The development of an instrument to measure English Language Learner (ELL) teacher work stress

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HIGHLIGHTS

- Development of an ELL teacher stress measure capturing multiple work ecologies.
- ELL teachers from across the U.S. participated in the study.
- The development of the final 40-item ELL Teacher Stress Measure is described.
- Four ecological domains of ELL work stress are represented in the final measure.
- The new measure provides a tool that is useful in a variety of school settings.

ARTICLE INFO

ABSTRACT

The purpose of the current study was to develop a measure of English Language Learner (ELL) teacher stress that highlights multiple aspects of teachers' work settings that impact their work stress. Ninety-eight ELL teachers from 29 U.S. states completed an online questionnaire, including the current measure in development, a demographic survey, the Teacher Stress Inventory, and the Maslach Burnout Inventory. The development of the final 40-item ELL Teacher Stress Measure (ETSM) is described. The new ELL Teacher Stress Measure addresses a significant gap in the field and provides a tool that is useful in a variety of school settings.

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"It's almost like tutoring. I can't teach the class as a class. Like when you have all 60 eyes looking at me on the blackboard and taking notes. I can't even do it as a group, or a table. I have to go around and explain it to every single one of them. As long as I can—unfortunately, I only have 50 minutes. The first 20–25 minutes, you almost lose it. Everybody gets started with their work in the last 10 minutes. Of course, that's when you have everybody getting to work and then the warning bell rings, and it's like 'AAAGH.'" (Katz, 1999, p. 832).

English Language Learner (ELL) teachers have perhaps the most important role in school for immigrant and refugee students. These

are the staff that immigrant and refugee students first encounter in their school experiences and are often the school adults with whom they spend the majority of their day. Their distinctive significance in the lives of immigrant and refugee students makes the work experiences of ELL teachers of particular interest to understand, and little research attention has been paid to the ELL setting. Further, with nearly 50% of all teachers leaving their position within their first 5 years (NCES, 2011), approximately 45% of ELL teachers not receiving specialized ELL certification or training (Esch et al., 2005), and estimates of dropout for ELL students reaching as high as 40% (NCES, 2011), the current examination of sources of stress in the work lives of ELL teachers is imperative.

The purpose of the current study was to develop a measure of ELL teacher stress that highlights the impact of various ecologies within ELL teachers' work settings. Understanding sources of ELL teacher stress allows us to be better informed about the school experiences of teachers who work with immigrant and refugee students and, as a result, can help to minimize its negative impacts.

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The limited understanding of ELL teacher stress presents a significant gap in the field and provides a potential roadmap for how the school setting affects ELL teachers and the immigrant and refugee students they work with.

1. The ecology of teacher stress

Stress has been defined broadly as "a particular relationship between the person and the environment that is appraised by the person as taxing or exceeding his or her resources and endangering his or her well-being" (Lazarus & Folkman, 1984, p. 19). While past research on schools and stress has attempted to capture specific aspects of the school environment that may impact teacher stress, it does not present an ecological picture of the school, including the experiences of teachers with multiple roles within the school and stressors that evolve from various ecologies in their school environment. Further, how stressful work experiences are appraised to be by the teacher depends upon all of the components that are present in their environment and how these components interact with each other. For ELL teachers more specifically, stress may evolve from various sources, such as the work roles (formal and informal) that ELL teachers must assume to get their jobs done, their ability to address constantly changing student issues, and the ever-changing task of responding to diverse student learning needs.

The current examination of teacher stress benefits from the use of an ecological framework to look at a broad group of factors that impact stress, including the influences of other teachers, school staff, school administrators, parents, and students. The notion of capturing the processes that influence teachers' environment that result in work stress is essential to the current examination. Use of the Trickett, Kelly, and Vincent (1985) ecological framework in this study addresses how the ecology of teachers' lives are reflected in the issues that are brought both to the school and to the classroom by administrators, other teachers and school staff, parents and students. Therefore, the various components that are present within the school environment contain rich information about what influences teacher experiences of stress, including potential stressors that come from multiple sources. Guided by this ecological framework, the current stress measure is designed to address these shortcomings by capturing stress events experienced by ELL teachers that evolve from multiple ecological domains, such as: federal and systemic influences; overall school climate; the presence or absence of social support; interactions with other school staff, students, and parents; and the nature of the job for teachers.

2. Review of literature on teacher stress

Teacher stress represents a relatively ignored area of research in the larger context of education, although burnout (an outcome of stress) has been a common topic of investigation, with newer literature highlighting ecological contributors (e.g., Fernet, Guay, Senécal, & Austin, 2012). Much of the research on teacher stress has focused on individual-level factors, such as personal affect and self-efficacy (Yoon, 2002), coping (Lambert, McCarthy, O'Donnell, & Wang, 2009), and mental health (Wang & Guo, 2007). Some broader areas identified as causing stress for teachers include: lack of training, preparation, and professional development; role ambiguity, conflict, and overload; and negative work environment or lack of ongoing support (Billingsley, 2004; Freedy & Hobfoll, 1994; Kyriacou, 2001). There is a more limited body of research that focuses specifically on teachers outside of the mainstream setting, mostly in the Special Education setting. This research shows that non-mainstream teachers experience higher teacher attrition (Billingsley, 2004; Edgar & Pair, 2005), suggesting that stress may

be more inherent to these positions. Yet this link has not been formally investigated. Furthermore, for ELL teachers specifically, research finds that the ELL teaching position includes increased isolation from the mainstream, more diversity in student backgrounds and abilities than in mainstream settings, and challenges to adapt curriculum based on a large range of student learning needs (Katz, 1999). Increased paperwork demands attached to this position are frequently cited as stressful, as is an increased need for parental contact/involvement, especially when compared to teachers who work in the mainstream setting. In addition, the role diffusion that ELL teachers are likely to experience, based on the multiple roles within the classroom that these teachers assume (teacher, mentor, counselor, etc.), has been noted as an increased source of frustration, stress, and burnout for these teachers across K-12 grade levels (Markham, 1999).

2.1. Distinctive aspects of the ELL classroom

When examining the ELL context more closely, it is important to note that ELL programs are quite diverse and vary greatly by school, with no federal system in place to dictate guidelines for ELL education (in contrast to the Special Education system, for example). Yet, across these programs, the cultural, linguistic, and educational diversity of students in the same classroom has been viewed as a particular pedagogical challenge for teachers of ELL students (Haneda, 2009; Lucas, 1997; Olsen, 1997). ELL classrooms often include students from multiple cultural and linguistic backgrounds whose prior education may range from those with little or no prior schooling or literacy to those with adequate or occasionally exceptional educational backgrounds.

This student diversity is complicated by a relative lack of well-developed curricular materials for ELL instruction (Haneda, 2009; Lucas, 1997), necessitating what Glisson (2002) calls a reliance on "soft" rather than "hard" technology. Soft technology is involved when lack of existing standardized procedures or materials forces the practitioner to modify existing resources or develop new ones to accommodate the work task. The softer the technology and existing resources, the less teachers can rely on prior knowledge and the more they must rely on improvisation and creative use of existing materials. This suggests that ELL teachers spend considerable time improvising class-related materials and using trial-and-error pedagogical processes.

Further, ELL teachers at both the elementary- and secondary-levels have reported an increased sense of responsibility for their students, even at times during the school day when their students are not assigned to them (Markham, 1999). Teachers who report specialized training in working with ELL students do not feel equipped to deal with all of the diverse roles they must fulfill in their daily work lives (Loh, 1995; Markham, Green, & Ross, 1996), let alone new teachers or teachers will little preparation or training. Markham et al. (1996) reported a series of out-of-class stressors for ELL teachers, including time spent preparing students to perform well in non-ELL classes and helping them adjust to the larger school culture. Moreover, these teachers reported that out-of-class related stressors were more stressful than in-class ones, a different pattern than that found among a sample of mainstream teachers in this particular study.

In addition, by their nature, programs outside of the mainstream setting are likely to be structurally isolating for teachers with regard to their regular interaction with coworkers in the mainstream setting, acting as an additional potential stressor for ELL teachers. Many ELL teachers across grade levels report other school staff treating them as "different" in some way, feeling that other staff deem them to be less important than mainstream teachers, and having weaker relationships between ELL teachers and content-

area teachers (Bunch, 2010; Markham et al., 1996). Multiple reports suggest that ELL teachers experience marginalization in the broader school context, reflected in level of access to needed educational resources, quality and predictability of teaching space, exclusion from educational decision-making, and lack of feedback and support from colleagues (Lucas, 1997; Olsen, 1997).

Together, these studies represent efforts to describe specific aspects of the work lives of ELL teachers, both inside the classroom and in the broader school context, that may result in teacher stress. While each of these studies adds to an understanding of ELL teacher experiences, the current study tackles the challenge of capturing potential sources of stress across varied aspects of the school ecology for these teachers.

2.2. A critical review of teacher stress measures

While there are no existing measures specifically designed to assess ELL teacher stress, several more general measures of teacher stress exist. To assess the need for a new measure of ELL teacher stress, four of the most recent and comprehensive existing measures were reviewed: the Teacher Stress Inventory (TSI; Fimian, 1984), the Index of Teaching Stress (ITS; Greene, Abidin, & Kmetz, 1997), the Teacher Occupational Stress Factor Questionnaire (TOSFQ; Moracco, Danford, & D'Arienzo, 1982), and the Teaching Events Stress Inventory (TES; Cichon & Koff, 1980).

In reviewing these measures, we assessed several specific issues. First, with respect to content, we assessed the degree to which these measures cover the potentially distinctive kinds of stressors discussed above and whether they include stressors across multiple levels of teachers' ecology. As noted above, none of the currently existing measures were found to be specific to the unique experiences of ELL teachers. Second, previous measures focus mostly on individual-level events of stress (i.e., monitoring student behavior, too much paperwork) rather than school or system-level influences. Third, stress measures need to differentiate stressful events from outcomes of stress, such as burnout and teacher retention, and a common problem among the four measures reviewed was that they often included items that represented outcomes of stress rather than stress events. For example, items from the TSI included "Using alcohol," "Feeling depressed," "Stomach cramps," "Rapid/Shallow breath," and "Physical exhaustion." Finally, stress measures need to differentiate the occurrence of events from their perceived stressfulness (Vinokurov, Trickett, & Birman, 2002). For example, first identifying whether a stress event occurred for a teacher is important when next asking him or her to rate how stressful the event was. None of the measures reviewed made this distinction in their response scales. Taken together, these issues of narrow focus of content, levels of ecology not adequately represented, the confounding of stress with outcomes of stress, and issues of scale format support the necessity of developing a new ELL teacher stress instrument (see Table 1).

3. Methods

Various steps were taken in the development of the current ELL Teacher Stress Measure (ETSM). First, two preliminary studies informed item and domain development. The first was a qualitative study of ELL high school teachers in the Chicagoland area (Trickett et al., 2012) that revealed a variety of potentially stressful teacher experiences. The second was a review of the published literature on ELL teacher work experiences that was coded for potential stressors (Weinstein & Trickett, unpublished manuscript). A few additional items were adapted from existing stress measures. From these preliminary studies, four ecological domains of teacher stress emerged.

- *Systemic Impacts.* Systemic impacts include federal, state, and local school policies or practices that contribute to the work stress of ELL teachers. Federal-level pressures experienced by teachers, such as No Child Left Behind and mandated language testing, are included in this category.
- *Social Support/Climate.* Social support and climate refers to the overall social climate of the school, as well as the nature of social interactions between ELL teachers and other school staff. Our previous research and the ELL literature identified stressors regarding social climate and support that emanate from their regular and ongoing interactions with all aspects of the school environment, including: lower-level staff or volunteers, other ELL teachers, mainstream teachers, and school administrators or higher-level personnel.
- *Formal Job Characteristics.* Formal job responsibilities include explicitly outlined structure and roles of the job, such as teaching and student load, curriculum and materials, and ongoing paperwork and meetings.
- *Informal Job Duties.* Informal aspects of the teacher role include providing emotional support for students and advocating for students with other school personnel. Additional duties these teachers take on outside of their teaching activities include maintaining relationships with parents, attending to the mental health needs of students, and providing students and families with daily living essentials.

Next, the potential items were reviewed for language and discussed with graduate students and faculty familiar with ELL settings and populations, as well as ELL teachers from Chicago Public Schools. Feedback was provided about the nature and clarity of the items and their placement into the ecological domains. Finally, we piloted the resulting measure with four teachers from the Chicago Public Schools.

The resulting ELL Teacher Stress Measure (ETSM) included 56 items falling into one of the four domains mentioned above. The domain of "Systemic Impacts" was comprised of 12 items, the "Social Support/Climate" domain of 10, the "Informal Job Duties" of 14, and the "Job Characteristics," of 20. One final item was an open-response item, in which participants could identify the occurrence and severity of additional stressors. The order of ETSM items was randomized.

The response scale includes two prompts for each item: (1) whether the teacher experiences the specific event (stressor: yes/no) in the last three months and (2) if experienced, how stressful the event was on a 5-point Likert scale (1 = not at all stressful to 5 = extremely stressful). This response scale was chosen because of its common use in the field of stress measurement more generally (Vinokurov et al., 2002).

3.1. Additional measures

First, a demographic measure was included in the survey for teachers, developed from a review of previous research with ELL teachers that identified specific demographic data, including age, gender, grade level, and number of years teaching. Additional questions about participants' teaching roles included subjects taught, questions about training and teacher certification, and setting in which they taught.

3.1.1. Teacher stress inventory

To assess the discriminant validity of the new ELL Teacher Stress Measure from a generic teacher stress measures, the TSI was selected. Used in 80 publications, this measure is the most established of the teacher stress inventories (Fimian, 1984). Because several of the subscales of the TSI represent outcomes of stress

Table 1
Description of previous stress inventories.

Measure	Description	Response scale	Stress domains represented[d]
Teacher Stress Inventory (Fimian, 1984)	63 items, 6 subscales • Personal/Professional Stressors • Professional Distress • Discipline and Motivation • Emotional Manifestations[a] • Biobehavioral Manifestations[a] • Physiological-Fatigue Manifestations[a]	1 (not relevant) to 4 (very relevant)[b,c]	Formal Job Characteristics
Index of Teaching Stress (Greene et al., 1997)	90 items, 2 subscales • Student Characteristics (47) • Teacher Characteristics (43)[a]	5-point Likert scale of stressfulness[b]	Formal Job Characteristics
Teacher Occupational Stress Factor Questionnaire (Moracco et al., 1982)	30 items, 5-factor • Professional Inadequacy[a] • Teacher-Principal Professional Relationships • Collegial Relationships • Group Instruction • Job Overload	1 (not stressful) to 5 (extremely stressful)[b]	Social Support/Climate Formal Job Characteristics
Teaching Events Stress Inventory (Cichon & Koff, 1980)	36-item index	ranking of items from 1 to 36[b,c]	Systemic Impacts Social Support/Climate Formal Job Characteristics

[a] Items represent outcomes of stress rather than stress events.
[b] Does not measure whether the stress event occurs (frequency).
[c] Does not measure severity of stress event.
[d] All possible domains: Systemic Impacts, Social Support/Climate, Formal Job Characteristics, Informal Job Characteristics.

rather than events per se, only three subscales of this inventory were used in the current study: Personal/Professional Stressors (e.g., "Lack of preparation time"), Professional Distress (e.g., "I receive an inadequate salary for the work I do") and Discipline and Motivation (e.g., "Authority rejected by students or staff"). The response scale for the TSI was a 6-point Likert scale assessing strength of stressor, from 0 = no strength, not noticeable to 5 = major strength, extremely noticeable. The internal reliability for the subscales of the TSI was .90, identical to previous research (Fimian & Fastenau, 1990).)

3.1.2. Maslach burnout inventory

To assess predictive validity, the Maslach Burnout Inventory (MBI-ES) was included in the survey packet (Maslach, Jackson, Leiter, Schaufeli, & Schwab, 1986). The MBI captures three dimensions of work burnout for teachers: emotional exhaustion, personal accomplishment, and depersonalization. The response scale for the MBI was a 7-point Likert scale assessing frequency, from 0 = never to 6 = every day. The internal reliability for the MBI in the current study was .89, which is consistent with past research (Worley, Vassar, Wheeler, & Barnes, 2008).

3.2. Participants

ELL teachers were recruited across the U.S.. The first effort for recruitment occurred at an annual ELL teacher convention in March 2011, with introductions to the project made to leaders of the organization and follow-up recruitment taking place through the various listservs utilized by the organization. The remaining source of participants included a snowballing technique that recruited ELL teachers from across the country, including contact with a national bilingual teachers' association. This national organization published information about the study in their quarterly newsletter, with several state-level affiliates disseminating information about the study via email and/or Facebook pages. Additional snowballing techniques involved sending information about the study to personal/professional contacts working in schools across the country. The primary author used the "sponsor" option on Facebook to pay

for information about the study to stay at the top of the newsfeed of all "friended" contacts. Friended contacts also disseminated information about the study on their Facebook and Twitter feeds. Finally, information about the study was also posted to the primary author's website.

Participants were limited to teachers who: (1) work in U.S. public schools, (2) specifically identified as either an ELL or Bilingual ELL teacher and (3) spend part of their day outside of the mainstream setting. Compensation for participation was in the form of a drawing for $25 Amazon gift cards from among eligible participants. A total of 231 participants logged into the online survey system, two of whom did not agree to the IRB consent process. An additional 27 participants did not teach in grades K-12 and were excluded on that basis. Of the remaining participants, 98 completed the full questionnaire and constituted the final sample.

In the final sample, forty participants (41%) endorsed the "ESL Teacher" label and 47 (48%) endorsed the "ELL Teacher" label. A majority was between the ages of 30–59 years of age. Eighty-five percent of the sample reported being female (n = 83 female, n = 14 male). Participants taught across a full range of grade levels, with 10% teaching at the kindergarten level, 48% teaching at the elementary level, 17% at the middle school level, and 25% at the high school level. Of those that responded further to the demographic questionnaire, most of the participants had been teaching 4–9 years (26%, n = 25), 10–14 years (21%, n = 21), 15–19 years (16%, n = 16), and 20–24 years (6%, n = 6). Ninety-one percent held state licensure for teaching ELL students. Twenty-nine states were represented, with the most representation coming from: Illinois (14%, n = 14), Virginia (13%, n = 13), California (11%, n = 11), and Oklahoma (10%, n = 10). The majority of the sample were those teaching in urban settings (46%, n = 45) and suburban settings (40%, n = 39), with 14% teaching in rural settings (n = 14) Academic subjects taught by participants had some variation, with 40% teaching English Language Arts only and 56% teaching multiple subjects across the curriculum. Finally, there was a range for number of language groups taught by participants in their classrooms: one language group (9%, n = 9), 2–3 language groups (10%, n = 10), 4–9 language groups (19%, n = 19), and 10 + language groups (14%, n = 14).

3.2.1. Procedure

Participants were given a Qualtrics link to fill out the packet of measures. Qualtrics is a web-based site that allows participants to easily access on-line surveys while data remains secure on the Qualtrics server. Instructions explained that it was expected to take less than 45 min to fill out the survey. No identifying information was collected with the survey data in order to keep responses anonymous. In order to ensure that participants met the inclusion criteria, sequential questions were asked about their teaching roles. If respondents did not meet the inclusion criteria, they were automatically exited from the survey and thanked for their time.

4. Results

To arrive at the final version of the ETSM, preliminary analyses of the 56-item version of the measure were conducted. First, we describe the process of item inclusion and exclusion based on the original 56 items in the measure. Next, the final version measure is presented in detail. Lastly, discriminant and predictive validity analyses are presented.

4.1. Developing the final version of the ETSM: exclusion/inclusion of items

The first step in developing the final version of the ESM was to compute the frequency and severity scores on the original 56 items in the ETSM. This analysis showed that the items reflected a range of frequency and severity scores and that these scores differed across the four domains into which they were organized. Following this preliminary analysis, the next step was to determine if the scale could be reduced in terms of items to reduce potential item redundancy and response burden without sacrificing the overall breadth and specific domains of the measure. The decision was made to retain items that represented a range of stress severity and frequency, including a representative sample of items on both the low-end and high-end of the rankings presented above, while preserving the domain structure of the measure. Criteria that were used for excluding items included: (1) analyzing correlations among all 56 items to see if any items were redundant, (2) removing items with no variability, (3) reevaluating the items to see if some were potentially more general to all teachers rather than more(s) specific to the unique experiences of ELL teachers, and (4) looking at items by domain, especially for those domains that had a high number of items, in order to identify additional redundancy or over-generalizations.

As a result of these combined analyses, 16 items were removed from the initial measure. First, no items were identified for exclusion via steps based on comparison of item correlations and lack of variability among items. Next, when items were analyzed by how unique they are to the experiences of ELL teachers specifically (e.g., in comparison to other groupings of teachers, such as mainstream teachers), 13 were identified for removal. Some examples of these items include, "Not having supplies necessary to do my job," "A school decision was made without my input that affected my classes," "Having discipline problems in my classroom," "Not having adequate time for curriculum planning, paperwork, and meetings," and "I used my own money to buy classroom supplies." Finally, two additional items were removed by analyzing the range (frequency by mean severity) for remaining items within the domains and identifying items with content that fell close to each other (step 4). Specifically, "Explaining to students school safety concerns, such as around heating elements, fire alarms etc …" and "I was not able to communicate with a student about a school or personal matter" were items that were identified as falling close to others in both frequency and mean severity. Further analysis

revealed that these two items were also reported to be not frequently occurring for teachers, not very stressful, and similar in nature to other items that were retained for the final measure.

4.2. The final measure

The descriptive statistics for the final version of the measure were similar to the original version of the measure. By domain, 8 items were retained for Systemic Impacts (f: $M = .35$, $SD = .23$; s: $M = 3.29$, $SD = .77$); Eight items were retained for the Social Support/Climate domain (f: $M = .44$, $SD = .29$; s: $M = 3.42$, $SD = .81$); Ten items were retained for the Formal Job Characteristics domain (f: $M = .35$, $SD = .21$; s: $M = 3.36$, $SD = .60$. Fourteen items were retained for the Informal Job Duties domain (f: $M = .37$, $SD = .21$; s: $M = 2.83$, $SD = .65$). (see Table 2).

ETSM items were next examined by domain in order to see how the domain structure reflected stress. With respect to frequency, the top −rated items spanned across each of the four domains, with six from the Informal Job Duties domain (43%), three from the Formal Job Characteristics domain (30%), five from the Systemic Impacts domain (63%), and one from the Social Support/Climate domain (13%). Mean severity of the stress items was also varied across the four domains, but differed in emphasis from the frequency scores. Here, seven of the most stressful rated items came from the Social Support/Climate domain, with the rest coming from the Informal Job Duties, Formal Job Characteristics, and Systemic Impacts domains at a lower rate. In particular, the Social Support/ Social Climate differences between relatively low frequency yet relatively high severity of potential stressors are striking. Overall, however, this distribution of frequency and severity scores both suggests the relevance of the four domains and the separation of frequency and severity of stressors.

In addition to variability across domains in the frequency and severity of stressors, there was also significant variability within the items themselves. For example, no items were rated low for both mean severity and frequency. Two items, "Not having adequate time for curriculum planning, paperwork, and meetings" and "Working after school and at home to get all of my job responsibilities done" were ranked by participants as among the most frequently occurring items and the most stressful items. In general, most of the items rated as highly stressful were also endorsed by more than 50% of participants (or, n = 50). However, some items were rated as frequently occurring but not highly stressful while others were rated as occurring less frequently but with greater reported stress. With respect to the former, For two items, "Teaching in an improvised or isolated space, such as hallways, stairwells, basements, or trailers" and "Not having a regularly

Table 2
Descriptive statistics for whole measures and domains.

Measure	M	SD
ETSM	.37 (f); 3.18 (s)	.19 (f); .58 (s)
Systemic Impacts	.35 (f); 3.29 (s)	.23 (f); .77 (s)
Social Support/Climate	.44 (f); 3.42 (s)	.29 (f); .81 (s)
Formal Job Characteristics	.35 (f); 3.36 (s)	.21 (f); .60(s)
Informal Job Duties	.37 (f); 2.83 (s)	.21 (f); .65 (s)
TSI	2.79	.77
Personal/Professional Stressors	3.30	.83
Professional Distress/Investment	2.64	.99
Discipline and Motivation	2.51	1.10
MBI	2.71	.81
Emotional Exhaustion	3.71	1.20
Personal Accomplishment	5.90	.83
Depersonalization	1.90	.99

N = 98. f = frequency, s = severity.

assigned classroom space throughout the day." were rated as stressful ($M = 3.64, SD = 1.33$ and $M = 3.54, SD = 1.43$, respectively), but were not endorsed as frequently occurring (n = 36 and n = 28, respectively). On the other hand, "I had to explain to a mainstream teacher about the circumstances of English Language Learner (ELL) students" occurred frequently (85) but were not perceived less stressful ($M = 2.82$), $SD = 1.00$). Importantly, the variability in the findings at both the domain and item level highlight the importance of separating the occurrence of a potential stressor from its perceived stressfulness.

4.3. Discriminant and predictive validity

Discriminant and predictive validity analyses were used to determine whether the ETSM captured stress that is particularly relevant to ELL teachers. Table 3 presents the correlations of the ETSM, TSI (3 subscales), and MBI with each other as well as their relationship to the demographics (see Table 3). For frequency, the ETSM was correlated only with the TSI ($r = -.26, p = .01$). For mean severity, the ETSM was correlated with both the TSI ($r = .48$, $p = .000$) and with the MBI ($r = .45, p = .000$). These findings suggest that the ETSM and TSI are each distinct measures as well as being significant predictors of burnout. All measures were unrelated to demographics, with the exception of age of teacher being negatively related to burnout (Maslach, Schaufeli, & Leiter, 2001).

To further assess the discriminant and predictive validity of the ETSM, multiple hierarchical regression analyses were then conducted. The prediction model included an examination of the importance of (i) demographic variables of age and gender in step one, (ii) the TSI in step two, and (iii) the ETSM in step three. Separate analyses for frequency and severity were conducted.

4.3.1. Severity

Findings support the discriminant and predictive validity of the ETSM with respect to severity. The overall model was significant ($F(4,91) = 15.62, p = .000$) and contributed 41% of the variance in the prediction of burnout (see Table 4). In step one, age was a significant predictor of burnout ($β = -.29, p = .006$) but gender nonsignificant ($β = -.13, ns$), with 9% of the variance accounted for in this step. For step two, the TSI was a significant predictor of burnout ($β = .54, p = .000$), with 28% of the variance accounted for in this step. Finally, for step three, the ETSM (severity) was also a significant predictor of burnout ($β = .23, p = .02$), with 4% of the variance accounted for this step. Thus, the ETSM severity ratings contributed variance to the prediction of burnout above and beyond that contributed by the TSI (see Table 4).

4.3.2. Frequency

A separate regression model was run for frequency. The regression model included (i) demographic variables (age and gender) entered in step one, (ii) the TSI entered into step two, and (iii) the ETSM frequency mean entered into step three, with the MBI entered as the outcome variable. The overall model was significant ($F(4,91) = 13.62, p = .000$) and contributed 37% of the variance in the prediction of burnout (see Table 5). For step two, the TSI was a significant predictor of burnout ($β = .54, p = .000$), with 28% of the variance accounted for in this step. For step three, the ETSM (frequency) was not a significant predictor of burnout ($β = .08, ns$) (see Table 5). Thus, the ETSM frequency of stressful events did not contribute distinctively to predicting burnout.

4.3.3. Severity by domain

To assess whether certain specific domains of the ETSM were more influential than others in predicting burnout, we then entered individual ETSM domains in the regression models in the place of the whole measure. Here, the prediction model included (i) demographic variables in step one, and (ii) four ETSM (mean severity) domains entered together in step two. For the final version of the ETSM domain model, the overall model was significant ($F(6,83) = 6.93, p = .000$) and contributed 33% of the variance in the prediction of burnout (see Table 6). In step one, both age ($β = -.39$, $p = .000$) and gender ($β = -.27, p = .007$) were significant predictors of burnout. For step two, only the final domain of Formal Job Characteristics was a significant predictor of burnout ($β = .29$, $p = .03$). The final versions of the Systemic Impacts ($β = .09, ns$), Social Support/Climate ($β = -.11, ns$), and Informal Job Duties ($β = .14, ns$) domains did not significantly contribute to the prediction of burnout.

4.3.3.1. Frequency by domain.
For frequency ratings, the prediction model included (i) demographic variables in step one, and (ii) four ETSM (frequency) domains entered together in step two. For the final version of the ETSM domain model, the overall model only trended towards significance ($F(6,89) = 1.93, p = .08$) and contributed 6% of the variance in the prediction of burnout (see Table 7). In step one, age was a significant predictor of burnout ($β = -.29, p = .006$) and gender nonsignificant ($β = -.13, ns$). For step two, none of the final ETSM frequency domains were significant in the prediction of burnout: Systemic Impacts ($β = .12, ns$), Social Support/Climate ($β = -.08, ns$), Formal Job Characteristics

Table 3
Correlation table of demographics by measure.

	1	2	3	4	5	6	7	8	9	10	11
1.ETSM (f)	—	−.82***	−.28**	−.08	−.01	−.00	−.22*	-.14	.11	−.01	.08
2.ETSM (s)		—	.54**	.48**	−.04	−.07	.05	.−.04	−.01	.03	.09
3.TSI			—	.57**	−.13	−.02	.01	.01	−.02	.00	−.02
4.MBI				—	−.26*	−.09	.16	-.03	−.06	−.18	.06
5.Age					—	−.16	−.18	.21*	−.17	.69**	.11
6.Gender						—	.14	-.13	−.02	−.15	−.14
7. Grade							—	-.10	−.19	−.08	−.08
8. Education								—	.00	.30**	.08
9.Licensure									—	−.21*	.08
10.Years Teaching										—	.11
11.Charter School											—
Mean	.39	3.18	2.79	2.71	2.97	.13	2.68	2.89	.09	3.40	.95
SD	.17	.58	.76	.81	1.22	.34	.92	.69	.29	1.70	.23

Note. N = 98. *p < .05. **p < .01. f = frequency, s = severity.
Gender (0 = female, 1 = male); Licensure (0 = yes, 1 = no); Charter School (0 = yes, 1 = no); Age (1 = 18–29; 2 = 30–39; 3 = 40–49; 4 = 50–59; 5 = 60+); Grade (1 = K; 2 = ES; 3 = MS; 4 = HS); Education (1 = HS; 2 = BA/BS; 3 = MA/MS; 4 = Doctoral Candidate; 5 = PhD); Years Teaching (1 = 1–3; 2 = 4–9; 3 = 10–14; 4 = 15–19; 5 = 20–24; 6 = 25–29; 7 = 30+).

Table 4
Discriminant validity model of ETSM (severity) predicting burnout.

Step/Variable	Original (56 items)			Final (40 items)		
	β	R^2_{change}	F_{change}	β	R^2_{change}	F_{change}
1. Demographic Variables		.09	4.36**		.09	4.36**
Age	−.29**			−.29**		
Gender	−.13			−.13		
2. TSI	.54***	.28	41.16***	.54***	.28	41.16***
3. ETSM (severity)	.24**	.04	6.51**	.23**	.04	5.95**
	$R^2 = .41, F(4,91) = 15.85, p = .000$			$R^2 = .41, F(4,91) = 15.62, p = .000$		

Note. Gender (0 = female, 1 = male).
*p < .10, **p < .05, ***p < .001.

Table 5
Discriminant validity model of ETSM (frequency) predicting burnout.

Step/Variable	Original (56 items)			Final (40 items)		
	β	R^2_{change}	F_{change}	β	R^2_{change}	F_{change}
1. Demographic Variables		.09	4.36**		.09	4.36**
Age	−.29**			−.29**		
Gender	−.13			−.13		
2. TSI	.54***	.28	41.16***	54***	.28	41.16***
3. ETSM (frequency)	.09	.01	.96	.08	.01	.89
	$R^2 = .38, F(4,91) = 13.65, p = .000$			$R^2 = .37, F(4,91) = 13.62, p = .000$		

Note. Gender (0 = female, 1 = male).
*p < .10, **p < .05, ***p < .001.

Table 6
ETSM domain model (severity) predicting burnout.

Step/Variable	Original (56 items)			Final (40 items)		
	β	R^2_{change}	F_{change}	β	R^2_{change}	F_{change}
1. Demographic Variables		.10	4.90**		.19	9.85***
Age	−.32**			−.39***		
Gender	−.12			−.27**		
2. ETSM		.27	8.76***		.15	4.64***
Systemic Impacts	−.05			.09		
Social Support/Climate	−.17			−.11		
Formal Job Characteristics	.36**			.29**		
Informal Job Duties	.35**			.14		
	$R^2 = .37, F(6,81) = 8.07, p = .000$			$R^2 = .33, F(6,83) = 6.93, p = .000$		

Note. Gender (0 = female, 1 = male).
*p < .10, **p < .05, ***p < .001.

Table 7
ETSM domain model (frequency) predicting burnout.

Step/Variable	Original (56 items)			Final (40 items)		
	β	R^2_{change}	F_{change}	β	R^2_{change}	F_{change}
1. Demographic Variables		.10	4.90**		.09	4.36**
Age	−.32**			−.28**		
Gender	−.12			−.13		
2. ETSM		.06	1.44		.03	.74
Systemic Impacts	.24			.12		
Social Support/Climate	−.11			−.08		
Formal Job Characteristics	−.24			−.20		
Informal Job Duties	.09			.09		
	$R^2 = .14, F(6,89) = 2.44, p = .03$			$R^2 = .12, F(6,89) = 1.22, ns$		

Note. Gender (0 = female, 1 = male).
*p < .10, **p < .05, ***p < .001.

(β = −.20, ns), and Informal Job Duties (β = .09, ns). Thus, the ETSM frequency of stressful events did not contribute distinctively to predicting burnout by domain.

In sum, the overall severity of ETSM stressors, and particularly the severity of stressors related Formal Job Characteristics, contributed unique variance to the prediction of burnout, but neither overall frequency nor frequency of stressors in any specific domain did so.

5. Discussion

The purpose of the current study was to develop an instrument

to measure ELL teacher work stress that captures the distinctive experiences of this understudied group of teachers. Conceptually, then, a necessary task in the development of the ETSM was to make sure that it captures a more complete ecological portrait of potential sources of stress than currently existing teacher stress measures and that these events were of particular relevance to ELL teachers. In addition to this conceptual focus, the ETSM was also designed to address methodological problems that exist in currently existing teacher stress measures. One such contribution was to include only potentially stressful events, not items that reflect the outcomes of stress. Additionally, the ETSM sought to distinguish between the occurrence of the stress event (frequency) and the stressfulness (mean severity) of the items. The development of the ETSM and the data all suggest the importance of addressing each of these issues.

First, the findings from the current study suggest that, in addition to the more generic stressors of teaching, ELL teachers also face potentially stressful events distinctive to their role. For example, "Preparing English Language Learner (ELL) students for federal and state (i.e., NCLB) mandated testing" and "Spending time meeting the targeted Annual Yearly Progress (AYP or smart goals) of my students" were both frequently endorsed and stressful systemic events. For Social Support/Climate events, "I had a conversation with a mainstream teacher who was not at all supportive of English Language Learner (ELL) students" was the most stressful item for ELL teachers. While not rated as highly stressful, "I had to explain to a mainstream teacher about the circumstances of English Language Learner (ELL) students" was a frequently endorsed social climate item. The most stressful Formal Job Characteristics events all revolved around experiences unique to ELL teachers, including "Dealing with inappropriate placement of students in my classes, regarding English Language Learner (ELL) level" and "Doing administrative paperwork that mainstream teachers didn't have to do." Finally, regarding Informal Job Duties, as noted above, events on this domain were among the least stressful of all events on the ETSM. However, "Arranging for translation services/liaisons to facilitate communication with parents and/or family members" and "Advocating for my students outside of the classroom with other school personnel" are examples of frequent and stressful events of ELL teachers. Taken together, these examples show that stress events on the ETSM are distinctive for ELL teachers and represent events not captured by other existing stress instruments.

Further, the ETSM provides an assessment of these varied stressors across multiple aspects of school ecology, such as those that evolve at the systemic and school climate level, as well as those that represent more "informal" job characteristics (such as spending time outside of the school day to set up drives for food, clothing, and other necessities, and developing supports for parents). Capturing a broad ecological portrait of ELL teacher stress also brings into focus the usefulness of the domain structure of the ETSM. When thinking about how the measure may be used in the future, it is likely that ELL teachers in a given system may experience stressors from multiple ecological levels that are captured by the ETSM. However, it may also be the case that stressors for ELL teachers in a given system are more concentrated around a specific domain.

Methodologically, the current measure was successful in focusing solely on potentially stressful events as opposed to reactions to events as found in other existing measures of teacher stress. In addition, the ETSM data strongly supports the value of separating the occurrence of events from their perceived stressfulness. While this is suggested in the broader stress literature, this distinction is not represented in existing teacher stress measures. Such a perspective provides distinctive information not available in existing teacher stress measures. With a separate response scale for frequency and mean severity on the ETSM, we find that there is wide variability in both the frequency and severity scores. In addition, with respect to predictive validity, we found that it was the perceived severity of stressful events rather than the frequency of their occurrence that predicted teacher feelings of burnout.

There are multiple implications of the ETSM for intervention as well as future research. For example, in the present study, the highest levels of severity of stress occurred in the Social Support/Climate domain, a finding consistent with previous research (e.g., Freedy & Hobfoll, 1994; Jones & Youngs, 2012). Thus, if this data represented a specific school system, intervention efforts would be targeted at building social support for ELL teachers at the school level. In addition, while social support may be identified as a target domain for intervention, other specific events may also be identified on a more micro level. For example, "I had to spend time differentiating instruction for a class of students who have a diverse range of learning abilities, language proficiencies, and needs" is a single event from the Formal Job Characteristics domain that was frequently endorsed and ranked as stressful in the current study. So a different intervention plan may target this more specific area for ELL teachers in a particular school or system. Finally, separation of the ETSM response scale into frequency and severity allows the instrument to provide more precise use for future users of the ETSM at the event level. Here, for example, knowing that specific events may occur frequently but are not seen as stressful, or vise versa, is useful data that can be used to stimulate local discussion of the "where" and "why" of stressors. This can, in turn, lead to efforts to ameliorate specific stressors.

Overall, the present study builds on previous work on the measurement of teacher stress both conceptually and methodologically, Conceptually it provides a multilevel ecological perspective on domains of teacher stress not specifically addressed in prior measures, and finds that teachers occupying different roles in schools, such as ELL roles, face distinctive as well as more generic sources of stress in their work environment. Methodologically, it adds to previous measurement efforts by making empirically and pragmatically useful distinctions between the occurrence of events and their stressfulness, as well as focusing solely on events themselves and not confounding them with reactions to events.

5.1. Limitations and future directions

While our data suggest that our sample was diverse in terms of location, level of school, and demographics, one obvious limitation to the current study is its size and representativeness. Though extensive efforts were made to recruit a larger sample, and 231 participants logged in to view the survey, only 98 completed it in full. The 42% completion rate is not unusual in comparison to traditional paper mailings, but may also be indicative of other factors, such as the perceived response burden of the survey overall, which took participants about 28 min to complete on average. In addition, those who did complete the survey were likely different from the general population of ELL teachers in some unknown way. These limitations should be taken into consideration for future use of online survey methodologies and in terms of the generalizability of current data.

Thus, a next step in the development of this measure is to increase the current sample size of ELL teachers across K-12 grade levels, geographical regions, and schools serving diverse ELL populations. Such work would further both the reliability and validity of the current measure using diverse populations and ecological contexts. In addition, sampling mainstream teachers who work with ELL students may uncover additional potential stressors as well as provide comparative information. Whether bilingual or multilingual ELL teachers experience stress events differently from

monolingual teachers is an additional important area for future investigation. This could be one factor that impacted the current sample and the higher level of stress found among suburban teachers. A final direction for this measure is to see how it relates to Special Education teachers, or perhaps developing a similar measure for use with this subset of teachers. These future directions will help us to understand how unique different teaching roles may really be, how stress events impact different teachers in different ways and over the long-term, and how differing aspects of school ecology contribute to these processes.

THE ETSM could also be used as a training tool for teachers, as it is an indicator of some of the job-related challenges they are likely to face. Pre-service teachers, for example, might review the ETSM and develop hypothetical strategies for coping with its varied events, or discuss such events with more experienced ELL teachers. In addition, this same training program could also be used to train mainstream teachers, since the majority will end up working with ELL students in their classrooms, or even within the school in some specific way (i.e., mandated testing), and with ELL teachers in their schools.

6. Conclusion

The purpose of the development of an instrument to measure ELL teacher stress is to add new meaning and depth to our understanding of the rich, multifaceted work lives of ELL teachers. As described above, ELL teachers typically have one of the most demanding jobs within the school, yet they have been often overlooked in previous examinations of the day-to-day functioning of the complex school setting. Therefore, this examination is intended to highlight the experiences of a select group of staff who are typically underrepresented in studies that focus on educational factors within the school context. Using a quantitative survey method, the development of an instrument to measure teacher stress investigates how ELL teachers define work stress, including the identification of stressors and the measure of how frequent and how stressful they are to teachers. In the end, while it is clear that ELL teachers are stressed, one teacher notes, "*Many of these questions are about the challenges that go into teaching. I have stayed in the profession for over 30 years. It is a great job.*"

Acknowledgement

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