

Cultural Influence and Teacher Quality: Perceptions of Self-Efficacy and Self-Permission in Panamanian Educators

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ABSTRACT

In recent years, Latin America has experienced unprecedented growth in education coverage resulting in the need for the development of a proficient workforce to sustain and manage its rapid change and improvement. This study investigates the relationship between teacher quality and positive psychology, and more specifically, the importance of how cultural norms impact the way that individuals perceive their professional abilities. Specifically, an ordinal scale, statistical analysis of survey-based data of more than 300 Panamanian teachers was used to determine generalized attitudes regarding respondents' perceptions of self-efficacy and self-permission. The study finds that, in Panamanian culture, teachers' perceptions of self-efficacy are closely aligned with their experience in the classroom, while their perceptions of self-permission are associated with professional qualification.

Key Words: *Cultural Norms, Self-Efficacy, Self-Permission, Teacher Perception, Teacher Quality.*

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I. INTRODUCTION

Over the last 50 years, education coverage has expanded in Latin America and the Caribbean at a rate rarely previously experienced [1]. Such a trajectory of advancement would cause even the most resource-rich of countries to struggle; however, for a region of the world where most countries are still developing and face significant infrastructure and economic frailties, this has strained human capital and financial resources.

At the same time, the importance of teacher quality in the educational process has been the focus of considerable research over the past decade. While the impact is likely to vary by classroom and school, good teachers can regularly advance student achievement by 1.5 years in a single academic year, while students taught by their weaker peers often master only 50% of the curriculum in the same timeframe [2]. Children who are exposed to just a single "highly effective" teacher during their time in primary school are more likely to go on to study at university, earn better incomes, and live in better neighbourhoods [3]. Understandably, critics point to the complexity of accurately classifying what characterizes "highly effective" teaching, especially when factoring in cultural variances. Still, few would argue that such professionals are critical, especially in a region that is seeking to develop a skilled workforce to sustain and manage rapid change and improvement. Any concerted effort to provide universal and equitable education requires a significant investment in precisely defining what constitutes a "highly effective" teacher followed by the creation of a professional teaching force capable of delivering this new paradigm.

The country of Panama serves as a microcosm of Latin America in that it has experienced a significant positive transformation over the past decade, but still struggles with a societal imbalance in economic stability, access to resources and quality of education. A comprehensive curriculum of structured learning outcomes is inconsistently delivered across the country, as is any regular formal review of student progress [4]. Compounding this lack of curriculum, instructional time is often limited due to a lack of resources, teachers, and finances to operate schools, as well as high rates of teachers' absenteeism [5]. Given the critical importance of teacher quality [6], the need to overcome these challenges is fundamental to achieving sustained improvement in the Panamanian education system [7].

The following study set out to investigate the relationship between teacher quality and the rapidly increasing body of research into positive psychology, and more specifically, growing recognition of the importance of how individuals perceive themselves and how this perception can impact personal, emotional, and professional performance [8]. We sought to understand how self-efficacy and self-permission impacts teaching performance in Panama, to ultimately improve teacher quality as a conduit to enhancing students' educational experience more generally.

II. LITERATURE REVIEW

Teachers in Panama

Close to 75% of teachers in Panama are female, have a low socio-economic status, are ageing, and tend to be academically weaker than other professionals [24]. While observable characteristics (age, gender, level of education, years of experience) do not necessarily have an impact on student learning [25] [26], teachers' knowledge has been directly connected to student achievement [27], and is consistently correlated with student learning [1]. Of equal concern is that in many areas, finding well-qualified teachers to work in exigent environments remains a problem where the median percentage of fully trained teachers at the primary level dips as low as 58% in some areas [28]. Compounding this reality, teachers that demonstrate capability often leave to work in schools where they enjoy better resources and have the potential to earn higher salaries. The possibility, therefore, that the students who face the greatest barriers to get to school on a regular basis, will be met by a professional that is qualified and experienced is relatively low [29]. These students are likely to be taught by inexperienced teachers with limited pedagogical training, and who cannot be determined to be of high quality when compared to global comparators [1].

Alongside this, teacher motivation to improve classroom practice is often minimal for several reasons; and without it, systemic improvement is unlikely. Research over the past decade has consistently indicated a decline in the number of candidates entering the profession, and a compression of teacher salary scales, globally [30].

Overcoming these challenges is in no way a small undertaking. Teacher salaries account for 15% of total public spending in Latin America, and therefore any serious adjustment in core wage structure or significant investment in new workforce is likely to bear a considerable burden on economies that are already frail [1]. Additionally, teaching remains a highly unionized profession across the region and therefore any significant alterations of the status quo involves a considerably political and complex process [1].

Despite these hindrances, there is not a teacher shortage in Latin America [29]. Employment in teaching has several unique elements which serve as attractions for many workers. There is a strong general perception that teachers enjoy stability of work, fewer weekly working hours and considerably more vacation time than other positions [1]. As a result, there is a ready pool of applicants for teaching positions in the region, but they do not always include individuals who are attracted to these teaching positions for the right reasons. Consequentially, students experience a very traditional instructional methodology and a teacher-centered ideology. More challenging and complex instructional methods are often beyond the capability and work ethic of many teachers and so collaborative working environments, critical thinking, problem-solving, and engaging classroom activities are often missing from schools [1].

Teacher Quality

These challenges are not unique to the region, however. Concepts of instructional quality and student learning have recently become a focus of global discussion [8] [9] as high-quality teachers have been directly associated with successful national education systems and economic buoyance [10]. While there is agreement that more effective teachers can significantly improve both short and long-term life success for students [11] [12] [13] [14] teacher quality is often poorly defined and measured in a variety of ways, with little consensus as to what specific characteristics are most important. More clarification is required in determining whether teacher quality is the same as teacher effectiveness, or if student achievement is improved by the quality of the teacher or the quality of the learning experience [15].

What is not in doubt, however, is the fact that a variety of teacher characteristics including educational background, experience, certificate status, perseverance, work ethic, and even teacher evaluation score, are the teacher dispositions most often associated with improved student achievement [16] [13] [17] [18]. Using any single measurement of teacher quality, therefore, does not fully appreciate the complex range and depth of skills and social foundation that successful teachers typically infuse [19]. From an Anglo-American perspective, effective teachers improve a broad range of student outcomes [20]. While these targets may not be an immediate priority or even wholly applicable in developing countries, what is apparent is that any attempt to measure teacher quality is best designed combining multiple measures of performance rather than focusing on one single indicator [21]. The specific importance of each contributing factor is likely to differ significantly based on cultural variation and nuance. Certainly, quantifiable data on student achievement lie at the heart of these measures, but emerging evidence indicates that these statistics only have value as a part of a broader set of contextual factors.

Interestingly, research has shown that while the qualities of understanding learners, subject matter knowledge and professionalism were common traits associated with teacher quality, it was the teacher dispositions of having a patient, caring, and kind personality, and the ability to develop trusting, productive, relationships that were the most valued qualities in teachers [22]. While less developed countries value teacher professionalism more strongly than their developed peers, even after considering grade level, gender, public or

private schooling, and cultural variation, all stakeholders prioritized dispositions of care more than any other competency [22].

This research is contrary to practice in many developing countries, however, where the investment remains in professional qualification and certification to improve teacher quality [31]. While research has shown that uncertified teachers have negative effects on student gains [32] [25], several other studies claim that teacher academic qualification has little or no positive influence on student achievement [33] [34] [35] [14]. It is a reasonable assumption, therefore, that a focus on teacher disposition and confidence has the capability to yield similar if not stronger positive impacts on student learning than merely seeking to improve teacher qualification.

Self-efficacy and Self-permission on Teacher Quality

Given this importance, the development of ‘positive psychological capital’ [36] to improve teacher quality holds significant potential. Drawing from Bandura’s theory of self-efficacy [37], positive psychological capital (PsyCap) associates a combination of the resources of hope, optimism, efficacy, and resilience with improved employee attitudes, behaviors, and performance [38]. As social cognitive theory also highlights the connection between individual competence and the surrounding environment [39], the theory is especially apt in Panama where teacher confidence is often low, both individually and in the profession more generally [1]. As such, a strong argument can be made that teacher self-efficacy lies at the very core of improving dispositions of care and character in the country [23].

Given this theoretical foundation, it is not surprising that self-efficacy has consistently been linked to the teaching profession. The process of learning, and by extension, teaching, is closely linked to the formation of trusting relationships and mastering a complex and dynamic environment [40]. Teachers who display a positive attitude and strong commitment towards the teaching profession consistently demonstrate higher levels of performance and greater productivity [41].

This conceptual framework is not complete however, as it does not readily account for the strong social and cultural influence of the region, and the impact this has on developing a culture of teacher respect, which is associated with higher levels of teacher efficacy [39]. For an accurate assessment to be made, regarding Panama, the concept of self-permission must also be addressed. Nico Rose’s theory of self-permission [43] refers to the beliefs that a person has regarding whether they are socially and politically permitted to realize long-term goals. Closely linked to efficacy, self-permission integrates social norms and expectations as a form of stereotype threat to performance. In other words, even if an individual has the self-confidence to believe that they can be a successful teacher, they are unlikely to realize their full potential if they do not believe that they have the right to do so. This has added importance if we accept the premise that building a strong relationship (care and character) with students is a fundamental key to teacher quality. In a country such as Panama, where societal roles are often based on a strong sense of cultural hierarchy, respect for teachers, as well as their own sense of ‘self’, is often low and as a result does not cultivate an environment where professional student/teacher relationships are easily developed.

III. RESEARCH QUESTIONS

The purpose of the study was to determine the perceptions of self-efficacy and self-permission of Panamanian teachers.

This study aims to answer the following questions:

1. What are the perceptions of teachers in Panama on self-efficacy and self-permission?
 - a. What is the relationship between self-efficacy beliefs and teaching experience in teachers in Panama?
 - b. What is the relationship between self-permission beliefs and teaching experience in teachers in Panama?
 - c. What is the relationship between self-efficacy beliefs and teaching qualification in teachers in Panama?
 - d. What is the relationship between self-permission beliefs and teaching qualification in teachers in Panama?

THEORETICAL FRAMEWORK

Despite being more than twenty-five years old, Albert Bandura’s concept of self-efficacy remained a seminal foundation for our understanding. Bandura [44] asserted that self-efficacy beliefs determine how people feel, think, are motivated and behave. More recent studies have refined these characteristics, adding the complexity of societal and contextual influences on professional self-efficacy, but the descriptors still serve as useful today [45]. In an educational context, this speaks to teachers’ conviction in their own ability to teach efficiently and effectively [46].

Additionally, we found a critical cultural element missing from the notion of self-efficacy to address these specific societal influences, and Rose’s concept of self-permission served as a potential complement. Self-permission is a distinct construct to self-efficacy; where efficacy refers to an individual’s belief in their ability to accomplish established goals, self-permission addresses whether or not the individual feels that they have the

authority or approval required to realize the goals [43]. In other words, am I 'allowed' to have the autonomy to be a good teacher, rather than do I have the required skillset?

Self-permission focuses on the importance of belonging, a central component of Panamanian culture. The need to belong serves as powerful intrinsic motivation, especially when this is coupled with a lack of social acceptance [47]. Professional belonging also impacts an individual's sense of neuroticism, anxiety, and sensitivity to rejection [48]. It is apparent, given the strength of the societal structure and the importance of the role of the family within Latin American culture, that being a good teacher is likely to be impacted by both a sense of belonging and sense of worth. This type of autonomous behavior has been directly linked to offering more engaging learning experiences in the classroom [49], as well as lower levels of anxiety and stress and higher levels of well-being [50].

Research paradigm

The research paradigm (Figure 1) of this study was founded upon a pragmatic worldview, and more specifically, on the role of learning through dynamic experiences and practical application. The paradigm is closely aligned with Dewey's assertion that learning is a social and interactive process, and that those who are learning function best in an environment where they can experience and interact with the curriculum as active participants [51]. The ontological foundation of the research design drew from the concept of realism and the fundamental worldview of the study.

Figure 1



Research Paradigm

IV. METHODOLOGY

Data collection was based on a survey given to establish and compare general patterns regarding respondents' self-efficacy and self-permission. The statistical analysis was centered around an ordinal scale using the frequency of answers to questions as a basis for the presentation of generalized attitudes.

Instrumentation

The study involved the development of a five-level, Likert-style survey. The survey was created using a blend of instruments for teacher self-efficacy and Rose's instrument for determining self-permission. The original five-point Likert scale remains an efficient way to measure attitudes, character and personal traits [52], administered in Spanish for native speaking teachers. Careful attention was taken to ensure that the translation considered the cultural nuances of the language. Both the instrumentation design and the way the survey was administered was finalized following a small-scale pilot study used to determine the reliability and validity of the survey.

Participants

The sample of participants included 500 teachers, from 6 regions of Panama including, Los Santos, Herrera, San Miguelito, Panama Norte, Panama Este, Veraguas and the Instituto Alberto Einstein (IAE), a private school in Panama City. All teachers worked in a bilingual program with the sample containing a diversity of teacher profiles including teachers with a variety of experience and qualification levels.

For the study, experienced teachers were defined as professionals who have been teaching in a regular classroom for more than five years [53]. Formal teaching qualifications were defined as an accredited undergraduate degree in education, or an accredited degree and certified teaching program, resulting in a professional teaching license. Teaching licensure was not limited to the country of Panama but could be

obtained from any country. Hence, four categories of experience were identified: no teaching experience, 1-5 years, 5-10 years, and 10+ years of teaching experience. Five categories of teacher qualification were identified: no formal qualification, high school diploma, bachelor's degree, master's degree, and other qualification.

Data Collection

The survey was a specially designed hybrid of Bandura's Teacher Self-Efficacy Scale (TES), [54]'s instrument for modelling 21st-Century skills (ETS-ES), and a modified version of Rose's Self Permission Scale (SPS), adapted for an educational setting. Both scales were translated into Spanish by a panel of three bilingual professionals, individually and then as a team, to ensure agreement on the precision of vocabulary.

In the case of the TES and ETS-ES scales, questions were grouped into four sections: 1. planning and assessment self-efficacy, 2. instructional self-efficacy, 3. disciplinary self-efficacy, and 4. efficacy to create a positive learning environment. For the Self-Permission Scale section of the survey, Rose's questions point towards 1. lack of self-permission and 2. positive self-permission were included (i.e., lack of self-permission questions was reverse-coded when calculating the composite score.) The wording for each of these questions was altered as little as possible to make them more obviously refer to professional self-permission rather than personal. Questions were randomized once before administering to participants. This resulted in twenty-nine survey closed questions divided into six distinct facets of efficacy and permission. Additional demographic data was also collected as a part of the survey (i.e., gender, age, birthplace, workplace) and the two main categories (i.e., experience and qualifications).

The survey was developed using Google Forms and was administered using a digital mobile link or with a physical copy depending upon the preference of the participant. The option to complete the survey was given in a regularly scheduled professional development training session with the professional development coach for the region involved.

Data Analysis

The data were collected and inputted into the Statistical Package for the Social Sciences (SPSS) software to analyze. The data were analyzed using a ratio scale of measurement and was represented solely numerically. No manipulation of the raw data took place prior to importing into the SPSS.

Participant Demographics

A frequency analysis was performed in order to assess the number of participants who were represented within each category of teaching experience (i.e., never taught before, have taught for less than 5 years, have taught for 5 – 10 years, and have taught for more than 10 years) for each of the other covariates.

Composites

Likert scale analysis procedures were implemented on the data. The study used Boone & Boone's suggested data analysis procedures to construct a descriptive analysis applying a composite score using an interval measurement scale with the mean for the central tendency and standard variations for variability. All missing data was treated as Missing at Random (MAT) [52].

Composite for Self-Efficacy

Self-Efficacy is measured in four main Components: 1. E1: Planning and Assessment, 2. E2: Instruction, 3. E3: Disciplinary, and 4. E4: Positive School Climate. It was decided that each of these components deserved the same weight in building the composite.

Composite for Self-Permission

Self-Permission is measured in two main components: 1. P1: Lack of Self-Permission, and 2. P2: Positive Self-Permission. Lack of Self-Permission was reverse-coded when calculating the composite score and each of these two components deserved the same weight in building the composite. To assess internal reliability a Cronbach's α test was performed after the building of the composites.

Descriptive Findings

The data was tabulated using descriptive statistics in order to calculate the number of participants within each level of experience and for each category of teaching qualification (i.e., No formal degree, high school diploma, other, bachelor's degree and master's degree). To the simple organization of these numbers, the datasets were analyzed using mean and standard deviation for each of the six categories (i.e., four for self-efficacy and two for self-permission) to describe them more fully.

Additional Analyses

Following the descriptive analysis for each of the two main categories (i.e., experience and qualifications), an analysis of covariance (ANCOVA) was also performed. These analyses used either Self-Efficacy Score or Self-Permission score as the dependent variable, experience, qualification and their interaction as the main factors and all the rest of variables as covariates (i.e., gender, age, birthplace and workplace).

Prior to the ANCOVA all variables were checked for normality and a series of Pearson r correlations were performed among all variables to avoid multicollinearity. Upon a statistically significant finding, a Bonferroni test was used to determine the significant differences between group means in the ANCOVA. The level of statistical significance at which a result will be regarded as being statistically significant was .05, the conventional level used in education research.

V. RESULTS

Participants Demographics

The data from this study comes from a survey given to 500 teachers. The response rate was 63% (i.e., 315 teachers participated in the survey). Most of the participants were female (78%), 31 years old or older (77%), born in Panama (81%), with at least a Bachelor’s degree or a teaching license (74%) (Table 1).

When data was tabulated by levels of teaching experience, as teaching experience increases, females tend to dominate even more of each participant pool, going from two thirds in the first two categories to over 80% in the other two (Table 1). That is, the first age group dominates the second level of experience; whereas the last two age groups dominate (61%) the “teachers that have taught over 10 years” level of experience. Unlike national statistics, participants in the study were younger (i.e., 62% of teachers were less than 40 years old) (Table 1).

In terms of birthplace, in general and across all different levels of experience, most teachers were born in Panama. As levels of experience increase, other birthplaces are represented, with Latin America consistently increasing as experience increases (Table 1).

Teachers with less experience (i.e., which is associated as a younger population) tend to possess at least a Bachelor’s degree. As experience increases, people with no formal education increase, perhaps due to reforms in teaching qualifications in Panama that allowed older and experienced teachers to remain in the profession, but required younger generations to be qualified (Table 1).

Finally, most of the participants were from three main regions: Panama Este, San Miguelito and the private school IAE (78%). Still, the other workplaces were represented across the different levels of experience (Table 1).

Table 1

Participants Demographics	Level of Teaching Experience*				Overall
	1	2	3	4	
Variable					
N (%) **	6 (2)	90 (28)	78 (25)	141 (45)	315 (100)
Sex					
Female	4 (67)	57 (63)	65 (83)	119 (84)	245 (78)
Male	2 (33)	33 (37)	13 (17)	22 (16)	70 (22)
Age					
20-30	1 (17)	48 (53)	18 (23)	4 (3)	71 (23)
31-40	3 (50)	25 (28)	45 (58)	51 (36)	124 (39)
41-50	1 (17)	15 (17)	11 (14)	42 (30)	69 (22)
Over 50	1 (17)	2 (2)	4 (5)	44 (31)	51 (16)
Place of Birth					
Panama	4 (67)	85 (95)	59 (76)	107 (76)	255 (81)
Latin America	2 (33)	2 (2)	13 (17)	27 (19)	44 (14)
Europe	0 (0)	2 (2)	0 (0)	2 (1)	4 (1)
North America	0 (0)	1 (1)	4 (5)	0 (0)	5 (2)
Other Regions	0 (0)	0 (0)	2 (2)	5 (4)	7 (2)
Education Level					
No degree	0 (0)	11 (12)	4 (5)	11 (8)	26 (8)
High School	0 (0)	17 (19)	13 (17)	27 (19)	57 (18)
Bachelor’s	3 (50)	31 (34)	35 (45)	53 (38)	122 (39)
Master’s	1 (17)	23 (26)	22 (28)	41 (29)	87 (28)
Other	2 (33)	8 (9)	4 (5)	9 (6)	23 (7)
Work Region					
Herrera	0 (0)	12 (13)	7 (9)	3 (2)	22 (7)

Los Santos	0 (0)	5 (6)	3 (4)	5 (3)	13 (4)
Panama Este	1 (17)	29 (32)	19 (24)	30 (21)	79 (25)
Panama Norte	0 (0)	6 (7)	2 (3)	8 (6)	16 (5)
San Miguelito	0 (0)	21 (23)	9 (11)	15 (11)	45 (14)
IAE	5 (83)	7 (8)	31 (40)	79 (56)	122 (39)
Veraguas	0 (0)	10 (11)	7 (9)	1 (1)	18 (6)

* Levels of Teaching Experience: 1. No Experience, 2. Teachers that have taught for less than 5 years, 3. Teachers that have taught for 5-10 years, 4. Teachers that have taught for over 10 years.

** Percentages may not add to 100 due to rounding.

Composites

Reliability is the extent to which similar measurements on the same person are similar in different settings. In this study, composites validity was measured through a Cronbach’s α analysis. Cronbach’s α measures the overall correlation between items within a scale. Reliability is considered acceptable when α exceeds 0.7.

All α are over 0.7 for the different composites build for this study. Self-efficacy score and Self-Permission score showed Cronbach’s α over 0.8. The four main components of the Self-Efficacy had the lowest α , still all components have α values of over 0.7. The two main components of Self-Permission had the highest α values of 0.92 and 0.82 respectively (Table 2).

Table 2

Adjusted Scores for Self-Efficacy and Self-Permission

Composite	No. of Items	Mean	SD	Cronbach’s α *
Self-Efficacy Score	4	3.74	0.49	0.87
Planning and Assessment	7	3.67	0.54	0.74
Instruction	5	3.79	0.56	0.75
Disciplinary	4	3.71	0.63	0.74
Positive School Climate	5	3.77	0.59	0.78
Self-Permission Score	8	4.18	0.70	0.81
Lack-of Self-Permission	4	2.17	1.14	0.92
Positive Self-Permission	4	4.52	0.63	0.82

* Measure of Internal Consistency.

VI. DESCRIPTIVE FINDINGS

Self-Efficacy and Self-Permission for different levels of teaching experience (Research questions a and b)

The first research sub-question for the study determined the relationship between self-efficacy beliefs and teaching experience in teachers in Panama. Overall, levels of Self-Efficacy tend to increase as teaching experience increases. The second research sub-question for the study determined the relationship between self-permission beliefs and teaching experience in teachers in Panama. Levels of Self-Permission seemed to not change for the different levels of teaching qualifications (Table 3).

For the first component of Self-Efficacy, Planning and Assessment, values in the Likert scale tended to increase as experience increased. Overall, and across the four main components, teachers tended to score the lowest in this component (Table 3). For the second component, Instruction, teachers tend to score mid to high in the Likert Scale. An increase of score is observed as experience increases (Table 3). The third component, Disciplinary, showed the highest scoring from all four components. Although there is a tendency of increasing as experience increases, this increment over time is minimum (Table 3). The last component, Positive School Climate, also showed high scores for all the questions with a tendency to increase as experience increases (Table 3).

For both components of Self-Permission, Lack of and Positive Self-Permission, there was no apparent change in scoring as experience increases. Lack of Self-Permission remained low across all levels of Teaching Experience and Positive Self-Permission scores were high across all levels of Teaching Experience (Table 3).

Table 3
Self-Efficacy and Self-Permission Scores for Teachers with Different Levels of Teaching Experience (Mean±SD)

	Level of Teaching Experience*				
	1 (n=6)	2 (n=90)	3 (n=78)	4 (n=141)	Overall (n=315)
Composite					
Self-Efficacy Score	3.29±0.68	3.64±0.50	3.72±0.43	3.83±0.49	3.74±0.49
Planning and Assessment	3.00±0.74	3.60±0.59	3.62±0.47	3.77±0.51	3.67±0.54
Instruction	3.27±0.86	3.69±0.58	3.75±0.52	3.90±0.53	3.79±0.56
Disciplinary	3.42±0.66	3.57±0.63	3.71±0.58	3.82±0.63	3.71±0.63
Positive School Climate	3.47±0.81	3.70±0.63	3.79±0.52	3.83±0.60	3.77±0.59
Self-Permission Score	4.20±0.80	4.19±0.73	4.12±0.71	4.20±0.67	4.18±0.70
Lack-of Self-Permission	1.88±1.12	2.23±1.24	2.15±1.08	2.15±1.12	2.17±1.14
Positive Self-Permission	4.29±0.75	4.61±0.58	4.40±0.64	4.54±0.66	4.52±0.63

* Levels of Teaching Experience: 1. No Experience, 2. Teachers that have taught for less than 5 years, 3. Teachers that have taught for 5-10 years, 4. Teachers that have taught for over 10 years

Self-Efficacy and Self-Permission for different levels of teaching qualifications (Research questions c and d)

The third research sub-question for the study was to determine the relationship between self-efficacy beliefs and teaching qualifications in teachers in Panama. Overall, Self-Efficacy values change very little across different levels of qualifications. There seems not be a relationship between Self-Efficacy and levels of Teaching Qualifications.

For the first component, Planning and Assessment, there was no apparent tendency to increase or decrease at different levels of qualifications, and the scores were high (Table 4). For the second and third component of Self-Efficacy, as levels of qualifications increased, the scores tended to decrease. Moreover, these decrements were minimal across levels of qualifications (Table 4). Same tendency was observed for the last component of Self Efficacy with “Other” level of qualification showing the lowest values.

The last research sub-question for the study determined the relationship between self-permission beliefs and teaching qualifications in teachers in Panama. There seems to be little change in levels of Self-Permission for the different levels of qualifications. For the first component of Self-Permission, Lack of Self-Permission, there seems to be a slight decrease as levels of qualifications are higher, with High School showing the highest scoring for Lack of Self-Permission (Table 4). The second component showed no apparent decrease or increase throughout the different levels of qualifications (Table 4).

Table 4
Self-Efficacy and Self-Permission Scores for Teachers with Different Levels of Teaching Qualifications (Mean±SD)

	Level of Qualification*				
	1 (n=26)	2 (n=57)	3 (n=23)	4 (n=122)	5 (n=87)
Composite					
Self-Efficacy Score	3.87±0.41	3.72±0.53	3.52±0.46	3.73±0.49	3.77±0.49
Planning and Assessment	3.75±0.50	3.60±0.57	3.39±0.60	3.66±0.51	3.77±0.54
Instruction	3.95±0.47	3.86±0.55	3.50±0.54	3.79±0.56	3.78±0.57
Disciplinary	3.87±0.59	3.68±0.69	3.60±0.48	3.69±0.63	3.74±0.62
Positive School Climate	3.93±0.47	3.74±0.67	3.60±0.60	3.78±0.57	3.78±0.60
Self-Permission Score	4.15±0.69	3.92±0.68	4.28±0.60	4.24±0.69	4.24±0.72
Lack-of Self-Permission	2.38±1.22	2.46±1.12	2.00±0.91	2.01±1.08	2.17±1.25
Positive Self-Permission	4.67±0.44	4.30±0.77	4.55±0.55	4.49±0.68	4.66±0.72

* Level of Qualification: 1. No Formal Degree, 2. High School Diploma, 3. Other, 4. Bachelor’s Degree, 5: Master’s Degree.

Additional Analysis

ANCOVA for Self-Efficacy

A one-way ANCOVA was conducted to compare the effect of qualification and experience whilst controlling for other covariates (i.e., gender, age, birthplace and workplace). Normality and collinearity checks were carried out and the assumptions met. Furthermore the assumption of homogeneity of variances was tested and satisfied on Levene's F test, $F(17,297)=0.74, p=0.76$.

Accounting for the interaction, the ANCOVA showed a not statistically significant interaction between experience and qualification $F(10,293)=0.81, p=0.62$. This means that the regression slopes for the covariate do not differ between treatments; the homogeneity of regression slopes assumption seemed to hold.

When the interaction was no longer taken into consideration in the model, experience was the only effect statistically significant $F(3,303)=3.62, p=0.013, \eta^2=0.035$. Thus, the null hypothesis of no differences between the means was rejected, and 3.5% of the variance of SES was accounted for the different levels of experience.

To evaluate the nature of the differences between the four means further, the statistically significant ANCOVA was followed up with a Bonferroni's post-hoc test. The difference between the "Under five years" group and the "Over 10 years" group was statistically significant $p=0.044, d=-.216$.

ANCOVA for Self-Permission

To compare the effect of qualification and experience whilst controlling for other covariates (i.e., gender, age, birthplace and workplace) for Self-Permission, a one-way ANCOVA was conducted. Normality and collinearity checks were carried out and the assumptions met. Furthermore the assumption of homogeneity of variances was tested and satisfied on Levene's F test, $F(17,297)=1.36, p=0.15$.

Accounting for the interaction, the ANCOVA showed a not statistically significant interaction between experience and qualification $F(10,293)=1.37, p=0.19$. This means that the regression slopes for the covariate do not differ between treatments; the homogeneity of regression slopes assumption seemed to hold.

When the interaction was no longer taken into consideration in the model, qualification was the only effect statistically significant $F(4,303)=2.47, p=0.045, \eta^2=0.032$. Thus, the null hypothesis of no differences between the means was rejected, and 3.2% of the variance of SES was accounted for the different levels of experience.

To evaluate the nature of the differences between the five means further, the statistically significant ANCOVA was followed up with a Bonferroni's post-hoc test. This test showed two differences borderline statistically significant. The difference between the "High School Diploma" group and the "Bachelor's Degree" group was $p=0.059, d=-.311$; and the difference between "High School Diploma" group and the "Master's Degree" group was $p=0.054, d=-.333$.

VII. DISCUSSION

The results in relation to the four sub-questions can be summarized as follows:

- (1) As teacher experience increases so does teacher perception of self-efficacy.
- (2) Teacher experience does not seem to affect the perception of self-permission in teachers.
- (3) Teacher qualification does not seem to affect the perception of self-efficacy
- (4) Teachers with higher levels of formal qualification indicate a higher perception of self-permission.

The relationship between self-efficacy and self-permission

The results clearly indicate no linear relationship between teacher perception of self-efficacy and self-permission. Indeed, very much in line with Rose's (2014) observations, our results would suggest that self-efficacy and self-permission operate as distinct and separate entities. While the concepts may overlap in descriptive characteristics, they clearly are perceived as independent conceptions that are distinct in the manner in which they evolve over time and how they are perceived by teachers.

According to Huberman, teachers go through developmental stages within their career, often labelled differently in diverse national, cultural, or contextual variations [55]. Studies have shown that teacher self-efficacy oscillates, developing in 'fits and starts' throughout the early stages of career development [56], which is in line with the findings of the present study where there were clearly identified differences in teacher perception of self-efficacy depending on the career stage. This study would suggest that the same is true of self-permission, where teacher perception was observed to be dynamic in nature, while still indicating that the factors influencing levels of self-efficacy do not have the same influence over self-permission and vice-versa.

The findings would suggest that teachers who exhibit high levels of confidence and a strong sense of 'self', especially those who are new to the profession, do not necessarily find that they have the level of teacher autonomy that they expected. For those who have only experienced the learning process from a student perspective, especially if they have not benefited from a formal teacher preparation program. As a result,

teachers who enter the classroom with good motivation and excitement may feel stymied by a level of required conformity that had not been anticipated [57]. Similarly, teachers who enter the profession with a firm belief that they enjoy considerable 'permission' within the learning process, find that this is accompanied by a sizable sense of responsibility which may cause novice teachers to question their ability to meet the required standard.

In line with these findings, our study also confirms that teacher perception towards self-efficacy and self-permission is dynamic in nature and fluctuates, especially over the first decade in the job when teachers are still growing in the profession. It confirms Klassen and Chiu's (2010) assertion that there is a non-linear relationship between years of teaching and teachers' sense of competence and satisfaction. The study also affirms the contention that a teacher's sense of self-competence and confidence is likely to develop differently in various areas of teaching, influenced by their individual experience in school and their perceptions of whether or not they have met their pre-constructed goals or aspirations in the classroom [55].

The relationship between self-efficacy and teacher experience

The findings indicate that, overall, self-efficacy increases as teaching experience increases. This evidence supports multiple studies that have found teachers with more than 10 years of experience reported greater teaching efficacy than novice teachers [58] [59] [60] [61]. Given the importance of Bandura's (1997) mastery experiences in the development of self-efficacy, it is not surprising that participants in the study with more teaching experience and therefore exponentially more positive completion of teaching tasks, indicate higher levels of efficacy. This phenomenon, when coupled with the dispositional strength of teachers remaining in the profession beyond the first ten years discussed previously, manifests in a growth of personal efficacy over time.

This seems to refute some previous research indicating that novice teachers' personal and professional efficacy can be just as high as that of peers with considerably more classroom experience [59]. Additionally, further studies have observed that experienced teachers can often suffer from a significant loss of motivation and belief [62], while others have shown results that indicate a mixed perception towards self-efficacy, depending on the specific category being discussed [63]. Such findings corroborate our earlier assertion that self-efficacy is dynamic in nature and oscillates over time depending upon a variety of factors, especially in the first ten years of teaching.

The relationship between self-permission and teacher experience

In contrast to the clear relationship between self-efficacy and teaching experience, the study found that teacher experience does not seem to affect the perception of self-permission in teachers. Given the lack of prior research on self-permission, using the findings of prior studies to confirm or refute the results of the study is unachievable, and so the forming of definitive conclusions would be imprudent.

Since there is a dearth of research on self-permission, a contextual definition of the concept is best established through a discussion of the terminology used in the questions asked of the participants. In the survey, self-permission was associated with personal jurisdiction as it pertained to professional goals, a fulfilling professional life, and realizing professional potential. In this sense, the study indicates that teachers' perception of their personal control over their professional destiny is not directly associated with factors that are impacted over time. This suggests that self-permission might be more closely linked to a teachers' sense of competence, rather than confidence, which research has shown may not grow significantly regardless of years of experience (Berliner, 2001). Novice teachers, especially those who have just qualified through the completion of a degree or certified teaching program, have been shown to exhibit strongly positive feelings about their professional abilities, pride, confidence and knowledge of education [64]. These characteristics are likely to lead to elevated levels of self-permission, especially for teachers chosen for a selective program such as Panama Bilingue.

The relationship between self-efficacy and teacher qualification

Similarly, the findings indicate that, in general, teacher's qualification does not seem to affect the perception of self-efficacy. These results are supported by previous research findings that have observed that overall teachers' efficacy beliefs are not significantly different based on their qualification [65]. At the same time, other studies have indicated no significant differences between teachers with different levels of qualification regarding perceived levels of self-efficacy of instruction [66]. Bandura's (1997) concept of self-mastery explains that experiencing successful teaching performance has a far greater impact on self-efficacy than qualification alone, and so while degrees and certificates may well improve an individual's ability to complete a task, this may not automatically translate into greater self-belief. This is especially true if the teacher has negative teaching experiences. The relationship between self-efficacy and teacher qualification is more nuanced than this, however, as several studies have linked teacher competence and confidence to personal qualification [67]. Given that self-efficacy has been defined as a manifestation of confidence (Block et al.,

2010), and that efficacy is directly linked to improved competence [65] it is unlikely that increased qualification does not impact overall sense of self, and as a result, overall efficacy.

The importance of an overall 'sense of self' also serves as an explanation of one other finding of the study. The results indicate that self-efficacy was found to be moderately higher in teachers with a no formal diploma than teachers who had any other type of qualification. At first glance, such a result may seem out of place, namely that the least qualified teachers exhibit more self-efficacy than their experienced peers, especially given the complexity of skillful planning and assessment in the learning process.

Research has shown that the importance of metacognitive confidence cannot be underestimated when considering the development of self-efficacy [68]. It is not simply a teacher's perception of their capability that is important therefore, but the level of certainty that they have in that belief that has lasting impact. Self-assuredness, and the judgement of certainty in beliefs are important as they support problem solving, promote team cohesion and serve to increase influence [69]. In addition, there is significant evidence to suggest that miscalibration and especially overconfidence exists within some individuals regardless of objective reality [70]. Given these studies, it might not be unusual for some teachers with little or no formal qualification to develop an inflated opinion of their own capabilities or skill, as well as their capacity to complete teaching tasks successfully [71].

This phenomenon of miscalibration of ability occurs when self-judgement of accuracy is misaligned with objective accuracy [72]. Naturally, any teacher who has gained a formal qualification in education is likely to have completed multiple courses in the pedagogy of planning and assessment, and as a result is likely to fully understand the complexity of skills involved. They are more likely, therefore, to have good alignment between their own perception of performance and what it takes to be a good teacher. This may not be the case for teachers who have never benefited from taking professional education courses, resulting in the potential of an incomplete awareness of the complexity of skills required to teach effectively.

The relationship between self-permission and teacher qualification

In contrast to the findings indicating no relationship between self-efficacy and teacher qualification, the study found that teachers with higher levels of formal qualification indicate a higher perception of self-permission. Rose's (2014) descriptive analysis of the defining characteristics of self-permission allow for a series of educated assumptions to be made. Specifically, that self-permission is founded in the notion of an individual accomplishing professional goals and attaining long-term objectives in life. The study suggests that the completion of formal academic qualification serves as a confirmation in teachers that they have the ability to fulfil career goals, and the autonomy to make the decisions necessary to enjoy professional success.

One possible explanation for the discrepancy of findings lies in the layered definition of the concept of mastery. As previously discussed, mastery is a central component of both self-efficacy and self-permission and as a result serves as an important point of convergence of the two concepts. The findings endorse the suggestion that self-efficacy focuses on ability and as such mastery is concerned with the perception of control, where self-permission is centered around sanction and so is concerned with the perception of approval [43]. This raises the prospect that obtaining professional qualifications or credentials while increasing a sense of legitimacy, does not necessarily impact the perception of professional capability. Consequently, it can be argued that teachers view increased qualification as having the potential of career enhancement and improved credibility, while understanding that classroom experience is required to improve professional practice.

In concert with Rose's opinions, the findings also suggest that self-permission is a continuous variable, and that different individuals are likely to exhibit significant variation in both the level of self-permission that they report and the consistency of perception over time. As discussed earlier, self-permission, while remaining a distinct construct, does share some similarities with self-efficacy, one of which appears to be its dynamic and changeable nature. Our findings indicate that, like self-efficacy, self-permission is impacted by individual teacher and cultural traits and is subject to change as teachers progress through career developmental stages.

VIII. CONCLUSION

Limitations of the Study

There are several limitations to the present study that should be noted.

Firstly, the variation of the participant group sample sizes and, in some cases, the small sample size, limit the reliability of any comparative findings. The small sample size of several of these groupings makes it difficult to determine if results can be generalized in any way.

Secondly, while the sample of teachers were generally representative of the teaching population in some criteria (gender distribution, place of birth), they were not precisely representative in all criteria (teacher age, qualification). Additionally, using teachers from the Panama Bilingue program meant that participants had characteristics that might not be universal when considering teachers in Panama or Latin America more generally.

A third limitation was that although the sample was drawn from teachers in six regions of Panama, participation in the study was voluntary and therefore the sample may suffer from selection bias. This would only affect the generalizability of the central tendencies of the measures, but not necessarily the generalizability of the reported associations.

Additionally, the findings are susceptible to the limitations commonly associated with administering a survey to collect data. A common limitation attributed to survey research is oversimplification of complex concepts which can lead to a lack of understanding of the questions being asked. This phenomenon was witnessed in several participants who reported that some questions were unclear, and others admitted to “guessing”.

Despite these limitations, there is little doubt that the results of the study yielded valuable insights into teacher perceptions of self-efficacy and self-permission, and more specifically how individual and cultural context might influence such perceptions. The study also illustrates the distinct relationships between teacher qualification and self-permission, and teacher experience and self-efficacy, and how insight as to how these combinations might combine can be useful.

Implications for future research

Using the discussed limitations of the study as a platform for growth, there are several implications for future research. Most apparent would be the possibility of replicating a study of this sort with a participant pool that is more representative of the teaching population in Panama, and even Latin America more generally. Such data collection has the potential to yield good insight into the perception of self-efficacy and self-permission and the role that these play in the career development and teaching performance of teachers in the region.

The study could also be extended in longitudinal and comparative ways. Future research might be expanded to include additional cultural perspectives further refining and elaborating on the elements influencing teacher’s perception of self-efficacy and self-permission. A study completed across multiple countries has the potential for cultural comparisons to be made, especially when it comes to the role of self-permission in determining teacher perceptions of their authority and autonomy within the learning process. Such data also has the capacity to shape understanding of the role that culture plays in teacher career trajectory in that it can speak to the relationship between cultural influence, sense of self, and teachers’ dispositions that are associated with teacher quality.

Further work is necessary to examine a detailed definition of the concept of self-permission. This would provide valuable information to those tasked with selecting or developing teachers in various regions around the world. There is also the possibility of asking comparative questions with regard to differences between teachers’ perception of self-permission and how this might impact their performance given societal and cultural influences.

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