

The Classroom Appraisal of Resources and Demands Inventory (CARD)

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The CARD consists of 84 items developed based on a review of literature on teacher stress as well as interviews with teachers and administrators (Lambert, O'Donnell, Kusherman, & McCarthy, 2006). Those two scales, Resources and Demands, allow for the formation of a stress score by determining the difference between the two scale scores. The classroom demands section examines how the classroom environment affects teachers. It consists of 35 items that ask teachers to rate the severity of demands based on various aspects of the classroom using a five point Likert scale ranging from 1, "Not Demanding," to 5, "Extremely Demanding." The Classroom Resources scale has 30 items that address the helpfulness of various school resources.

The CARD was developed to examine teacher perceptions of demands specific to their classroom and of the resources provided by their schools to cope with those demands. Stress researchers have defined resources as both material resources (money, materials, technical support from others, etc.) and personal resources (coping strategies, interpersonal skills, etc.) (Lazarus & Folkman, 1984). The CARD is based on transactional models of stress and coping, which focus on cognitive appraisals of an event and its meaning in relationship to one's well-being (Lazarus & Folkman, 1984). It uses a unique scoring system in order to identify teachers at risk for stress or burnout symptoms by dividing them into three groups, i.e., resources greater than demands, resources same as demands, and/or demands greater than resources.

Validity Evidence:

Several pilot studies have been conducted during the development of this instrument to measure construct validity and to ensure that the demand items and resource items were measuring distinct constructs. Across those studies, relatively low correlations have been

found ($r = -.208$ to $-.080$) (Lambert, McCarthy, & Abbot-Shim, 2001) between the two scale scores.

McCarthy, Lambert, O'Donnell, and Melendres (in press) examined if any of the variance in reported burnout symptoms among prekindergarten and elementary teachers was found (1) between schools, with individual/teacher perceptions of demands and resources aggregated to the group level, and (2) at the individual teacher within schools level, taking into account factors such as teacher perceptions of classroom resources and demands, coping resources and years of experience. The CARD was used to assess classroom resources and demands, the Preventive Resources Inventory (PRI) (McCarthy & Lambert, 2001) was used as a measure of teachers' psychological coping resources, and the Maslach Burnout Inventory (MBI) (Maslach, Jackson, & Leiter, 1997) to measure burnout symptoms. Data were collected from 451 prekindergarten and elementary teachers in 13 elementary schools in three adjacent counties in an urban region in the Southeastern United States with an overall response rate of 77.62%. Hierarchical linear modeling was used to facilitate variance decomposition of MBI items within teachers, between teachers, and between the 13 schools.

McCarthy et al. (in press) found that most of the variance in burnout scale scores, as measured by 22 items on the MBI within 451 respondents, was found to be between teachers within schools (93.15) and only 6.8% was found to be between schools. Each of the individual teacher-level variables as measured by the CARD was associated in the predicted direction with burnout symptoms. Emotional exhaustion was related to years at current school, demands, stress, and coping resources (36.1%). Depersonalization was related to stress and coping resources, Personal acceptance was related to demands and coping resources, and burnout was related to years at current school, demands, stress, and coping resources (37.3%). Being a first year teacher (as compared to being a teacher with more experience) was a significant predictor of Emotional Exhaustion (EE).

Based on the findings that individual differences among teachers within schools in perceptions of demands and resources were more predictive of burnout symptoms than differences in school context, the core concept of transactional models of stress by Lazarus and Folkman (1984) was confirmed: Stress responses occur if perceived demands outweigh perceived resources. The findings also show that the CARD is uniquely suited to measure and identify specific factors that contribute to individual teacher stress levels. Experts in the field of teacher stress research for many years have called for this type of measure (Kyriacou, 2001).

A study by Lambert, McCarthy, O'Donnell, and Melendres (2007) found high sample-specific reliability for both the Demands scale score (Cronbach's $\alpha=.92$) and for the Resources scale score ($\alpha=.95$). This study also yielded factor analysis results that contribute to confirming the construct validity of the two sections of the CARD (Resources and Demands).

For the Demands scale, a four factor solution emerged that accounted for 56.65% of the variance. The Administrative Demands subscale addresses demands associated with meetings, paperwork, assessments, and various non-instructional duties. The Availability of Instructional Materials subscale involves demands associated with access to materials and supplies. The Children with Problem Behaviors subscale addresses the demands associated with behavior management and interactions with children who present challenges to the learning environment. The Children with Other Special Needs subscale outlines demands involved with children who have needs in terms of English language acquisition or physical disabilities.

For the Resources scale, a four factor solution emerges that accounted for 71.54% of the variance. The Specialized Resources subscale refers to resources designed to help teachers with children who have special needs. The General Program Resources subscale allows the teachers to rate how helpful they perceive administrators, other teachers, general instructional materials, and staff development opportunities. The Additional Adults in the

Classroom subscale refers to the help and support teachers receive from parents and other volunteers in the classroom. The Support Personnel subscale addresses the helpfulness of individuals within the school system who are charged with providing assistance to teachers, particularly for working with exceptional children. The Instructional Resources subscale involves ratings of the helpfulness of the supplies and material resources that are available for the teachers. All of the subscales and the total score for the Resources section yielded sample-specific information with adequate reliability (.828 to .951).

In this study, criterion validity was also assessed. Associations were found in the predicted direction between the measure's scale scores and the classroom level number of children with problem behaviors and learning disabilities. More specifically, teachers who rated classroom demands as higher than resources also reported on average 2.020 more children with problem behaviors and 1.370 more children with learning disabilities in their classrooms than teachers who reported that classroom resources were at least equal to demands.

Using a sample of 317 preschool teachers in four southeastern states, Lambert, O'Donnell, Kusherman, and McCarthy (2006) found similar reliability and validity evidence for the preschool version of the CARD: A high Cronbach's alpha of .941 for the Demands section and a high Cronbach's alpha of .950 for the Resources section. Factor analysis results also confirmed the CARD's construct validity. High Cronbach's values for other student related demands (.846), for children with problem behaviors (.929), for administrative demands (.888), and for availability of instructional materials (.894) demonstrated results similar to those found with other samples (Lambert et al., 2007). Criterion validity was also established. Teachers who rated classroom Demands as higher than Resources, also reported on average 1.529 more children with problem behaviors.

Further evidence for the reliability and validity of the CARD is also discussed in Jazzar, Lambert, and O'Donnell (2007). They reported that teachers who expressed their

intention to leave teaching rated their classrooms as more demanding (effect size = .388), the resources available to them as less helpful (effect size = .344), and higher stress (effect size = .471) than teachers who intended to remain in the profession. They also reported that the most demanding components of the classroom environment were disruptive student behavior and the challenges associated with children with a variety of special needs.

In an attempt to provide further empirical evidence and support for the construct and concurrent validity of the CARD, Lambert, McCarthy, O'Donnell, and Wang (in press) analyzed stress and burnout data from a sample of 521 prekindergarten and elementary teachers by correlating CARD scores with other measures of variables that potentially impact teacher stress: general health, teacher efficacy, self-critical attitudes, and burnout symptoms. Lambert et al. (in press) classified the sample into high demands (24.2%), high resources (38.0%), and equal demand and resources (37.8%) groups and examined differences in burnout symptoms.

Moderately strong associations were found between CARD scale scores and MBI burnout scores ($r = .360$ to $.480$). The strongest associations with MBI scale scores were found with the Stress score: Emotional Exhaustion ($r = .460$), Depersonalization ($r = .336$), Lack of Professional Accomplishment ($r = .388$), and Burnout ($r = .480$). A confirmatory factor analysis was also conducted and found good fit statistics regarding the construct validity of the CARD. Cronbach's Alpha Reliability coefficients showed reliability for study 3 ($n=451$) and the current study ($n=521$) with Demands total score (.926-.926), Resources total score (.940/.940) and Stress (D-R) (.945-.943).

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