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A Pilot Mixed-Methods Study: Puerto Rican High Schools Teachers' Self-Efficacy, Dispositional Optimism, Resiliency, and Classroom Management

Un Estudio Piloto de Métodos Mixtos: La Autoeficacia, el Optimismo Disposicional, la Resiliencia y el Manejo del Aula de los Maestros de Escuelas Secundarias Puertorriqueñas

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ABSTRACT

This pilot study aimed to ascertain whether self-efficacy, dispositional optimism, and resilience affect teachers' classroom management in Puerto Rican high school classrooms. A sequential mixed-methods analysis was conducted to draw quantitative comparisons between teacher ratings on pilot observational checklists designed for this purpose and scores on four Likert-scale questionnaires. This was followed by a content analysis of observational notes from teachers in those same classrooms. The sample consisted of seven (n = 7) high school teachers of English, science, mathematics, history, geometry, and Spanish. While the results failed to provide sufficient evidence of a clear relationship between teachers' quantitative scores, they did demonstrate the presence of behaviors indicative of each variable as well as salient categories and behaviors including teaching behaviors with unique cultural implications for Puerto Rican educators. Suggestions for future research directions are discussed.

Keywords: Burnout; Puerto Rico; Self-efficacy; Observational Checklist

RESUMEN

Este estudio piloto tuvo como objetivo determinar si la autoeficacia, el optimismo disposicional y la resiliencia afectan el manejo de salón de clases de los maestros en escuelas secundarias puertorriqueñas. Se realizó un análisis secuencial de métodos mixtos para establecer comparaciones cuantitativas entre las calificaciones de los maestros en listas de verificación piloto de observación diseñadas para este propósito y las calificaciones en cuatro cuestionarios de escala Likert. A esto le siguió un análisis de contenido de notas de observación de maestros en esos mismos salones de clases. La muestra estuvo compuesta por siete (n = 7) maestros de secundaria de las materias de inglés, ciencias, matemáticas, historia, geometría y español. Si bien los resultados no proporcionaron evidencia suficiente de una relación clara entre los puntajes cuantitativos de los maestros, sí demostraron la presencia de conductas indicativas de cada variable, así como categorías y conductas destacadas, incluyendo conductas docentes

con implicaciones culturales particulares para los educadores puertorriqueños. Se discuten sugerencias para futuras investigaciones.

Palabras Claves: Síndrome de desgaste profesional; Puerto Rico; Autoeficacia; Lista de Verificación Observacional

INTRODUCTION

Bandura's (1986) social cognitive theory (SCT) guided this study, using a sequential mixed methods design to examine the association between self-efficacy, dispositional optimism, and resilience and the effect of these variables on high school teachers' skills regarding behavior management in Puerto Rican public schools. SCT describes human cognition, motivation, and emotions influencing one's ability to self-reflect and self-regulate and retains that individuals are not passive in their environments but are instead capable of actively shaping them.

Bandura (1986) defines self-efficacy as people' judgments of their capacity to organize and execute the actions required to attain designated types of performances. It is not concerned with the skills one has, but with judgments of what one can do with those skills. As part of SCT, Bandura (2006) put forward a triadic model of human functioning that involves interactions between an individual's behavior, the environment, and the intrapersonal aspects of one's life. Bandura (1977) explains that self-efficacy develops through four avenues, specifically when individuals (a) experience success (mastery experiences), (b) see their peers succeeding (vicarious experience), (c) are encouraged to try new practices (social persuasion), and (d) experience less stressful teaching situations due to a sense of control (physiological factors). Despite SCT being researched at great lengths within education, further research is needed exploring the intersection of the variables of teacher self-efficacy, dispositional optimism, and resilience.

The definition of resilience used in this study look at "the capacity to 'bounce back,' to recover strengths and spirit quickly and efficiently in the face of adversity" (Gu & Day, 2007, p. 1302). It is notable that resilience also involves the experience of health under stress as well as the dynamic process that contributes to positive development (Masten, 2001; Ungar, 2005, as cited by Liebenberg & Ungar, 2009). Wagnild and Young (1991) discuss how resilience implies emotional stamina, courage, and adaptability in the wake of misfortune. Studies of resilience demonstrate that resilient individuals tend to display adaptive behavior, especially with regard to social functioning, morale, and somatic health (Wagnild & Young, 1993). In exploring the connection between self-efficacy and resiliency, Yi and Wang (2018) found that self-efficacy could predict trait resilience, and that stress predicted the emergence of these constructs.

In positive psychology, the construct of dispositional optimism is conceptualized as a general expectation in life for favorable events (Scheier et al., 1994; Scheier & Carver, 1985). The real founder of positive psychology, Martin Seligman (Isaacowitz & Seligman, 2002, p. 236), has suggested that it is "Individuals with a fairly positive general view of their futures." Furthermore, dispositional optimism represents rather stable traits that can influence various facets of behavior such as mental and physical health (Scheier & Carver, 1987).

A detailed understanding of the variables in focus in this study is important. They can positively impact teacher behaviors and create a positive learning environment for students and, subsequently, support better behavior management in the classroom. For instance, teacher self-efficacy mediates the effects of disruptive student behavior on teacher burnout while a lack of self-efficacy in classroom management contributes to teacher burnout and problems with classroom management/discipline (Jacobson, 2016). According to Barrientos-Soto (2016, pp. 225-226), "resilience is acquired through an interactive process between an individual's own capabilities and strengths; and the environment". The concept of resilience is explained through Bandura's model of reciprocal determinism, which connects individuals' behaviors to personal, environmental, and behavioral factors. SCT can help us understand how teachers exhibit resilience. Limited research has been conducted on how these factors relate to the management of classroom behavior by Puerto Rican teachers.

In the field of positive psychology, dispositional optimism refers to the general belief that good outcomes will occur in one's life (Scheier et al., 1994). This concept carries significant weight in relation to

students' academic achievement and attitudes. For instance, Huan et al. (2006) discovered a noteworthy and inverse correlation between dispositional optimism and academic stress. In other words, adolescents with a more optimistic outlook tended to experience less academic stress, while those with a less optimistic outlook experienced more stress. Additionally, academic optimism as described by Beard et al. (2010) is a similar construct that encompasses teachers' beliefs about various factors that contribute to student success, such as behaviors, personal attributes, and environmental conditions (Fahy et al., 2010). Academic optimism encompasses teacher feelings of efficacy, trust in students and parents, and emphasis on academics, all of which influence their perceived ability to succeed. Furthermore, Beard et al. (2010) also found that personal optimism is positively associated with higher levels of academic optimism. These findings are relevant to this study as they reveal how external factors impact teachers' sense of academic optimism and how academic optimism, in turn, influences their resilience, self-efficacy, and ability to manage classroom behavior.

Teacher Burnout

Teacher burnout is a negative psychological experience involving feelings, attitude, motives, and expectations (Maslach & Leiter, 2017). It accounts for physical and psychological issues and is a multidimensional construct with three characteristics: overwhelming exhaustion, feelings of cynicism and detachment from the job, and a sense of ineffectiveness and lack of accomplishment (Maslach, 1993). Burnout has been explored from several perspectives, including social, clinical, and industrial-organizational psychology (Maslach & Leiter, 2017).

Although burnout can occur in any job, it usually develops in professions involving dedication to third parties such as teaching (Maslach & Leiter, 2016). Work overload is a contributing factor because it reduces one's capacity to meet job demands (Maslach & Leiter, 2017). According to Maslach et al. (2001), changes in managerial practice that are integrated with educational interventions like stress inoculation training, relaxation, time management, and assertiveness training are required to deal with burnout. Furthermore, different programs have been utilized to try to reduce teacher burnout and to help teachers in high-risk areas such as Puerto Rico in addition to increasing emotional support in the classroom.

One of these programs, The CARE for Teachers Program, had significant and direct positive effects on adaptive emotion regulation, mindfulness, psychological distress, and time urgency as well as on the emotional support domain of the Classroom Assessment Scoring System (Jennings et al., 2017). This study will explore teacher self-efficacy, resilience, dispositional optimism, and behavior management through SCT. A potential benefit of the study is to give educators in Puerto Rico and the diaspora tools to reduce their levels of burnout, especially in relation to stressors brought on by the COVID-19 pandemic. An understanding of the background of Puerto Rico as an island and its educational system are vital in understanding in greater depth the need to research variables relevant to educators in Puerto Rico, such as those in this study, that may help in reducing such stressors.

Understanding how teacher burnout relates to teachers in Puerto Rico, as well as its connections to other variables in this study, has the potential to positively impact behavior management. For example, in a study in low-income urban middle schools, Bottiani et al. (2019) found that teachers who expressed higher levels of self-efficacy, an affiliation with their colleagues, and student emphasis on their academics (i.e., that academic performance and achievement is valued among students within the school) reported lower stress and burnout. The study also showed the importance of improving teacher perceptions of resources and reducing disruptive behaviors to alleviate stress in urban, low-income schools. Many schools in Puerto Rico face similar issues as the schools in this study, including socioeconomic challenges and resources constraints; thus, demonstrating the importance of exploring the impact and intersection of the variables explored in this study for Puerto Rican teachers.

The Background of Puerto Rico as a Territory of the United State

Puerto Rico has been officially controlled by distant governments for around 500 years. In 1898, after almost 400 years as a Spanish colony, it came under the control of the United States (US), resulting in conflict between the US government's desire to impose American (colonial) ideals, language, and norms, and the reality of the mélange of deeply Spanish heritage and African roots (Carrión, 1983). Ultimately, US efforts to make English the primary language among

other policies of "Anglicization" and the creation of "tropical Yankees" (Navarro, 2014) in Puerto Rico failed (Hsu, 2015). The continuing influences of Spanish and African culture are apparent in Puerto Rico (Carrión, 1983).

The Background of Puerto Rican Education

The first educational institutions (e.g., schools) in Puerto Rico were linked with the proselytization of the native (Taino) people by Spanish Catholic missionaries. Following larger scale colonization, governors appointed religious figures who acted on behalf of the King of Spain (who in turn was legitimized by the Papacy). This religious education successfully evangelized much of the population, although it failed to provide a broader education. Following the US takeover, colonial policies focused on this educational deficiency with promises of modernization and benevolent tutelage (del Moral, 2013). Indeed, the decision to "Americanize" Puerto Ricans through education was apparent from the very beginning of US control (Navarro, 2014) with the Commissioner of Education being directly appointed by the US President (Fossum & Thomas-Brown, 2021). Examples of Americanization included Puerto Rico's youth learning "to accept the legitimacy of the radically different economic and political order that the United States would install and administer" as well as compulsory English instruction, patriotic exercises, and civic classes (Cabán, 2001, pp. 25-26). The focus of American authorities on institutionalized education required cooperation with the educated Puerto Rican "elite" who ran or owned the schools and looked down on compatriots. This cooperation saw the division of education along the socioeconomic lines that persist today (del Moral, 2013). Currently, educational oversight in Puerto Rico is managed by the Department of Education.

To provide contextual background information, Puerto Rico provides free secular compulsory education at primary and secondary levels. The system is based on the American model with Spanish as the language of instruction. To become a teacher in Puerto Rico, one must meet the Puerto Rico Department of Education teacher certification standards. This is traditionally done by completing a bachelor's degree through a teaching program that involves coursework, student teaching, and fieldwork. There are currently 1,120 schools in Puerto Rico serving 345,815 students through 27,476 currently held teaching positions.

Challenges for Teachers in Puerto Rico

The history of Puerto Rican education has created challenges for educators. One major challenge is work stability. Broadly, the Puerto Rican education system mirrors continental US, but US policies reinforcing Puerto Rico's US dependence have detrimental impacts on the Puerto Rican system (Hsu, 2015). Combined with local administrative, fiscal, and political issues, this results in widespread inadequacies and inefficiencies in the deployment of education in Puerto Rico and has led to the closing of over 170 Puerto Rican schools (Robles, 2017). These struggles have been created and compounded by the aftermath of Hurricane Maria in 2017, a series of earthquakes in 2020, and the COVID-19 pandemic and have affected many – especially teachers.

Teacher shortages in Puerto Rico and the US are a large concern. At the beginning of 2016-2017, the Clark County School District in Nevada (with over 300,000 students) had nearly 1,000 teacher vacancies, underscoring the severity of this issue (Dee & Goldhaber, 2017). The variables explored here impact teaching shortages. For example, Dee and Goldhaber (2017) concluded that Puerto Rican preservice teachers could be better supported by receiving preparation on resilience starting in their Educator Preparation Program. It was explained that teaching in Puerto Rico is challenging with low pay and few resources, thus jeopardizing commitment; the opposite scenario would increase retention.

The closure of more than 170 Puerto Rican schools in 2017 meant that many teachers were left without a livelihood (Robles, 2017). This instability is accompanied by the fact that Puerto Rican teachers have the lowest average salaries of public-school teachers in the US (Carrión-Tavárez, 2005), which led many teachers to leave for better opportunities, of which there are many as most Puerto Rican teachers are bilingual and are in demand in mainland US (Nieves, 2018). School closures resulted in overcrowding in schools and challenges with high class numbers (Coleman, 2018). Another challenge is how to provide adequate schooling after natural disasters. As recently as 2017, the impact of two hurricanes (Maria and Irma) meant that roughly 350,000 pupils and

their teachers were without proper classrooms or facilities.

Most Puerto Ricans had no electricity following the hurricanes forcing teachers to adapt (Ferguson, 2018). The lack of electricity was also problematic due to the inability to utilize digital technology. However, many Puerto Rican teachers were already dealing with limited access to IT facilities, and this issue persists. This limited access became even more problematic and pronounced during the COVID-19 pandemic. While teachers across the globe were dealing with a transition to online learning, this was particularly difficult in Puerto Rico due to the limited access to digital technology and lower digital literacy. As of 2017, teachers were working in an already underfunded system with instability and significant employment uncertainty. The natural disasters amplified this problem, and then the global pandemic required them to teach students remotely. Despite this, the base salaries for teachers in Puerto Rico are significantly lower than in mainland USA states (41% of Florida and 29% of New York) (Korpar, 2022).

As described above, the educational system in Puerto Rico faces significant challenges due to colonialism, natural disasters, and resource scarcity. This study explores the variables of self-efficacy, resilience, dispositional optimism, and behavior management, as having a stronger understanding of the role these variables play in classrooms in Puerto Rico may help mitigate the above challenges. For example, one such benefit in exploring resilience is understanding how it can potentially help local pre-service teachers. Furthermore, teacher stress and self-efficacy have been shown to be negatively related and to predict teachers' cognitive, emotional, and behavioral responses differently (Skaalvik & Skaalvik, 2004). High teacher self-efficacy is a factor that contributes to teachers' likelihood of overcoming challenges and responding positively to change (Swan et al., 2011). More effort is needed to help pre-service teachers increase awareness of the experiences that they will encounter upon entering the teaching field. In lieu of treating teacher resilience as narrowly related to inherited personal traits, teacher educators need to engage in future thinking with pre-service students on internal and external factors that impact resilience to better equip for the realities of teaching. Thus, understanding resilient practices among teachers, especially in Puerto Rico, may help mitigate some of these challenges. One of the goals of this paper is to impart knowledge of each of the variables studied to explore their role and practical understanding in relationship to educators in Puerto Rico.

Research Question and Aims

With these psychological concepts and the Puerto Rican context in mind, this study aimed to examine the impact that self-efficacy, dispositional optimism, and resilience have on behavior management. The study explored these variables through a mixed-methods approach. To achieve the aforementioned aims, the study was guided by the following research questions:

- RQ1 (Quantitative focus): *Is there as an association between Puerto Rican public high school teachers' perceived self-efficacy, dispositional optimism, resilience and behavior management with their observed behaviors in their classrooms?*
- RQ2 (Qualitative focus): *To what extent will the behaviors indicative of self-efficacy, resilience, dispositional optimism, and behavior management be evidenced in the classroom through qualitative observations?*

It is anticipated that responding to this question will facilitate teacher growth in Puerto Rico and beyond in relation to behavior management. To support the insights provided by the quantitative component—and to further support the achievement of the aims and addressing the research question—we incorporated findings from qualitative observations of teachers' behaviors in classrooms in Puerto Rico. In the following section, the details of the methodological approach will be outlined and explained in further detail.

METHOD

Research Design

This study used sequential mixed-methods design (Creswell, 2013). First, quantitative data were collected via questionnaires validated for use in Puerto Rico. A quantitative checklist was then used as a means to check off how many times behaviors indicative of each variable were observed in the class. This was followed up qualitatively through non-participant observations by the primary researcher and two research assistants entering educators' classrooms making detailed notes of behaviors indicative of each variable. The qualitative data were gathered to

inform a better understanding of the initial quantitative findings.

Participants

The sample consisted of seven teachers recruited via convenience sampling for the quantitative phase. These teachers were a subset of teachers who had agreed to complete four surveys and have their class observed. The seven anonymized participants were high school teachers of history, English, Spanish, geometry, science, and mathematics across grades 9-12. This phase involved completing four Likert-scale questionnaires measuring the variables of self-efficacy, resilience, dispositional optimism, and classroom management. The following scales were used in the study: The Teacher Sense of Self Efficacy Scale (TSES), the Resilience Scale (RS), the Life Orientation Test-Revised (LOT-R), and the Behavior and Instructional Management Scale (BIMS). The teachers completed the questionnaires themselves and were subsequently observed in their classrooms upon completing the questionnaires.

Instruments

TSES. With regard to self-efficacy, the TSES (Tschannen-Moran & Hoy, 2001) includes 24 items on a nine-point Likert scale, modified to a five-point scale in Puerto Rican Spanish (.93 Cronbach's alpha) to cover the dimensions of student engagement, instructional strategies, and classroom management. There was no previous Spanish version of this instrument.

Life Orientation Test-Revised. For dispositional optimism, the Life Orientation Test-Revised (LOT-R; Scheier et al., 1994) scale contains 10 items (phrased positively and negatively – six scale and four filler). The instrument used a 4-point scale from strongly agree to strongly disagree and a one-factor structure that measures pessimism and optimism on a continuum. Research on the Spanish version of the LOT-R found that internal consistency using a Cronbach's alpha coefficient was .73. For further validation for use in Puerto Rico for the current sample, the significance level was set at .05 and the validated questionnaire found a reliability alpha of .77.

Resilience Scale. The Resilience Scale (RS; Wagnild & Young, 1993) shows the degree of individual resilience and is applicable among various ages and genders. Items are worded positively and ranked on a 7-point scale from disagree to agree. Internal reliability showed a Cronbach's alpha (α = 0.93) for the original Spanish version (Heilemann et al., 2003). Additional validation for use in Puerto Rico for this sample was set at .05 and the validated questionnaire had a reliability alpha of .92.

BIMS. The BIMS is derived from the Attitudes and Beliefs on Classroom Control revised scale (ABCC-R; Martin et al., 1998). The significance level was set at .05 and the BIMS showed internal consistency above .70 for all subscales and a Cronbach's alpha value of .82. The scale includes two six-point Likert subscales for behavior management with 12 items each for behavior management and instructional management.

Classroom Behavior Checklist. A pilot checklist was designed to obtain a more objective rating of teachers in their classrooms. Observational notes were coded using the checklist to examine the impact of the constructs on classroom behavior management. The checklist consisted of each variable of self-efficacy, dispositional optimism, resilience, and behavior management. It was noted on the checklist how many times different indicators were observed, i.e., if observed but not tallied or if not observed at all. After being utilized, categories of behaviors were created based on the checklist and notes.

General Procedures

Qualitative Design. For this study, a taxonomy of behaviors was generated for each variable to show what types of behaviors indicative of these variables may be demonstrated by the teacher. These behaviors have been identified in previous literature regarding these variables. Wolcott's (1994) procedure for analyzing data was used to analyze the qualitative data in this study. Wolcott (1994) described three steps in the process of analyzing data: description, analysis, and interpretation. Description involves treating the data as facts that speak for themselves. This entails detailing what we (or participants) have actually seen but not inferred behavior. Analysis comprises the "examination of data using systematic and standardized measures and procedures" (Wolcott, 2009, p. 29). This analysis can be done through such procedures as content analysis as in this study. Lastly, interpretation is not derived from rigorous agreed-upon, carefully specified procedures, but rather through attempts at sense-making, a human activity that includes intuition, past experience, emotion-personal

attributes of human researchers that can be argued endlessly, but never proved nor disproved to the satisfaction of all. Specifically, the type of content analysis carried out would be classified as vertical analysis, as defined by Piñuel (2002). This involves a corpus of data that is very reduced, typically not analyzed in a quantitative fashion and does not go through a specific sampling methodology, as was the case for the educators chosen for this study. The content analysis involved taking thorough notes during classroom observations and coding them based on both the categories already established in the checklist as well as examining what new themes emerged.

Also, some variables are better understood through a qualitative focus as "the study of resilience is still too unwieldy and the conceptual terrain too unexplored to proceed with quantitative methods alone" (Liebenberg & Ungar, 2009, p. 17). The benefits of qualitative research include deeper insight into designing, administering, and interpreting language; enhanced understanding of candidate and interviewer behavior; greater insight into cross-cultural influences on behavior during the speaking tests; meaning of the score or grade; and the features of language assessment.

Quantitative Design**.** The researchers attempted to compare the scores on seven teacher questionnaires—one questionnaire for each variable of the study as well as the teachers' ratings on the checklist of observational behaviors. A review and approval of this research with human participants was granted by the IRB of the University of Puerto Rico and the Puerto Rican Department of Education. The principals of each participating school granted permission for the research to be carried out at their school site. Upon obtaining that permission, an informed consent document was reviewed with each participating teacher informing them of the procedures of the study, risks, benefits, and how their information would be kept confidential. The overall research design was driven by the following hypothesis:

- H_1. *Higher levels of teachers perceived self-rated self-efficacy, resilience, dispositional optimism, and behavior management will correlate positively with those observed teacher behaviors*.

In the following sections, the details of the methodological approach will be outlined and explained in further detail.

Data Analysis

Phase 1: Quantitative Analysis. A pilot checklist of observable classroom behaviors was used to quantify observable behaviors on average. An independent score per observer was determined for each teacher. The perceived behaviors were derived from the questionnaire respective of each construct included in the study. To test the hypothesis of this study, a comparison was made between these seven teachers' perceived scores on the TSES, RS, LOT-R, and BIMS and their observed scores on the checklist as rated by two observers in the classroom.

Phase 2: Qualitative Analysis. Notes from the nonparticipant classroom observations were analyzed using content analysis. Examples of each variable in each teacher's classroom were explicitly studied by analyzing variable categories that emerged at especially high levels. Based on the average scores, specific examples were chosen that demonstrated exceptionally high ratings in behaviors related to this study's variables. Examples from other teachers' classrooms were also examined to provide specific examples of particular behaviors.

RESULTS

Quantitative Analysis

The hypothesis that higher levels of perceived self-rated self-efficacy, resilience, dispositional optimism, and behavior management will correlate positively with those observed teacher behaviors was examined through eight Spearman correlation coefficients. These coefficients were calculated with scores ranging from -.14 to .36. We found a significant correlation between the observed dispositional optimism score and the teachers perceived dispositional optimism score (r = .87); however, the remaining correlations were not found to be significant ($p < 0.05$) (See Table 1). Given how different the checklist ratings and the Likert scale questionnaire scores were, it was not practical to draw comparisons between these measures; thus, there was insufficient evidence to confirm this hypothesis, but valuable insights were gained.

Qualitative Analysis

Behaviors of self-efficacy were content analyzed producing the following two categories: (a) "teach-er crafts useful questions for his/her students" and (b) "*teacher use of strategies to gauge students' understanding*

of the material presented in class." A notable example was Alejandra, a 12th-grade teacher of Puerto Rican history, who frequently used questioning strategies to check understanding and stimulate discussion among her students during class presentations. She also demonstrated many examples in the category "*teacher's use of strategies to gauge students' understanding of the material presented in class*": She was rated highly in this category by having students and class provide examples of their understandings of specific material. For self-efficacy, the categories of (a) "*teacher planning*" and (b) "*teacher's ability to make students believe they can do well academically*" also emerged at high levels for Enrique, an 11th-grade geometry teacher (see Table 2).

Dispositional optimism was the highest variable for three of the teachers. These teachers were Enrique (outlined above); Fernando, a grade 9/10 teacher of Puerto Rican history; and Cecila, an 11th-grade English teacher. The most prominent categories concerning dispositional optimism were "problem solving," "positive adaptation in the face of adversity," and "ability to rebound after problem with behavior" (see Table 3).

Based on the checklist analysis, Alejandra and Enrique had the most observed behaviors for qualities indicative of resilience. Categories that emerged strongly for this variable were "*multi-tasking*," "*teaching the lesson in multiple ways*," "*flexibility*," and "*planning*." (See Table 4).

Finally, in the behavior management variable, "*motivation*," "*building rapport*," and "*establishing high expectations*" emerged for Gabriela—a 10th-grade math teacher. Enrique also displayed behaviors that emerged strongly for this variable including "*planning*," "*multi-tasking*," and "*flexibility*" (see Table 5).

Classroom observations revealed three categories of behavior that aligned with this study's variables and deserve attention because of their possible cultural implications. These categories are "*positive adaptation in the face of adversity*," "connecting learning to real-world applications," and "*building rapport*."

Research shows the importance of students and teachers having a personal connection and that there are benefits for motivation and achievement. This might assist with the high dropout rate in Puerto Rico (Mather, 2003). Irizarry and Quintero (2005) found that the rate may stem from conflicts with teachers, lack of support from school personnel, academic difficulties, absenteeism, truancy, low pertinence of the classes to student interests, falling behind in school, school suspensions, as well as discipline problems. Further, Calderón et al. (2009) found that the dropout risk was closely related to school absenteeism and grade retention and that teachers and staff should be aware of these factors. Taken together, the findings from the qualitative content analysis point to effective teaching behaviors that may positively impact student learning and success, especially for Puerto Rican students. These metrics can in turn decrease dropout rates.

Other Findings Related to Cultural Issues

Three categories of culturally relevant behaviors emerged: "positive adaptation in the face of adversity," "connecting learning to real-world applications," and "building rapport". Examples of "positive adaptation in the face of adversity" included low attendance due to weather, outside distractions preventing teaching and learning, budget concerns, and concerns about the district and building support.

Table 1

Raw Scores and Correlations of Teacher's Perceptions compared to Observed Classroom Behaviors

Teacher ID*	Self-Efficacy ** (TSES) (r = -0.36)		Dispositional Optimism (LOT-R) (r = 0.87)		Resilience Scale (RS)(r = -0.32)		Behavior and Instructional Management (BIMS) (r = -0.14)	
	Observed	Perceived	Observed	Perceived	Observed	Perceived	Observed	Perceived
153	28	113	9	15	18	161	21	70
67	31	87	15	25	24	135	31	80
164	14	111	19	22	16	149	26	72
181	25	99	15	24	11	154	35	73
47	24	91	10	21	16	154	27	50
169	15	101	4	14	13	156	24	68
81	16	93	5	14	16	137	18	78

Notes. * ID = Teacher questionnaire identification. We found a significant correlation between the observed dispositional optimism score and the teachers perceived dispositional optimism score (r=.87); however, the remaining correlations were not found to be significant ($p < 0.05$).

Table 2

Content Analysis: Salient Categories of Teacher Self-Efficacy and Additional Examples

Relevant Examples for Questionnaire Alejandra		Relevant Examples for Questionnaire Enrique	
Category name: Teacher crafts useful questions for his/her students	Category name: Strategies to gauge students' understanding of the material presented in class	Category name: Planning	Category name: Teacher is able to make student believe they can do well academically
1. ¿Para qué se crearon las cooperativas? [Why are cooperative created?]	1. Manda a un estudiante al frente a explicar el organigrama de la cooperativa juvenil (similar a lo que tienen en la escuela). De forma en conjunto con la maestra. [Teacher sends a student to the front to explain the organizational chart of the youth cooperative (similar to the one they have in the school). This was done in a way that was in conjunction with the teacher].	1. Guiding questions on the board regarding factoring with prime numbers. 2. Planning by setting specific time-limits on activities. "I'm going to give you 15 minutes to finish these questions."	1. Encouraging language, for example, "!Dale! !Hiciste bien! ["Go for it! You did good!"]

Note. *Refers to the questionnaire belonging to teacher.

Table 3

Content Analysis: Salient Categories of Dispositional Optimism and Additional Examples

Relevant Examples for Questionnaire Enrique		Relevant Examples for Questionnaire Fernando	Relevant Examples for Questionnaire Cecila
Category name: Problem solving	Category name: Positive adaptation in the face of adversity	Category name: Positive adaptation in the face of adversity	Category name: Teacher is able to rebound after a problem with behavior
1. Solving individual student's math difficulties through diverse instructional strategies, e.g., individual attention, answering problems on the board, and group-instruction-and continually gauging specific student's understanding of the problem.	1. Teacher explains to class reason for very load cheering and yelling outside, as being due to awards and that they'll have to deal with that for the whole week. However, teacher continues instruction working around the noise level.	1. Half class late due to excessive rain outside. 2. Distractions from music class and the smell of food from lunchroom downstairs.	1. When problems with behavior presented themselves, teacher was firm and direct to get the student back to work, e.g., telling students in a firm voice, "finish your work," "Hurry up," or "You're supposed to be working."

Note. *Refers to the questionnaire belonging to teacher.

Table 4

Content Analysis: Salient Categories of Resiliency and Additional Examples

Relevant Examples for Questionnaire Alejandra		Relevant Examples for Questionnaire Enrique
Category name: Multi-tasking	Category name: Teacher uses multiple ways to teach the lesson objectives	Category name: Flexibility
1. Teacher answers individual students' questions; receives and presents students' PowerPoint presentation on front projector so the student can have a presentation and discuss material relevant to individual students' presentations.	1. History teacher presents material on Puerto Rico history such as cooperatives, through students presenting PowerPoint presentation, whole-class discussion, and answering individual students' questions.	1. Teacher is able to modify plans and review old material in order to help students comprehend new learning objective; for example, explaining the order of operations to students in a math class.

Note. *Refers to the questionnaire belonging to teacher.

Table 5

Content Analysis: Salient Categories of Behavior Management and Examples

Relevant Examples for Questionnaire Gabriela		
Category name: Motivation	Category name: Rapport	Category name: High expectations
1. Math teacher gives a motivational speech to students on the importance of the Puerto Rico tests they must take. 2. Teacher says, "This is your moment to show what you know." [in regard to the same Puerto Rican school tests].	1. Explica el dominio de una función separando las X's de las Y's. Ejemplo de la vida real; dominio como las novias no se comparten. [She explains a function's domain, separating the X's and Y's. She gives an example to a student asking him if he would share his girlfriend and explaining that just like he wouldn't share his girlfriend with someone else, functions don't share their domains.	1. "Give your best, and when I say your best, I mean your best. [In regards to same achievement test]. 2. Teacher explaining the importance of the test they'll be receiving and its connection to the Department of Education and her expectation of them. For example, "Ustedes puden plasmar en una prueba" ["You can all show what you're made of with this test"].

Note. *Refers to the questionnaire belonging to teacher.

The ability to connect student learning to real-world applications also emerged. For example, students created a banner labeled "Americanizado" [Americanized], with each letter of the word representing a picture of something they had received from the US such as Amazon (used for the letter 'A'), Coca-Cola (for letter 'c'), Nike (the swish turned on its side to represent an 'r', and a donut for an 'o'. Finally, "building rapport" was a theme that emerged in every class observed and involved examples ranging from joking and laughing with students to using positive and encouraging language to simply calling students by their first names.

DISCUSSION

These findings emerged in response to the hypothesis that higher levels of observed self-efficacy, resilience, and dispositional optimism will correlate positively with behavior management. When considered in light of the literature on SCT and classroom and behavior management, the findings suggest all teachers, especially new teachers, need to build the ability to foster feelings of self-efficacy, dispositional optimism, and resilience in their practice.

Certain behaviors indicative of these variables emerged at high levels in some teachers' classrooms through the content analysis. These behaviors included: (a) "teacher crafts useful questions for his/her students," (b) "teacher's use of strategies to gauge students' understanding of the material presented in class," (c) "teacher planning," and (d) "teacher's ability to make students believe they can do well academically." Behaviors indicative of dispositional optimism were: (a) "problem solving," (b) "positive adaptation in the face of adversity," and (c) "ability to rebound after problems with behaviors." For the indicator variable of resilience, (a) "multi-tasking," (b) "teaching the lesson in multiple ways," (c) "flexibility," and (d) "planning" emerged most frequently. Further, (a) "motivation," (b) "building rapport," and (c) "establishing high expectations" emerged at high levels concerning the dependent variable of behavior management. Finally, three categories of culturally relevant behaviors to emerge were "positive adaptation in the face of adversity," "connecting learning to real-world applications," and "building rapport."

Homrich-Knieling (2019) describes how rapport needs to be explored in relationship to building meaningful relationships in classrooms, in pedagogy, and in practice to foster a more empathetic, democratic, and supportive community. This concept of rapport may be especially important to students in Puerto Rico where connecting learning to real-world applications was found to be very important. Teachers who carry out this mission may help decrease the dropout rate if learning is made more relevant to the lives of Puerto Rican students.

The qualitative component involved field observations in classrooms, thus enabling examination, comparison, and contrast of many behaviors constituting each variable. This work provided a starting point from which to examine these behaviors in more depth. In terms of the hypothesis, there was insufficient evidence to confirm H1, which proposed that higher levels of observed self-efficacy, resilience, and dispositional optimism would correlate positively

with behavior management in classroom observations. While it was not possible to confirm this hypothesis, valuable insights were still gained from carrying out the observations and filling out the checklists. The literature within positive psychology continues to suggest that such experiences with these constructs are much more likely to correlate positively than negatively.

CONCLUSION

The capacity to negotiate behavior management is vital to being an effective educator. This article used SCT to explore relationships between the constructs of self-efficacy, dispositional optimism, and resilience and their relation to teacher behaviors. We also explored whether there was an association between Puerto Rican public high school teachers' perceived self-efficacy, dispositional optimism, resilience and behavior management and their observed classroom behaviors. We administered four questionnaires to examine if teachers' self-perceptions associated with their true behaviors. Separate analyses necessitated eight separate correlations due to the unique nature of each construct. We examined the relationship between teachers' self-perceptions and their classroom observation by two independent observers.

Despite insufficient evidence to support the quantitative hypothesis, findings point to the need to develop strategies for further enhancing feelings of self-efficacy, dispositional optimism, and resilience in teachers as this can lead to greater success in classroom and behavior management. For instance, Gu and Day (2007) suggest that understanding the role of resilience in teacher management of the interactions between work and life over their career and the varied working contexts adds to existing knowledge of variations in teacher's work, lives, and effectiveness and contributes to debates on standards, quality, and retention. Such interventions could be vital tools in mitigating teacher burnout, a pervasive issue exacerbated by the challenges faced by teachers in Puerto Rico, including socioeconomic disparities, resource constraints, and natural disasters.

Although this work is applicable to various educational settings, it is important to focus on ways to enhance teaching strategies related to the focus variables for teachers in high-risk settings such as in Puerto Rico. This can contribute to diminishing teacher burnout and increasing the overall success of teachers. Better experiences with these constructs in general may help teachers manage challenges that arise from with socioeconomic status, student motivation, and, therefore, better foster teacher retention. Another application of this research may be the fact that knowledge of the resiliency practices of teachers in Puerto Rico can have positive impacts. For example, Wang (2021) investigated the resiliency model designed by Mansfield (2016) in Chinese teacher education and discussed possible gains due to teachers' internal factors such as mindfulness, well-being, and creating a positive educational context.

Further, using the TSES, Krasniqi and Ismajli (2022) discovered a positive relationship between instructional feedback and classroom management self-efficacy. This finding implies that when teachers receive feedback during performance evaluations, their capacity to effectively manage the classroom enhances. Studies such as the preceding are the rationale for carrying out this study. It is important to fill that gap between how teachers rate their own perceived levels of the variables explored in this study and how observers in the classroom rate those respective teachers. Thus, it may behoove administrators in Puerto Rican school to increase instructional feedback to teachers to positively influence classroom management self-efficacy.

In essence, this study contributes to the ongoing discourse on teacher development and educational improvement by elucidating the intricate interplay between psychological constructs and behavior management within the unique context of Puerto Rican high school classrooms. By fostering a deeper understanding of these dynamics and advocating for targeted interventions, educators and educational policymakers can work towards creating more supportive and conducive learning environments for both teachers and students alike.

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