not. The purpose of this study is to examine whether the percentage of teachers with advanced degrees on a campus makes a significant impact on the variance in student achievement within south central Texas. Additionally, it is the purpose of this paper to examine the strategies of school leaders in south central Texas who have demonstrated success in the recruitment and retention of teachers with advanced degrees.

Research Questions

In order to explore the relationship between level of teacher degree attainment and student success, two central research questions were developed:

RQ 1: What is the relationship between teacher attainment of advanced degrees and student outcomes as measured by student performance on standardized achievement tests in south central Texas?

RQ 2: What are the recruitment and retention strategies of principals who have been successful at recruiting/retaining teachers with advanced degrees in south central Texas?

THE IMPACT OF RECRUITING

Literature Review

One of the main goals identified in the No Child left behind Act (U.S. Department of Education, 2005) and supported in the subsequent Every Student Succeeds Act (Every Student Succeeds Act, 2015) is to have “highly qualified teachers” in core academic subjects in every classroom. The act defines highly qualified teachers as those who have a bachelor’s degree and have completed state certification or licensure. The United States Department of Education (2005) moves beyond the bachelor’s degree, as they have identified three main measures of qualification to include years of experience teaching, advanced degree holding, and subject matter expertise.

In 1966 the Coleman Report (Coleman, 1966) attempted to measure the impact of teacher contributions on student learning. Since that time numerous other studies have added to our knowledge of the impact that teachers have on student learning. For example, Teddlie and Reynolds (2000) found a substantial correlation between teacher quality and student outcomes. Similarly, Chetty et al. (2011) found that teacher quality has a substantial impact not only on students’ academic achievement, but also on life-long success as measured by career earnings.

Strong et al. define educational effectiveness as “the value a teacher adds to gains in student learning as measured by standardized test scores” (2011, p. 379). Earning a master’s degree allows teachers to acquire specialization, qualify for a leadership role, or acquire more content knowledge for their current job (Akkerman & Bakker, 2011; Snoek & Volman, 2018).

Rivkin et al. (2005) describe the challenges in examining the contributions that teachers have on student learning due to the unknown impact of so many variables. They found that differences in teacher quality may impact student gains up to 7.5% of the total variation in achievement outcomes (Rivkin et al., 2005). Clotfelter, Ladd, and Vigdor, (2007) found clear

evidence that teachers with more experience are more effective than those with less experience. Goldhaber and Brewer (1997) noted significant gains in student achievement in mathematics for students who were taught by teachers who had a master's degree.

Chang et al. (2020) examined the influence of teachers' degrees (level and discipline) on student achievement, and they found that students benefitted when their teachers possessed a content-area advanced degree. Additionally, teachers and schools show a substantive effect on student outcomes (Teddle & Reynolds, 2000). Similarly, DeAngelis and Presley (2011) conducted a regression analysis examining 212 elementary/middle schools and 34 high schools in Chicago in which they found that highly qualified teachers are a necessary component of school improvement.

Collier (2013) conducted an analysis of early elementary students (grades 1-3) and found that teacher master's degree attainment made a significant positive contribution to student achievement in math. Similarly, at the middle school level, Harris and Sass (2011) found that teachers' master's degree attainment was positively associated with student achievement. At the High School level, Betts et al. (2003) conducted a study of students in San Francisco and found that students who worked under teachers with advanced degrees tended to have higher achievement scores than their peers. Snoek et al. (2018) interviewed teachers who had attained graduate degrees to ask them if they felt their training improved their teaching. Teachers with a master's degree in the subject they teach subjects stated they could better address their students' needs as a result of their coursework (Snoet et al., 2018).

Goldhaber and Brewer (1998) in their examination of data collected by the National Education Longitudinal Study found that holding a master's degree in the specific content area being taught was important. This understanding of the importance of content and pedagogical

THE IMPACT OF RECRUITING

knowledge is reflected in the College Board recommendations for Advanced Placement (AP) teachers including: three years of experience, meet highly qualified status, and hold a professional teaching license in a field related to the course they are teaching. The AP classes expose a student to college-level studies and teacher's need to understand fully the subject and the exam to support student success. Zeiger (2019) noted the College Board suggestion that AP teachers should hold an advanced degree similar to that of a college professor (Zeiger, 2019).

It is important to note that not all researchers have found a relationship between the percentage of teachers holding advanced degrees and student achievement. DeAngelis and Presley (2011) found highly qualified teachers to be a necessary, but not the sole component of school improvement. White et al. (2011) note a shift away from the acquisition of master's degrees to focused professional learning to prepare the most qualified teachers. There are also a number of studies in which teacher degree attainment did not demonstrate a significant impact on student achievement results (Clotfelter et al, 2007; Shuls & Trivett, 2015). For example, Ladd and Sorenson (2015) conducted a longitudinal study examining the impact of teachers' with advanced degrees in North Carolina and found little to no impact on student learning. Clotfelter et al. (2007) found that the teacher's degree in the field that they teach matters more than degree level. This emphasis on content-specific training is supported by Monk (1994) who found a positive effect on student learning by high school math and science teachers who took advanced content and pedagogical courses.

Unfortunately, much of the literature reveals that historically disadvantaged students are more likely to attend schools which are staffed by less-experienced and less-trained teachers as compared with students in more advantaged neighborhoods (Kalogrides & Loeb, 2013; Lankford, Loeb, & Wyckoff, 2002). DeAngelis and Presley (2011) caution, "Given the

THE IMPACT OF RECRUITING

association of both teacher qualifications and school climate with student outcomes, it appears that schools serving low-income and minority student populations may be doubly disadvantaged” (p. 86). Lankford et al. (2002) found non-white students in New York were more than four times as likely to be taught by teachers who were not certified in the subject they teach and three times as likely to be taught by teachers who had failed their licensure exams. DeAngelis and Presley further found, “predominately African-American schools, both low and moderate SES, and predominately Latino schools stand out as employing teachers with significantly lower academic qualifications than more racially/ethnically integrated elementary/middle schools” (2011, p. 103). This data should be of concern to all members of our educational system as we attempt to address institutional inequalities.

In Finland it has been policy for years that all teachers should possess a master’s degree. Following suit, many other European nations have also raised the expectation that all teachers should possess a master’s degree because it would lead to more effective teaching and learning in schools (Teacher Education in Europe, 2008).

There are some states in the U.S. that have developed policies which promote teachers’ acquisition of master’s degrees. In a 2017 report there were 19 states which required an advanced degree for teachers who were either seeking or renewing a professional license (National Center for Teacher Quality, 2017). Some states also have put into policy that teachers with a master’s degree must receive extra pay for the advanced degree (National Center for Teacher Quality, 2017). Connecticut, Maryland, and New York require all teachers who wish to stay in good standing with their license to have a master’s degree (National Center for Teacher Quality, 2017). Additionally, there are 15 states that require a master’s degree for teachers seeking an advanced license (National Center for Teacher Quality, 2017). Nittler (2019) sampled 124 large

THE IMPACT OF RECRUITING

districts nationwide and found that all but 8% compensate their teachers differently if they have a master's degree and 58% of the districts have a salary structure designed to pay teachers more as they earn additional credits and degrees. Thus, many countries around the world and some states within the United States require teachers to hold advanced degrees. Texas does not. This study was conducted in order to examine whether advanced degree attainment makes a significant impact on the variance in student achievement within south central Texas.

Quantitative Methodology

Sample

The quantitative sample for the study includes all public and charter schools within the south-central region of the state of Texas. This includes a total of 702 public and charter schools. Schools in this study represent a wide range of urbanicity classifications, including urban, suburban, and rural schools. Testing data is available for students in grades 3-12. Schools in the sample represented a wide range of Socio-Economic Status (SES), ranging from 3% of students qualifying for free or reduced lunch at the most affluent school in the study, to 100% of students qualifying for free or reduced lunch at the least affluent school in the region (Texas Education Agency, 2021).

Variables

The independent variables included: teacher advanced degree attainment, SES, and school size. The dependent variables were: student achievement on state standardized tests in English Language Arts, Math, Science, and Social Studies. It is important to note that the regressions included school size and SES as these are two variables that have historically been linked with student achievement, thus it is important to consider whether any change in student achievement exists apart from these two factors. It was hypothesized that the independent

variables would make a significant independent contribution to the variance in the dependent variable, student achievement.

Statistical Analysis

First, simple correlational analysis were conducted in order to identify whether a relationship exists between teacher graduate degree attainment and student achievement on state level standardized tests in the areas of English Language Arts, Math, Science, and Social Studies. Next, the authors conducted four separate OLS Linear Regression analyses as noted below:

- a) Regression #1: Dependent variable: Percent of students meeting expectations on statewide English Language Arts standardized achievement test; Independent variables: SES, school size, and percent of teachers with master's degrees.
- b) Regression #2: Dependent variable: Percent of students meeting expectations on statewide Math standardized achievement test; Independent variables: SES, school size, and percent of teachers with master's degrees.
- c) Regression #3: Dependent variable: Percent of students meeting expectations on statewide Science standardized achievement test; Independent variables: SES, school size, and percent of teachers with master's degrees.
- d) Regression #4: Dependent variable: Percent of students meeting expectations on statewide Social Studies standardized achievement test; Independent variables: SES, school size, and percent of teachers with master's degrees.

Quantitative Results/Findings

Results of the correlation analyses are shown in Table 1. It is important to note here that within these analyses, a rise in the percentage of teachers on campus with advanced degrees was significantly correlated with a rise in achievement on standardized tests for each of the 4 content

THE IMPACT OF RECRUITING

areas. This includes a positive correlation between teachers with advanced degrees and the percent of students meeting expectations on statewide achievement tests in English Language Arts ($r=.204, p<.01$). There was a similarly positive correlation with the percent of students meeting expectations in Math ($r=.117, p<.01$), Science ($r=.210, p<.01$), and Social Studies ($r=.335, p<.01$) (See Table 1).

Step-wise regression analyses were conducted next in order to examine the effect of the three independent variables upon the dependent variable of student achievement in each of the four content areas. Variables were entered into the regression model via simultaneous entry. For each of the 4 regression models, the results formed a linear combination that explained a significant portion of the variance in student attendance as noted below. For English Language Arts, the model explained 58% of the variance ($R=.760, p<.01$, with an adjusted R Square of .576). The regression model examining Math achievement explained 40% of the variance ($R=.636, p<.01$, with an adjusted R Square of .401), the third regression model explained 52% of the variance in Science achievement ($R=.725, p<.01$, with an adjusted R Square of .524), and the fourth regression model explained 44% of the variance in Social Studies achievement ($R=.671, p<.01$, with an adjusted R Square of .444)..

Within the first regression model, the percentage of teachers with graduate degrees ($\beta=.082, p<.05$) made less of a contribution to the variance in student achievement in English Language Arts than SES ($\beta =-.723, p<.01$) but was stronger than school size ($\beta =.063, p<.01$), and all three variables were significant (See Table 2). In the second regression model, the percentage of teachers with graduate degrees ($\beta =.005, p=n.s.$) did not make a significant contribution to the variance in student Math achievement, while SES ($\beta =-.612, p<.01$) and school size ($\beta =.072, p<.05$) did (See Table 3). In the third regression model, the percentage of

THE IMPACT OF RECRUITING

teachers with graduate degrees ($\beta = .073$, $p < .05$) made a statistically significant contribution to the variance in student science achievement, as did SES ($\beta = -.264$, $p < .01$) and school size ($\beta = .172$, $p < .01$) (See Table 4). Finally, in the fourth regression model, the percentage of teachers with graduate degrees ($\beta = .185$, $p < .051$) made a statistically significant contribution to the variance in student social studies achievement, as did SES ($\beta = -.437$, $p < .01$) and school size ($\beta = .302$, $p < .01$) (See Table 5).

Regression analyses thus confirm that for three of the four content areas examined, the percentage of teachers with advanced degrees is significantly positively related to student achievement in English Language Arts, Science, and Social Studies. While correlational analysis indicated a significant positive relationship also exists between teachers with advanced degrees and student achievement in math, this relationship did not rise to the level of significance within the regression model.

Qualitative Methodology

Having obtained affirmative results from the quantitative analysis in three out of the four content areas, the researchers next turned their attention to examining the kinds of things that principals can do to recruit and retain faculty members with advanced degrees. In order to answer RQ2, interviews were conducted with principals of schools demonstrating the highest percentage of teachers with advanced degrees. 702 schools within the same region in south central Texas (the same schools from the quantitative analysis) were ranked based on the percentage of faculty members who have attained an advanced degree. This yielded identification of the top 1% ($N=7$) of campuses which had the highest percentage of faculty members with advanced degrees in the region. Researchers contacted these seven principals, inviting them to be interviewed for the purpose of this research study, and all seven agreed.

THE IMPACT OF RECRUITING

The sample is a criterion sample (Johnson & Orso, 1986; Maxwell, 1996). Principals were invited to be interviewed based on meeting a specific criteria: being in the top 1% in the region for percentage of faculty members with advanced degrees. Seven principals were interviewed for this study. Among these seven principals five were female and two were male. One of the respondents was African American, two were Hispanic, and four were White. The number of years of administrative experience ranged from 11 to 18, and the age of respondents ranged from 45-57 (see Table 6).

In order to answer RQ2, researchers drafted seven semi-structured interview questions to help guide conversations with each of the principals. Interviews were recorded and transcribed for data analysis. Following data transcription, responses were organized sequentially by respondents answers to each question, then analyzed for recurrent themes within each question. Coding was conducted by three independent researchers to ensure that the coding was viewed through multiple perspectives. Because the researchers had no pre-conceived notion of what they would find, this portion of the research can accurately be described as following a constructivist design (Denicolo et al., 2016). The researchers attempted to apply meaning to the research findings based on the participants' own responses that emerged endemically from the data.

Qualitative Results/Findings

The qualitative portion of this study was conducted to answer RQ2, which asked: What are the recruitment and retention strategies of principals who have been successful at recruiting/retaining teachers with advanced degrees? Qualitative data analysis yielded five themes in answer to this question. Principals of schools with the highest percentage of teachers with graduate degrees in south central Texas:

- 1) employ a focused hiring philosophy,

- 2) foster a learning organization,
- 3) encourage teacher autonomy,
- 4) participate in higher education partnerships, and
- 5) support graduate degree attainment.

Theme 1: Employ a Focused Hiring Philosophy

One of the most surprising findings that emerged from the data was how few of these principals focused specifically on hiring teachers with advanced degrees. Five of the principals indicated they did not focus on advanced degree attainment when hiring teachers. For example, one respondent stated, “That’s interesting because I haven’t paid attention to that... When I’m going through and looking at applicants, the first thing I’m looking at is not whether they have an advanced degree or not” (R3). Another principal agreed saying, “I’m a little bit embarrassed to say this to you, I don’t know who has advanced degrees. ... no, that is not a qualifier or a disqualifier for me when we are talking about recruiting teachers” (R4). Two respondents indicated they specifically did strive to hire teachers with advanced degrees. As one principal stated,

It’s a priority, even more so with the COVID slide. Now we know there’s a huge achievement gap, even more so than before, so we have to have the most qualified teachers to be able to work with the students, because we’re going to have to narrow the achievement gap as closely as possible (R1).

Another principal agreed stating, “I would say that when reviewing the applications of candidates those are things that do stand out, especially an MAT. In the instances of teachers who...may be available to offer dual enrollment or dual credit courses” (R5).

THE IMPACT OF RECRUITING

While principals were not unanimous in whether or not they were looking specifically for teachers with advanced degrees, all seven principals provided specific responses regarding the type of teacher they were looking for. As one principal put it, “We all want to have highly trained and qualified teachers to help our students in order for them to be successful” (R1). When thinking about hiring processes, one principal spoke about the need for dual credit teachers,

I would say that when reviewing the applications of candidates those are things (advanced degrees) that do stand out, especially a MAT (Master of Arts in Teaching). In the instances of teachers who are may be available to offer dual enrollment or dual credit courses graduate work is required. So, our teachers with advanced degrees are able to offer dual enrollment/dual credit in History, Math, and English. They have to have at least 18 hours in graduate classes in order offer these classes and be the subject matter expert. But also, beyond just an advanced degree it is important to me that the candidates have critically responsive pedagogy and they have to really care about kids. (R1)

These principals were also very involved in the recruiting process. For example, one principal talked about specifically recruiting a highly skilled teacher to come to her campus. Here is the story as she relayed it, “About two years ago I interviewed someone I wanted as a math teacher, but she could not be released from her contract because it was after her contract deadline. She was a female of color in another school district. I really wanted her. It just so happened that my AP worked with her prior to becoming an assistant principal. So, I just asked him, hey can you periodically keep in touch with her, send her a text, see how she’s doing. Even if it’s just twice a year. I really wanted to get her here. Sure enough, I was able to get her here this year” (R6).

These principals looked specifically for subject matter experts who would fit well with the existing faculty members. As one principal stated, “One of the things I’m looking for when I look at resumes and applications are people who are experts in their field” (R6). Another principal added, “I’m going to look and see the work that you do and how you fit into the role that you’ve been hired, be it instructional coach, be it classroom teacher, be it a language teacher, whatever that is. So, do they have to have the qualifications? Yes, but at the end of the day I’m going to look for the best fit” (R3). One principal reflected, “I do know that myself, my AP, and my academic coach, we thoroughly look at candidates’ applications. But I do think there is a correlation between advanced degrees and student achievement” (R1).

Theme 2: Foster a Learning Organization

The second theme that emerged from the data was that these principals foster a learning organization. As one principal put it, “We’re a learning organization, and when you have high caliber teachers, we have master teachers on our campus, we have to continue, what can we do to help grow them?” This principal went on to describe a district level initiative called the Teacher Leader Academy which fosters teacher learning and leadership. As she described it,

We have cohorts...where they go through and learn how to be a teacher leader on campus. They go through five different touch-backs throughout the school year, half day sessions...they take on and choose a risk-taking opportunity of something they see within our campus, to help lead (R3).

Fostering a learning organization can also involve supporting teachers as they innovate. As one principal put it,

I have a teacher right now who is always coming up with ideas, “I was reading about this, I was learning about this. Can we give it a shot? Have you heard about this?...So if a

THE IMPACT OF RECRUITING

teacher comes in and says, “I have an idea.” I’m like, let’s go for it, let’s try it...we look at it, we take it apart, go for it. If it doesn’t work, I’ll take the heat for it. (R2)

Another principal spoke specifically about work going on at her campus with helping teachers learn how to implement guided reading. In her own words,

I had a teacher come to me and say, “I really want to try the guided reading model.” And I was like – yes let’s do it. So, we talked it through, I hooked her up with an instructional coach at the district level. We did a quick book study about the meat and potatoes of it, and then we tried it” (R4).

Several of the principals spoke about leading a campus-wide book study. For example, one principal stated, “So we do a lot of work particularly around coaching teams. We use, this year we’ve really dug into the work of Elena Aguilar and *The Art of Coaching Teams*” (R7).

Another principal talked about an upcoming book study on her campus, “And they’re going to be doing a book study, reading Brene Brown, *Dare to Lead*, and so that is super exciting to me” (R3).

Several principals made the connection between their learning philosophy and hiring teachers with advanced degrees. As one principal put it, “I think our philosophy and belief about learning does encourage people to pursue advanced studies or advanced degrees” (R5). Finally one principal summed up the importance of leading a learning organization this way, “I think we just attract people who are true life-long learners, and they’re passionate about the work, being an educator. This is their true calling” (R3).

Theme 3: Encourage Teacher Autonomy

The third theme that emerged from these interviews was that these principals encourage teacher autonomy. For example, one principal stated,

I don't like to be micromanaged because that conveys a lack of trust and a lack of competence. So, I just make those assumptions that you're competent and I can trust you and I think people elevate to that, and they don't want to let you down... It gets them to take ownership which is a win/win. I can't micromanage them, high school is too big. You can't stay on top of everything, you have to trust your people and coach them along the way... It makes people feel valued (R6).

Another principal made a similar comment, "Oh, I just got butterflies because this is a huge one to me... We've worked really hard on this campus to build trust and to build that culture...but what retains teachers is trust and autonomy. They need a high level of trust, they need autonomy" (R4). A third respondent added, "Our teachers have creative freedom in developing the learning experiences for our students" (R5).

As one principal articulated, giving teachers autonomy means saying yes to teachers' ideas as often as possible. As she put it,

You know, I learned this from my mentor, but I think my default answer when I get asked something, even if it scares me a little bit, is yes, followed by questions to try to understand or work through some details, so I try to make "yes" my default. And this is what I've heard that they got a lot of no's at previous schools. (R7).

She went on to say, "I'm not going to go into a classroom and be like, it's day 25, you should be on this unit. So, they get a lot of creative freedom" (R7). Another principal discussed her hiring practices,

I think one of the reasons it's like that is because the interview questions are pretty rigorous and it's understood at the interview that I'm looking for people who don't want to be told what to do. I make it clear that I'm looking for people with initiative and they

THE IMPACT OF RECRUITING

have their own thoughts of that is best practice in the classroom and how to make learning happen in the classroom. And so, I suspect, I don't know this for a fact that it is what happens is ... I guess with a master's degree. (R4)

Theme 4: Participate in Higher Education Partnerships

The fourth theme that emerged shed an interesting light on how these schools might have ended up in the top 1%. Although many of the principals stated that they did not specifically look to hire teachers with advanced degrees, what they did do was to participate in partnerships with local universities. One principal spoke about a partnership to develop STEM teachers. She stated, "The STEM field teachers are what we're focused on and I've worked directly with (local public university) and told them - Hey guys I really need your teacher prep program to create future technology computer science teachers, so thankfully they are creating it right now. But I started that 4 years ago...I know it takes a while." (R6).

Another principal spoke about a longstanding partnership his campus had with a local private university. "(Our campus) is fortunate to have been chosen as a professional development school by (local private university), which brings us many unique opportunities. These include teacher training on research-based teaching methods and school reform, student participation in seminars on a wide variety of topics, and the participation of (university) interns who are studying to earn a Masters of Arts in Teaching" (R5). Three other principals spoke about similar partnerships with the local private and public universities, and one principal spoke about a memorandum of understanding they had with a local community college.

Theme 5: Support Graduate Degree Attainment

The final theme that emerged from speaking with these principals was that they create an environment that is supportive of current teachers going back to college to pursue an advanced

degree. As one principal put it, “Since I’ve been here, I’ve encouraged, you know, recommended - Hey, you should go get your master’s. So we have a lot of teachers that are either currently in graduate programs, or they just finished last year” (R1). Another principal added some details of how he supports individuals earning a master’s degree while teaching. He said,

It’s a lot of work. There’s already so much on their plate. I want them to have a good, true, authentic experience, which will help them in the long run, on whatever campus they are assigned to. So, to help them I communicate a lot. We just work out a schedule. I am more than willing to meet with them and talk with them outside of the instructional day, yeah just work within their schedule, whatever it is they need (R4).

One principal summed up his support of teachers earning advanced degrees by quoting Dr. Seuss,

I am very big on, ‘the more you know, the more you’ll grow, the farther you’ll go.’ You know, the Dr. Seuss saying. I’m big on that. So, I’ve always encouraged my teachers to keep moving on. I think, you know, the younger group of teachers know, I mean I’m obviously older, but it was the high school diploma, then it was get your college degree. Now it’s like, you know what that’s not good enough anymore. Now it’s your master’s. The education system has changed so much, that they need to keep improving on that and working on that” (R2).

Discussion

Discussion of Quantitative Results

The first, and perhaps most important finding from the quantitative portion of this study is the confirmation that based on the comprehensive analysis of the 702 schools in south central Texas, having teachers with advanced degrees matters. This was confirmed in the correlational

THE IMPACT OF RECRUITING

data for all four subject areas. While the regression results were not significant in the area of math, it is important to note that the relationship exists for each of the subject areas, and that relationship is positive in every instance. To put it simply, there is a positive correlation between the percentage of teachers with advanced degrees on student achievement in English Language Arts, Math, Science, and Social Studies. The regression analyses add two important variables – socioeconomic status and school size, each of which has historically demonstrated strong impact on student achievement. Within the regression models, the percentage of teachers with advanced degrees demonstrated a significant contribution to the variance in student achievement in English Language Arts, Science, and Social Studies.

Discussion of Qualitative Results

The principals' interviews yielded five themes regarding their hiring philosophy, fostering a learning organization, encouraging teacher autonomy, developing higher education partnerships, and supporting graduate degree attainment. Each of these themes provide insight into the philosophy and practices of campus leaders who have successfully hired and retained teachers with advanced degrees.

The principals did not state that an advanced degree was a required hiring attribute, rather they describe the knowledge and dispositions of highly qualified teachers. Although hiring teachers with advanced degrees did not appear to be intentional, fostering a learning organization and encouraging teacher autonomy were articulated goals of all of the participants. As R4 stated, "I'm looking for people who are willing to grow." Another principal stated, "We're a learning organization, and when you have high caliber teachers, master teachers, we have to continue to help them grow" (R2).

These principals described creative approaches they have taken to develop and maintain a culture of continuous improvement and collaborative learning which they believe has resulted in higher teacher retention rates and job satisfaction. R4 described the importance of autonomy, “you have to respect their expertise and give them voice and choice because people that are masters in their craft and really good at it don't want to be told what to do and they don't want you to keep them in a box.”

Two of the schools specifically stated that their university partnerships have brought more highly trained teachers and more teachers with advanced degrees onto their campus. The partnerships also supported teachers seeking an advanced degree by creating cohorts of teaching colleagues who attend classes together and are able to focus their assigned projects on initiatives that would directly improve their campus. These partnerships are mutually beneficial to the campus and the university. The principals also state that students, teachers, and the community all benefit, as well.

All of the principals viewed themselves as mentors and coaches for their teachers. They all connected individually with their faculty and listened to their individual goals. The principals encouraged their teachers to continue their education and they found ways to support them through flexible scheduling and duty modifications. All of the principals described the importance of truly knowing their faculty and understanding what their aspirations are. They also helped the teachers to find opportunities to connect their university work to the needs of the campus. Through creative support and individualized coaching, these principals have cultivated a campus culture of continuous growth and professional development.

Recommendations

THE IMPACT OF RECRUITING

Based on the findings from this research, we offer the following questions and recommendations for school leaders and hiring officials to consider as they enter into the hiring process and develop campus plans for teacher retention.

1. Do you provide opportunities for teacher leadership on your campus? The principals in this study spoke about the positive impact of teacher leaders had on their campus. One of the schools designed an entire program to support teacher leadership. Recommendations: Identify opportunities for teachers to design and implement an initiative to address an identified need on your campus. Facilitate opportunities for teachers to present best practices at faculty meetings based on areas of strength you have observed during walk-throughs.
2. Does your district offer opportunities for teachers to develop leadership skills while still serving as a classroom teacher? Several of the districts in this study have created a “grow your own” model of leadership development by establishing in-district leadership academies. Recommendation: Nominate your teachers to participate in mentoring/coaching opportunities so that they can develop their leadership skills. Consider opportunities at the district level, with educational service centers, local universities, or with professional organizations.
3. Do you take time at faculty meetings to foster a learning environment? Principals in this study intentionally use their faculty meeting times to model effective teaching practices, discuss best practices, and work collaboratively on accomplishing campus goals. Recommendation: Consider how you use Professional Learning Communities, faculty meetings, and department meetings to foster a learning environment and allow teachers to fully engage in continuous improvement efforts to support student learning outcomes.

THE IMPACT OF RECRUITING

4. Does your district collaborate with a local university to create opportunities for teachers to pursue an advanced degree or attend targeted professional development? In this study several of the principals reported the positive impact that university partnerships have had on their campus. Recommendation: Reach out to university partners in your area to explore potential collaborations, including: placing student teachers on your campus, grant submissions, and providing teachers with the opportunity to earn a master's degree with a cohort of colleagues.
5. Do you actively encourage faculty members to pursue advanced degrees? Once enrolled, do you support them in their efforts? Principals in this study went out of their way to identify strong teachers and support them in their career goals. Recommendation: Talk to your teachers, ask them what their career goals are. Sometimes a small word of encouragement from a campus principal can make all the difference in a teacher choosing to pursue an advanced degree.

Limitations

As with any mixed-methods research there are certain limiting conditions which may impact the analysis of the qualitative data. The researchers have taken care to identify and address any limitations to the analysis and have attempted to mitigate the impact. The analysis of the qualitative data rests ultimately on the thematic development determined by the researchers. Due to this fact, researcher bias has been discussed and framed by the research team. Each of the researchers entered this study as professors, former administrators, and members of the community. The team identified their research agendas and stated their assumptions prior to beginning the data analysis. A further limitation of this study is the small sample size of the interview participants. Although this study does not seek generalizability as a goal, the

THE IMPACT OF RECRUITING

researchers did explore the issue of transferability (Lincoln & Guba, 1985). Rich discussions and multiple-levels of theme development help to create results which may have applicability to other contexts.

Conclusion

This research explored the relationship between the percentage of teachers with advanced degrees on a campus and student learning outcomes as measured by state standardized tests. Using staff and student demographic data along with student achievement results from 702 public schools in south central Texas, the research team ran correlational and regression analyses to identify whether there was a relationship between teacher advanced degree attainment and student learning outcomes. The results indicate that the percentage of teachers with an advanced degree made a statistically significant contribution to the variance in student outcomes in English Language Arts, Science, and Social Studies. Subsequent interviews were conducted with principals of the top 1% of schools with the greatest percentage of teachers with advanced degrees in south central Texas. Analysis of these interviews yielded five themes that contribute to the successful hiring and retention of teachers with advanced degrees. It is hoped this study may serve to inform principals who are preparing to hire and hope to retain a high-quality teaching staff, particularly teachers with advanced degrees.

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