

Teachers engagement at work: An international validation study

by Edy Purwanto

Submission date: 07-Nov-2022 03:14PM (UTC+0700)

Submission ID: 1946949811

File name: eachers_Engagement_at_Work_An_International_Validation_Study.pdf (282.73K)

Word count: 10451

Character count: 58003



4

Teachers' Engagement at Work: An International Validation Study

Robert M. Klassen , Said Aldhafri , Caroline F. Mansfield , Edy Purwanto ,
Angela F. Y. Siu , Marina W. Wong & Amanda Woods-McConney

To cite this article: Robert M. Klassen , Said Aldhafri , Caroline F. Mansfield , Edy Purwanto ,
Angela F. Y. Siu , Marina W. Wong & Amanda Woods-McConney (2012) Teachers' Engagement
at Work: An International Validation Study, The Journal of Experimental Education, 80:4, 317-337,
DOI: [10.1080/00220973.2012.678409](https://doi.org/10.1080/00220973.2012.678409)

To link to this article: <https://doi.org/10.1080/00220973.2012.678409>



Published online: 13 Aug 2012.



Submit your article to this journal [↗](#)



Article views: 1446



View related articles [↗](#)



Citing articles: 18 View citing articles [↗](#)

MEASUREMENT, STATISTICS, AND RESEARCH DESIGN

Teachers' Engagement at Work: An International Validation Study

Robert M. Klassen

University of York, UK

Said Aldhafri

Sultan Qaboos University, Oman

Caroline F. Mansfield

Murdoch University, Australia

Edy Purwanto

Semarang State University, Indonesia

Angela F. Y. Siu

Chinese University of Hong Kong, China

Marina W. Wong

Hong Kong Baptist University, China

Amanda Woods-McConney

Murdoch University, Australia

This study explored the validity of the Utrecht Work Engagement Scale in a sample of 853 practicing teachers from Australia, Canada, China (Hong Kong), Indonesia, and Oman. The authors used multigroup confirmatory factor analysis to test the factor structure and measurement invariance

Address correspondence to Robert M. Klassen, Psychology in Education Research Centre, University of York, Heslington, York, YO10 5DD, UK. E-mail: robert.klassen@york.ac.uk

4

across settings, after which they examined the relationships between work engagement, workplace well-being (job satisfaction and quitting intention), and contextual variables (socioeconomic status, experience, and gender). The 1-factor version of the Utrecht Work Engagement Scale was deemed preferable to the 3-factor version and showed acceptable fit to the cross-national data. The 1-factor Utrecht Work Engagement Scale showed good internal consistency and similar relationships with workplace well-being and contextual variables across settings. The Utrecht Work Engagement Scale was invariant within broadly construed Western and non-Western groups but not across Western and non-Western groups. The authors concluded that the Utrecht Work Engagement Scale needs further development before its use can be supported in further cross-cultural research.

Keywords *culture, motivation, multicultural education, structural equation modeling, teaching*

WORK ENGAGEMENT RESEARCH is “flourishing” (Sonnentag, 2011, p. 29) with considerable recent attention paid to how people experience their daily work in a range of workplaces, including schools. Research conducted in education settings shows that teachers who are engaged in their work are more likely to display higher teaching performance (Bakker & Bal, 2010) and to have students who are engaged in learning (Roth, Assor, Kanat-Maymon, & Kaplan, 2007). Although the well-publicized demands of teaching have led to investigations of the negative aspects of teachers’ motivation such as stress and burnout, researchers are also interested in how positive motivation factors, such as engagement, develop and are fostered in diverse school settings. Defined as a “positive, fulfilling, work-related state of mind that is characterized by vigor, dedication, and absorption” (Schaufeli, Bakker, & Salanova, 2006, p. 702), work engagement has received considerable research attention in general workplace settings over the last decade. Workers who are engaged devote energy, time, and effort to work tasks (the *vigor* component), view their work as significant and meaningful (the *dedication* component), and fully concentrate on tasks when at work (the *absorption* component).

Researchers and education policy makers have begun to pay increased attention to teachers’ engagement for at least three reasons. First, in view of convincing evidence showing that teacher effectiveness is the critical factor driving variation in student achievement (Darling-Hammond & Youngs, 2002; Hindman & Stronge, 2009), and that engagement is linked with teacher effectiveness (Bakker & Bal, 2010), researchers and policymakers are keen to understand how to foster teachers’ work engagement in order to increase teacher effectiveness. Second, engaged teachers are believed to be less prone to burnout and associated health problems (Hakanen, Bakker, & Schaufeli, 2006), thus linking level of engagement inversely with teacher attrition. Simply put, engaged teachers are less likely to quit the profession or to require costly support for health-related problems. Third, work engagement is linked with productivity and workplace participation, meaning that engaged teachers are more likely to contribute to the life of the school and to take on additional duties beyond the classroom (Parker & Martin, 2009). Developing a better understanding of teachers’ engagement at work may lead to insight into ways to enhance teachers’ well-being and to build teachers’ effectiveness in the classroom.

Before researchers can investigate the links between teachers’ engagement and various outcomes, reliable and valid measures of engagement must be developed and tested. In addition, as educational research expands beyond the borders of culturally Western populations, measures developed in particular settings must be carefully examined across cultural settings before they can be reliably used beyond those settings. It is unfortunate that research on workplace

motivation reflects Arnett's (2008) concerns about many researchers' unstated assumption that "people anywhere can be taken to represent people everywhere and that the cultural context of their lives can be safely ignored" (p. 610).

In response, this article investigates a frequently used work engagement scale (Bakker et al., 2011)—the Utrecht Work Engagement Scale (UWES; Schaufeli et al., 2006)—with a cross-national sample of teachers from Western and non-Western settings. Up to this point, no research has examined the scale with teachers (or other professionals) across Western and non-Western settings. We examine the validity of the UWES by exploring measurement invariance and the relationship of engagement with job satisfaction and quitting intention with teachers from two culturally Western settings—Australia and Canada—and three diverse non-Western settings—China (Hong Kong), Indonesia, and Oman. Results from the study will lay a foundation for future teacher engagement studies and enable teacher motivation researchers to make informed decisions about the use of the scale in diverse cultural and educational contexts.

Definitions and Theoretical Frameworks

Teachers' engagement at work

Work engagement refers to the relationship of an employee with his or her work, and as such, is conceptually distinct from commitment to a role or employer, from the satisfaction gained from that work, and from continuation or quitting intentions (Macey & Schneider, 2008; Schaufeli & Salanova, 2011). The most recent conceptualizations of work motivation emphasize the key elements of energy and involvement in the workplace (Bakker, Albercht, & Leiter, 2011), and recognize that engagement is dynamic, not static, with fluctuations possible from day-to-day and week-to-week, and even from task-to-task (Sonnentag, 2011). Although engagement levels may fluctuate over time, engagement is conceptualized as a "persistent and pervasive affective-cognitive state that is not focused on any particular object, event, individual, or behavior" (Schaufeli et al., 2006, p. 702), and thus can be measured using static measures. Early conceptualizations stressed *positive psychology* aspects of work engagement (i.e., work engagement as the antithesis of burnout), but the most recent empirical findings suggest that although burnout is significantly inversely related to engagement ($-.24$ to $-.65$ according to Halbesleben, 2010), the two constructs are not simply mirror images of each other. For example, in practical terms, an individual may be un-engaged at work with no feelings of burnout, and vice versa (Schaufeli & Salanova, 2011). Work engagement, then, represents a distinct work-related variable that may fluctuate over time, but that is also relatively stable as a result of the effects of specific characteristics associated with occupational roles and organizations (Bakker & Bal, 2010).

From a self-determination theory (SDT) perspective, work engagement is a marker of intrinsic motivation and is related to positive outcomes for teachers and students (e.g., Bakker & Bal, 2010; Roth et al., 2007). Engaged teachers are motivated, display energy and effectiveness in completing tasks, and are able to deal with the complex demands that arise within the course of their workdays. In SDT theory, engagement reflects autonomously regulated forms of motivation that have been shown to lead to higher levels of performance, persistence, and creativity (Ryan & Deci, 2000). Teachers who possess low levels of engagement while teaching are more likely to feel externally regulated, and are motivated by a desire to gain rewards and avoid punishment (Meyer & Gagné, 2008). In contrast, teachers who are highly engaged display self-determined

teaching behaviors that reflect an internal locus of causality, and that may lead to higher levels of students' self-determined academic behaviors (Roth et al., 2007). Recent research using an SDT framework shows that teachers' engagement is fostered through a satisfaction of the basic psychological need for relatedness and, in particular, relatedness with students (Klassen, Perry, & Frenzel, 2012).

In this study we investigate teachers' engagement at work through a close study of the UWES, a scale that has been the subject of much research in a range of settings with participants from a variety of professions, including teaching. Although a number of work engagement measures have been created in the commercial domain, the UWES is the most frequently used work engagement measure in research domains (Bakker et al., 2011). The initial 17-item UWES was reduced to nine items by Schaufeli et al. (2006), who found the measure to be reliable across participants working in a wide range of occupations in 10 culturally Western, primarily European nations. Previous studies have shown the UWES to display acceptable levels of reliability and validity primarily with participants from European countries (e.g., Bakker, Hakanen, Demerouti, & Xanthopoulou, 2007; Hakanen, Bakker, & Schaufeli, 2006; Schaufeli et al., 2006; Seppälä et al., 2009), with the one-factor version showing better stability than the three-factor versions of the scale. Few studies have investigated the validity of the UWES in non-Western settings, although a recent study with Japanese nurses, and construction and electronics company employees (Shimazu et al., 2008) revealed that a one-factor nine-item version of the UWES provided a better fit to the data than a three-factor version, and that the UWES was related in predicted fashion with job satisfaction and burnout for the Japanese participants. To our knowledge, there have been no cross-cultural validation studies with teachers or other professionals examining the UWES across Western and non-Western settings. The use of participants from a single occupational category and from diverse cultural contexts provides a rigorous test of the reliability and validity of the measure, since differing cultural milieus may influence how the scale operates across settings.

Cultural beliefs and motivation

The present research examines samples of teachers from culturally Western and non-Western settings. Much variation exists within broad cultural categories (e.g., "Western" or "non-Western" or "Asian"), and also within countries (for example, residents of Hong Kong rate higher on individualism than residents of other regions in China). However, countries within broad heterogeneous regions (such as Asia) may share similarities on cultural dimensions in spite of differences in religion, economics, and history (Hofstede, 2001). Cultural beliefs and country factors (i.e., economic and political structures) influence motivation in the workplace. Cohen (2007) found links between work commitment and cultural values (e.g., individualism, power distance, and masculinity) for teachers in Israel, whereas Kirkman and Shapiro (2004) found significant relationships between workplace motivation and cultural beliefs across Western and non-Western countries. Similarly, Huang and Van de Vliert (2004) found that job satisfaction vary as a function of country-level individualism across a sample of 39 countries. In cross-national comparisons involving teachers from Western and Asian countries, Klassen and colleagues (Klassen et al., 2009; Klassen, Usher, & Bong, 2010; Klassen, Al-Dhafri, Hannok, & Betts, 2011) found that teachers' work-related beliefs (self-efficacy, job stress, and motivation for teaching) vary with cultural beliefs (i.e., level of collectivism) and country. Motivation beliefs typically influence behavior on an individual level, but widely shared cultural values within a country have been shown to influence the ways

that workplace motivation beliefs operate for teachers and other workers (e.g., Hui & Yee, 1999). In the case of teachers' work across cultures, it is possible that motivation beliefs that focus on the individual, such as work engagement, show lower levels of reliability and construct validity in collectivist settings in comparison with settings higher in individualism. It is not known whether teachers' work engagement can be appropriately measured across cultures with the UWES and whether the structure and content of the measure operates in the same way across contrasting settings.

Present Study

We chose to examine teachers' engagement using a cross-national framework in order to expand the use of a measure that has shown wide application and utility primarily in Western settings. Cross-national research extends the generalizability of existing theories and findings and integrates a research field by generating findings that allow for application to a wider range of cultural settings and groups (Gardiner & Kosmitzki, 2005). Findings of invariance across settings would provide support for the claim that the UWES is a useful tool for measuring teachers' engagement in diverse geographical and cultural settings, whereas findings of noninvariance would suggest that the measure may need further development before use in diverse settings. Findings of similarities in relationship between the UWES and job satisfaction and quitting intentions would provide preliminary support that teachers' engagement is understood in similar ways across contexts, and that the UWES plays a similar role in teachers' motivation across diverse contexts.

When conducting cross-national research, measures of psychological constructs cannot simply be translated into another language with the assumption that they can be interpreted the same way across groups. Evidence for measurement invariance must be provided; without it, the basis for comparison is weak, and the conclusions drawn from differences among groups cannot be easily interpreted (Yin & Fan, 2003). One strategy to explore cross-national equivalence is to use multigroup confirmatory factor analysis to provide support for the comparison of self-report instruments across diverse groups (Gregorich, 2006). In this study, we used multigroup confirmatory factor analysis to better understand the measurement invariance of a work engagement measure that has been shown to be valid only with groups of culturally Western or culturally non-Western workers. We follow up the tests of invariant factor structure with a cross-national exploration of the relationship between teachers' engagement, job satisfaction, and intention to leave the profession.

Our article poses and answers six questions:

1. Is the UWES internally consistent across selected international settings?
2. Is the one-factor or three-factor version of the UWES preferable for use across settings?
3. Is the UWES invariant across Western and non-Western settings?
 - a. Is the UWES invariant within Western settings?
 - b. Is the UWES invariant within non-Western settings?
4. What is the relationship of the UWES with other indicators of work motivation (job satisfaction and quitting intention) across settings?
5. Are contextual variables such as school-level SES, years of experience, and gender similarly related to work engagement across settings?
6. Can the UWES be recommended for cross-national and cross-cultural research?

METHOD

Participants and Procedures

To rigorously test the UWES, we collected data from convenience samples of teachers from two culturally Western settings (Australia and Canada) and three non-Western settings (China, Indonesia, and Oman). The locations for data collection were selected by the first author, who contacted researchers who had existing relationships with schools and school districts in each of the locations of interest. The five locations were purposefully chosen to represent multiple global regions, multiple language and cultural backgrounds, and diverse economic and social conditions. The resulting sample included practicing teachers from two culturally Western and three culturally non-Western countries: Australia (Western Australia; $n = 206$), Canada (Alberta; $n = 255$), China (Hong Kong; $n = 100$), Indonesia (Semarang; $n = 100$), and Oman (Muscat and surrounding areas; $n = 192$), total $N = 853$. Socioeconomic status (SES) of students in the school was reported by teachers using a 5-point scale ranging from 1 (*very low*) to 5 (*very high*) in relation to all students in the city or region surrounding their school.

Participants from Australia were 69% female, with a mean of 17.59 years of experience ($SD = 11.68$), and a school mean SES of 2.78 ($SD = 1.41$); participants from Canada were 77% female, with a mean of 14.05 years of experience, and a school mean SES of 2.81 ($SD = 1.02$); participants from China were 71% female, with a mean of 3.92 years of experience ($SD = 3.43$), and a school mean SES of 2.84 ($SD = 1.04$); participants from Indonesia were 74% female, with a mean of 19.76 years of experience ($SD = 8.73$), and a school mean SES of 3.06 ($SD = 1.07$); and participants from Oman were 51% female, with a mean of 8.39 years of experience ($SD = 4.66$), and a school mean SES of 3.15 ($SD = .69$). Participants taught a range of school subjects (e.g., languages [22%], multiple subjects [12%]; sciences [11%]) across a range of school levels.

We used convenience samples of teachers from a wide range of schools in each setting. In each setting (except Canada), researchers stratified their sample for SES and school levels, and invited schools to participate. Participants were teachers who were approached in their schools (Australia, China, Indonesia, Oman), or at teacher conferences (Canada), and asked to fill out a brief questionnaire on teacher motivation. Participation was restricted to teachers, and not teaching assistants or pre-service teachers. Researchers visited individual schools and distributed questionnaires to teachers at staff meetings or distributed the questionnaires to teachers individually (i.e., in staff mailboxes), according to local practices. In Canada, the sample was collected at a compulsory teachers' convention representing a wide variety of teachers and schools. Canadian participants were approached individually in a display hall, and invited to participate in a study on teacher motivation. Response rates were high across countries, ranging from 60% (Australia) to 95% (China and Indonesia). Missing data across all groups were minimal (less than 1%) and were replaced by group item means.

Translation

Research protocols were translated into Chinese (in China), Bahasa Indonesia (in Indonesia), and Arabic (in Oman) using conventional cross-cultural translation approaches. First, we used a team approach to the translation-back translation process that allows for multiple checks on functional and cultural validity (Peña, 2007). The team approach involves conducting multiple rounds of

translation of a measure through the use of a group of fluent bilingual speakers and writers in each setting. In general, the measure is translated from language A to B through an iterative process involving a first translation attempt by one translator, which is then checked and amended by a second (and sometimes third) translator, with differences resolved through discussion among the team members. The advantage of the team approach is the possibility of integrating multiple perspectives of meaning and translation, and agreement through consensus on difficult phrases and items (van de Vijver & Leung, 1997). Second, we used translators who were not only bilingual or multilingual, but who were experts in the research domain, thus ensuring that the translations were linguistically accurate and valid in substance and meaning (van de Vijver & Leung, 1997). Third, our translations were guided by a meaning-based approach in which changes in sentence structure and wording were allowed in the translated version to reflect differences in thought patterns and syntax differences between the original and translated version of the instrument (Larson, 1998). The independent translations resulted in general linguistic agreement, with only minor differences in wording of the items. Participants in Australia and Canada completed the survey in English.

Measures

Work engagement

The nine-item Utrecht Work Engagement Scale (UWES) with a 7-point scale ranging from 0 (*never*) to 6 (*always*) was used to measure teachers' engagement. The UWES was initially designed as a 17-item scale, but recent studies have shown that a shorter nine-item version may show more stable psychometric characteristics (e.g., Schaufeli et al., 2006; Seppälä et al., 2008; Shimazu et al., 2008). For this reason, we chose to investigate the nine-item measure that includes three items for each of the three hypothesized factors of vigor (e.g., "At my work, I feel bursting with energy"), dedication (e.g., "I find the work that I do full of meaning and purpose"), and absorption (e.g., "Time flies when I am working").

Job satisfaction

Two measures were used to show construct validity of the work engagement measure. Job satisfaction—perceptions of fulfillment derived from day-to-day work activities—is one of the most-studied workplace constructs, and is associated with higher levels of job performance (Judge, Thoresen, Bono, & Patton, 2001), and work engagement (e.g., Shimazu et al., 2008). Teachers report that job satisfaction is gained from the nature of day-to-day classroom activities, such as working with children, seeing students make progress, working with supportive colleagues, and overall school climate (Cockburn & Haydn, 2004). Teachers who are dissatisfied with their work display lower engagement and are at greater risk for leaving the profession (Evans, 2001; Ingersoll, 2001). Job satisfaction was measured using a 7-point Likert-type scale ranging from 0 (*never*) to 6 (*always*), with three items from Caprara, Barbaranelli, Borgogni, and Steca's 2003 study of teachers' satisfaction at work (e.g., "I am satisfied with choosing teaching as a career"). The measure has previously showed adequate reliability and validity (Caprara et al., 2003; Klassen et al., 2009).

Quitting intention

We measured intention to quit (i.e., occupational withdrawal) using a 7-point Likert-type scale ranging from 0 (*never*) to 6 (*always*) with three items from Hackett, Lapierre, and Hausdorf's 2001 occupational withdrawal intentions scale, (e.g., "I intend to quit the teaching profession"). Theorists argue that engagement and withdrawal are related but separate factors, with withdrawal (i.e., quitting) intentions resulting from low levels of engagement and satisfaction. Early work by Blau (1985) established the construct validity of the quitting intention variable by showing that quitting intention was conceptually and empirically related to career commitment and other work-related beliefs.

Analysis Plan

We first examined descriptive statistics—reliability coefficients, means, and standard deviations—for study variables (composite engagement and its three factors, job satisfaction, and quitting intention). Next, we used multi-group confirmatory factor analysis using AMOS 16.0 (Arbuckle, 2007) in order to test for the equivalency of the factorial measurement (i.e., item-level loadings on factors) across groups. We examined the invariance of the UWES with a series of tests. First, because the UWES is a relatively new measure, we considered whether the measure was better conceptualized across all five settings as a one-factor or a three-factor construct. Second, we examined the engagement measure across all five groups to investigate if the measure displayed invariance across the full range of settings. After testing initial one-factor and three-factor models, we established baseline models separately in each group. In establishing baseline models, the basic factor structure was maintained for all groups, with only error covariances allowed to differ across groups. The baseline models were used to test invariance across the five countries, and within the culturally Western countries (Australia and Canada), and the culturally non-Western countries (China, Indonesia, and Oman). Hierarchical goodness-of-fit was evaluated by the use of change in χ^2 ($\Delta\chi^2$), whereby a non-significant $\Delta\chi^2$ when constraints are imposed indicates invariance, and by changes in the comparative fit index (ΔCFI), whereby a ΔCFI less than or equal to .01 indicates invariance when additional constraints are imposed (Cheung & Rensvold, 2002). The use of ΔCFI is considered superior to the use of $\Delta\chi^2$ as a test of invariance (see Cheung & Rensvold for further explanation).

To test for further evidence of construct validity, we explored the bivariate relations between the UWES and job satisfaction and quitting intention. Based on previous research (e.g., Hakanen et al., 2006; Shimazu et al., 2008), we hypothesized that the UWES would be positively associated with job satisfaction in each setting and be inversely related with quitting intention. Similar patterns of correlations between work engagement and the other two indicators of occupational well-being would provide additional support for the cross-national construct validity of the UWES.

RESULTS

Internal Consistency and Item Means

To begin, we examine the internal consistency of the UWES across settings. Table 1 presents the internal consistency and item means of composite engagement, the three engagement factors,

TABLE 1
Reliabilities and Item Means of Engagement, Job Satisfaction, and Quitting Intentions Across Settings

	Australia n = 208			Canada n = 256			China (Hong Kong) n = 100			Indonesia n = 100			Oman n = 192		
	α	M	SD	α	M	SD	α	M	SD	α	M	SD	α	M	SD
Engagement (composite)	.93	4.77	0.92	.88	4.90	0.68	.93	4.04	0.97	.81	5.22	.70	.90	4.88	1.04
Vigor	.88	4.44	1.12	.82	4.58	0.89	.82	3.81	1.09	.74	5.32	.83	.71	4.86	1.08
Dedication	.87	5.00	0.95	.80	5.10	0.71	.87	4.19	1.04	.81	5.45	.79	.83	4.69	1.34
Absorption	.84	4.87	0.96	.69	5.01	0.76	.80	4.12	1.03	.63	4.89	.90	.80	5.10	1.10
Job satisfaction	.86	4.92	1.04	.82	5.09	0.77	.84	3.89	1.25	.65	5.41	.68	.81	4.61	1.51
Quitting intention	.86	3.79	4.25	.82	4.13	4.08	.91	4.78	3.73	.55	0.91	2.16	.88	7.02	4.39

job satisfaction, and quitting intention for the five settings. The composite engagement measure showed very good internal consistency across the five settings, ranging from $\alpha = .81$ in Indonesia, to $\alpha = .93$ in Australia and China, with a mean α of $.89$ across groups. Internal consistency for the job satisfaction and quitting intentions measures were adequate in four of five settings, but poor for Indonesian participants (job satisfaction, $\alpha = .65$; quitting intention, $\alpha = .55$). Internal consistency of the three factors of engagement was generally adequate: vigor, mean $\alpha = .79$; dedication, mean $\alpha = .84$; absorption, mean $\alpha = .75$. Thus, the answer to our first research question is that the UWES was generally internally consistent across Western and non-Western settings, with the composite measure showing strong internal consistency and the individual factors showing moderate internal consistency.

Item means showed factor scores on dedication to be highest in four of five setting (in Oman, the mean score for absorption was higher), similar to the pattern of results from Schaufeli et al. 2006. Overall, scores in Hong Kong were systematically lower than in other settings, reflecting the modest or self-effacing bias in East Asian settings noted by Heine (2004) and others.

Factor Structure

Next, we turn to the question of the three-factor versus one-factor versions of the UWES (see Table 2). We included three measures of goodness-of-fit: χ^2/df ratio, wherein a ratio < 3.0 indicates a good fit; CFI, where $> .90$ indicates a good fit, and root mean square error of approximation (RMSEA), where $< .09$ or $< .10$ suggests a well-fitting model (e.g., Arbuckle, 2007; Blunch, 2008; Byrne, 2004). Comparisons of the three-factor and one-factor models yielded equivocal results, consistent with previous studies (e.g., Schaufeli et al., 2006; Shimazu et al., 2008). Neither the three-factor nor one-factor initial models fit the data well across groups (three-factor $\chi^2/df = 4.45$; one-factor $\chi^2/df = 5.63$). Baseline models were consequently established, following the direction of Byrne (2004), whereby we added group-specific correlated errors based on the modification indices, item-scale characteristics (e.g., adjacent items on a scale), and on similarities in wording among the items.

The three-factor baseline models showed good fit for the Australian and Indonesian data (e.g., $\chi^2/df = 2.56$, RMSEA = $.09$ for Australia; $\chi^2/df = 1.19$, RMSEA = $.04$ for Indonesia), modest fit for the China and Oman data (e.g., $\chi^2/df = 2.13$, RMSEA = $.11$ for China; $\chi^2/df = 2.22$, RMSEA = $.10$ for Oman), and poor fit for the Canadian data (e.g., $\chi^2/df = 4.80$; RMSEA = $.12$). The fit indices for the three-factor model in the combined settings were acceptable ($\chi^2/df = 2.59$, CFI = $.96$, RMSEA = $.04$). The one-factor baseline models showed good fit for the Canadian, Chinese, and Indonesian data, but modest fit for the Australian and Oman data (RMSEA = $.10$ in each setting). The fit indices for the one-factor model in the combined settings showed some improvement over the three-factor model ($\chi^2/df = 2.12$, CFI = $.97$, RMSEA = $.04$). We decided to proceed with further analyses of the one-factor model instead of the three-factor model based on three considerations: (a) the internal consistency was stronger for the one-factor model, (b) the baseline one-factor model proved a better overall fit to the data in the five settings, and (c) previous researchers have argued for the use of the one-factor UWES (e.g., Seppälä et al., 2009; Shimazu et al., 2008). Thus, the answer to our second research question is that the one-factor version of the UWES was preferable to the three-factor version for our cross-national samples. Subsequent analyses of the engagement scale are based on the one-factor version of the UWES.

2
TABLE 2
 Model Fit: Initial CFA Basic Model and Baseline Models for All Groups and Across Multiple Groups

<i>Model</i>	χ^2	df	p	χ^2/df	CFI	RMSEA	$\Delta\chi^2$
Three-factor initial models							
Australia	166.92	24	<.001	6.96	.90	.17	
Canada	120.88	24	<.001	5.04	.92	.13	
China	61.93	24	<.001	2.58	.95	.13	
Indonesia	71.16	24	<.001	2.97	.87	.14	
Oman	113.22	24	<.001	4.72	.91	.14	
Combined groups	534.18	120	<.001	4.45	.91	.16	
Three-factor baseline models							
Australia ($\delta_{1,2}, \delta_{6,8}, \delta_{8,9}$)	53.76	21	<.001	2.56	.98	.09	113.16(3)**
Canada ($\delta_{6,8}$)	110.40	23	<.001	4.80	.92	.12	10.48(1)*
China ($\delta_{4,5}$)	48.99	23	.001	2.13	.96	.11	12.94(1)**
Indonesia ($\delta_{1,2}$)	27.37	23	.24	1.19	.99	.04	43.79(1)**
Oman ($\delta_{2,4}, \delta_{6,7}, \delta_{6,8}$)	46.62	21	.001	2.22	.97	.10	66.62(3)**
Combined groups	287.12	111	<.001	2.59	.96	.04	247.06(9)**
One-factor initial models							
Australia ($n = 208$)	236.69	27	<.001	8.77	.86	.19	
Canada ($n = 256$)	255.78	27	<.001	9.47	.80	.18	
China ($n = 100$)	109.25	27	<.001	4.05	.88	.18	
Indonesia ($n = 100$)	75.32	27	<.001	2.79	.86	.13	
Oman ($n = 192$)	159.67	27	<.001	5.91	.86	.16	
Combined groups ($N = 856$)	760.21	135	<.001	5.63	.84	.18	
One-factor baseline models							
Australia ($\delta_{1,2}, \delta_{7,8}, \delta_{8,9}$)	68.73	24	<.001	2.86	.97	.10	167.96(3)**
Canada ($\delta_{1,2}, \delta_{8,9}$)	46.31	25	.006	1.85	.98	.06	209.47(2)**
China ($\delta_{1,2}$)	41.76	26	.03	1.61	.98	.08	67.49(1)**
Indonesia ($\delta_{1,2}$)	34.78	26	.12	1.34	.98	.06	40.54(1)**
Oman ($\delta_{1,2}, \delta_{3,4}$)	76.06	25	<.001	3.04	.95	.10	83.61(2)**
Combined groups	267.76	126	<.001	2.12	.97	.04	492.45(9)**
Five group CFA (one-factor; $n = 856$)							
Factor structure equal (unconstrained)	267.76	126	<.001	2.12	.97	.04	
Factor loadings equal	401.45	158	<.001	2.54	.95	.05	133.69(32)**
Factor variances (and loadings) equal	454.96	162	<.001	2.81	.94	.05	53.51(4)**
Western settings CFA (one-factor; $n = 464$)							
Factor structure equal (unconstrained)	115.05	49	<.001	2.35	.98	.07	
Factor loadings equal	119.92	57	<.001	2.10	.98	.06	4.87(8)
Factor variances (and loadings) equal	142.30	58	<.001	2.45	.97	.07	22.38(1)**
Non-Western settings CFA (one-factor; $n = 392$)							
Factor structure equal (unconstrained)	152.60	77	<.001	1.98	.96	.06	
Factor loadings equal	187.68	93	<.001	2.02	.95	.06	35.08(16)*
Factor variances (and loadings) equal	203.85	95	<.001	2.15	.95	.06	16.17(2)**

Note. CFI = comparative fit index; RMSEA = root mean square error of approximation.

* $p < .01$. ** $p < .001$.

Tests of Invariance

Tests of invariance were conducted in order to test the UWES across samples from the five countries. After examining the measure across the five settings, we tested the measure in Western settings (Australia and Canada) and non-Western settings (China, Indonesia, and Oman).

Complete sample

The unconstrained model (consisting of the baseline models for all five settings) showed a good fit, $\chi^2/df = 2.12$, CFI = .97, RMSEA = .04, suggesting a common factor structure across the five settings. Constraining the factor loadings across the five settings resulted in a drop in fit, $\Delta\chi^2$ of 133.69 ($\Delta df = 32$), $p < .001$, $\Delta CFI = .02$, suggesting that factor weights were non-invariant across the five settings. Constraining factor variances yielded further significant changes in fit, $\Delta\chi^2$ of 53.51 ($\Delta df = 4$), $p < .001$, $\Delta CFI = .01$, suggesting non-invariance in structural variances across the five settings. Invariance testing across the five groups of teachers suggested that the one-factor UWES does not operate in a similar way across our samples of teachers. Thus, the answer to our third question is that the UWES is not invariant across Western and non-Western settings.

Western settings

We tested invariance of the UWES across samples of teachers from Australia and Canada. The unconstrained model (consisting of the baseline models for the two groups) showed a good fit, $\chi^2/df = 2.35$, CFI = .98, RMSEA = .07, suggesting a common factor structure across the two groups. Constraining the factor loadings across the two settings resulted in an insignificant drop in fit, $\Delta\chi^2$ of 4.87 ($\Delta df = 8$), $p = ns$, $\Delta CFI = 0$, suggesting that factor weights were invariant across the two settings. Constraining factor variances yielded a significant change in fit, $\Delta\chi^2$ of 22.38 ($\Delta df = 1$), $p < .001$, but no change in CFI ($\Delta CFI = 0$), providing evidence of invariance in structural variances across the two settings. Invariance testing across the two groups of Western teachers suggested that the one-factor UWES operates in a similar way across samples of teachers from Australia and Canada. Thus, our results show that the UWES showed partial invariance across samples of teachers from two culturally Western settings.

Non-Western settings

The invariance of the UWES was tested across samples of teachers from three non-Western countries: China, Indonesia, and Oman. The unconstrained model (consisting of the baseline models for the three settings) showed a good fit, $\chi^2/df = 1.98$, CFI = .96, RMSEA = .06, suggesting a common factor structure across the three groups. Constraining the factor loadings across the three settings resulted in a drop in fit, $\Delta\chi^2$ of 35.08 ($\Delta df = 16$), $p = .01$, but an acceptable (Cheung & Rensvold, 2002) change in CFI ($\Delta CFI = .01$), suggesting that factor weights were largely invariant across the three settings. Constraining factor variances yielded a significant change, $\Delta\chi^2$ of 16.17 ($\Delta df = 2$), $p < .001$, but no change in CFI ($\Delta CFI = 0$), providing evidence of invariance in structural variances across the three settings. Invariance testing across

the three groups of non-Western teachers suggested that the one-factor UWES shows partial invariance across samples of teachers from China, Indonesia, and Oman.

Item loadings

Table 3 presents standardized factor pattern coefficients (λ s) and interfactor correlations (ϕ s) for the nine items of the UWES. All pattern coefficients loaded significantly onto the hypothesized latent factor and displayed adequate to high factor loadings, ranging from $\lambda = .44$ to $\lambda = .93$, with mean $\lambda = .74$. Individual country mean item loadings ranged from .64 (Indonesia) to .83 (Australia).

Relationship of UWES With Job Satisfaction and Quitting Intention

Next, to provide evidence of construct validity we explored the relationship of engagement with other indicators of work motivation, namely job satisfaction and quitting intention (see Table 4). The overall pattern of results supported our expectations, with significant positive relationships between engagement and job satisfaction ($\bar{r} = .74, p < .001$) and significant negative relationships between engagement and quitting intention ($\bar{r} = -.39, p < .001$). The direction of relationships among variables was the same in each setting, and the magnitude of the relationship was similar across settings, ranging for engagement-job satisfaction from $r = .56$ in Indonesia, to $r = .77$ in Australia, and for engagement-quitting intention from $r = -.20$ in Indonesia to $-.45$ in Australia.

TABLE 3
Standardized Pattern Coefficients (λ s) and Interafactor Correlations (ϕ s) for Teacher Engagement Across Settings

	Australia	Canada	China (Hong Kong)	Indonesia	Oman
Item content					
Vigor					
1. At my work, I feel bursting with energy	.85	.90	.96	.50	.83
2. At my job, I feel strong and vigorous	.91	.92	.92	.60	.86
5. When I get up in the morning, I feel like going to work	.81	.59	.59	.79	.49
Dedication					
3. I am enthusiastic about my job	.92	.83	.93	.58	.86
4. My job inspires me	.90	.87	.77	.78	.86
7. I am proud of the work that I do	.67	.56	.79	.78	.69
Absorption					
6. I feel happy when I am working intensely	.81	.51	.83	.83	.67
8. I am immersed in my work	.79	.73	.90	.47*	.86
9. I get carried away when I am working	.77	.75	.57	.44*	.71
Interafactor correlations (ϕ s)					
Vigor - dedication	.90	.76	.85	.95	.78
Vigor - absorption	.78	.51	.79	.85	.82
Dedication - absorption	.85	.71	.97	.82	.92

Note. * $p = .05$. Unmarked coefficients were significant at $p < .001$.

TABLE 4
Correlations Between Engagement (Composite) and Job Satisfaction and Quitting Intention

	<i>Job satisfaction</i>	<i>Quitting intention</i>
Australia	.77**	-.45**
Canada	.67**	-.33**
China	.71**	-.43**
Indonesia	.56**	-.20*
Oman	.75**	-.41**
Total	.74**	-.39**

Note. * $p < .05$. ** $p < .01$.

In comparison, Shimazu et al. (2008) found work engagement to be positively and significantly correlated with various dimensions of job satisfaction ($r_s = .18$ to $.47$) and professional efficacy ($r = .50$). In response to our fourth research question, the results thus provide evidence that the UWES is predictably and significantly related to other indicators of work motivation.

Relationship of UWES With SES, Years of Experience, and Gender

Our final analysis involved examining the relationship of the UWES with three contextual factors: SES, teachers' years of experience, and gender. The one-factor UWES was not significantly correlated with SES for the overall sample ($r = .03$, $p = .41$), or for any of the individual samples. In contrast, there was a significant but modest correlation between one-factor engagement and years of experience across groups ($r = .16$, $p < .001$). This result is consistent with the findings of Schaufeli et al. (2006), who found significant but weak correlations between workers' ages and engagement (median $r = .12$). However, the significance of the correlations varied by country, with significant relationships between engagement and years of experience found only in Canada ($r = .15$) and Oman ($r = .17$), but not in Australia, China, or Indonesia. Therefore, based on our data, we conclude that the relationship between work engagement and teachers' years of experience is not yet decided. (It should be pointed out that the samples from China and Oman had restricted years of experience in comparison to the other three national samples.)

To complete the analysis, we looked at the relationship between teachers' gender and engagement. For the overall sample, results from univariate ANOVA showed no overall effect for gender, $F(1, 852) = 2.20$, $p = .14$, partial $\eta^2 = .003$, with female $M = 43.68$ ($SD = 7.66$) and male $M = 42.23$ ($SD = 9.43$). However, the interaction between country and gender was significant, $F(4, 852) = 2.75$, $p = .3$, partial $\eta^2 = .01$, and so we looked further at the individual results by country. Individual country comparisons revealed no significant gender differences in four of five settings, with female teachers in Oman ($M = 45.97$, $SD = 6.87$) showing significantly higher engagement than male teachers ($M = 41.85$, $SD = 11.18$), $F(1, 191) = 9.59$, $p = .002$, partial $\eta^2 = .05$. Thus, in response to our sixth research question, we found no relationship between SES and teachers' work engagement, a modest positive relationship for teachers from Canada and Oman between teaching experience and work engagement, and gender differences for work engagement only in one of five settings. Overall, we found modest evidence of three contextual factors' influence on teachers' work engagement across settings.

DISCUSSION

Studying the engagement of teachers is important because engaged teachers are more effective teachers (Bakker & Bal, 2010), and are more likely to foster student engagement (Roth et al., 2007). Furthermore, studying teachers' engagement across national and cultural boundaries is worthwhile because it allows researchers to investigate how engagement might be cultivated in a wide range of settings, paving the way for understanding engagement as a universal motivation factor. Our study was conducted in order to examine the validity of a popular work engagement scale with samples of teachers from five countries. The novel contributions of the study are twofold: the study is the first to focus solely on teachers' engagement and the related motivation variables of job satisfaction and quitting intention; second, the study is the first to test work engagement across samples of teachers from Western and non-Western settings. Results from the study provide evidence about the usefulness of the UWES in its current form for use in cross-national studies.

The nine-item version of the UWES showed higher levels of internal consistency and factor structure when the scale was constituted as a one-factor, rather than three-factor scale, consistent with results from some previous studies (e.g., Schaufeli et al., 2006; Shimazu et al., 2008), although the three-factor version has been shown to be acceptable in some settings (e.g., Sepällä, 2009). Results from previous studies were consistent with our results. For example, Schaufeli et al. (2006) found similar modest relationships between the UWES and worker age. Scores on the dedication factor were typically higher across settings than for vigor and absorption, similar to findings by Schaufeli et al. (2006). Testing the factor structure across groups resulted in equivocal results: in some settings the three-factor version of the scale was acceptable (i.e., in Australia and Indonesia), but not in other settings (i.e., in Canada and China). We agree with Schaufeli et al. that the one-factor version of the scale may be preferable for use across settings, but the decision is not so easily made for cross-cultural research when the stability of the factor structure appears to vary depending on setting. If use of the three-structure version of the scale is preferred; for example, if the research question pertains to the influence of vigor or dedication on outcome variables, researchers cannot assume the stability of the three-factor version, and should first test the factor structure of the scale in a particular context.

As we expected, teachers' engagement at work was related to the satisfaction they derive from teaching, and to their expectations about quitting the profession. Indeed, previous studies have shown that engaged workers are usually satisfied workers (e.g., Shimazu et al., 2008); our research showed that this relationship holds true across national and cultural boundaries. Engagement and satisfaction are not synonymous, but they are highly correlated, and our data suggests that teachers that report high levels of engagement at work also report higher levels of job satisfaction across five diverse settings. Perhaps more importantly, engaged teachers were less likely to report the intention to leave the profession. Teacher attrition is an international concern (Organisation for Economic Co-operation and Development, 2005), and our results suggest that lower levels of engagement are related to higher levels of intention to leave the profession. Of course, the interpretation of the relationship between engagement and quitting intention is open to discussion; some degree of attrition of teachers with low engagement is probably desirable.

The relationships between engagement and contextual variables such as SES, years of experience, and gender were modest and inconsistent across settings. Although a recent study found evidence of an inverse relationship between school-level SES and teachers' exhaustion

(Klusmann, Kunter, Trautwein, Lüdtke, & Baumert, 2008), the same study found no significant relationship between SES and teachers' engagement. Our results were similar, with no significant relationship between school SES and teachers' reported levels of engagement. Klusmann et al. (2008) conclude that exhaustion is closely related to job demands (such as the demands associated with teaching in low-SES settings), whereas teachers' engagement is more closely related to the job resources that are made available to teachers. Job resources for teachers are not dependent on the economic background of students, and comprise people-factors such as job control, administrator support, school-level communication, and organizational climate (Bakker et al., 2007). Our finding of a lack of relationship between SES and aspects of teacher motivation mirrors findings from previous studies in diverse settings (e.g., Klassen et al., 2008; Klusmann et al., 2008).

Years of teaching experience was weakly associated with level of engagement in two samples, but showed no significant relationship in the remaining samples. Our findings are consistent with the findings of Schaufeli et al. (2006) who found similarly modest relationships between work engagement and workers' age. One possible explanation of the weak relationship between age/experience and engagement may be found in the shape of the trajectory of the relationship: Klassen and Chiu (2010) showed that teachers' self-efficacy increased from early to mid-career, but then declined in late career. Teachers' engagement may show a similar inverted U-shaped pattern, but the data in the present study were not sufficient to test this hypothesis. Finally, the relationship of gender and work engagement was not very strong, with the only significant difference found with the Omani sample, where female teachers were significantly more engaged than male teachers. Some previous researchers have noted the pattern of higher levels of engagement in female teachers (e.g., Klusmann et al., 2008), whereas other studies have found mixed results across samples (e.g., Schaufeli et al., 2006). In the present study, the low effects cannot be considered meaningful, especially with the gender imbalance found in most of our samples.

Limitations

We make no claim that the samples chosen in this study are representative of teachers from broad and heterogeneous regions of the world; rather, we chose culturally and geographically diverse settings in an attempt to test the universality of the teacher engagement scale across a diversity of settings. Choosing representative samples for broad categories such as "Western" and "non-Western" or "Asian" was not our goal, and is practically unfeasible, but our results do provide initial evidence that the UWES displays similarities (in internal consistency, and in relationships with other motivation variables), and differences (lack of multi-group invariance) for participants from a diverse range of settings. Furthermore, our samples were convenience samples that were not matched for age, teaching level, or school setting (i.e., urbanity). We contend that testing the UWES in dissimilar settings is a rigorous test of the properties of the instrument that yield useful results about its validity in authentic school environments.

It should be highlighted that participants in the study shared the demographic profile of employment as teachers, with most participants sharing the experience of working in schools and teaching children. In previous cross-national comparisons of the UWES, a shared occupational background among participants was not the case (e.g., Schaufeli et al., 2006). Nevertheless, differences in sample characteristics across groups may have influenced our findings. For example, the sample groups varied on mean years of experience, ranging from 3.92 years of experience in China to 19.76 years in Indonesia, with a modest correlation between work engagement and

years of experience. The magnitude of the experience-engagement relationship in our study is similar to the one found by Schaufeli et al. (2006) who concluded that "the relationship with age is so weak that it can hardly be considered meaningful" (p. 713). We are less emphatic in our dismissal of the relationship: for teachers, work engagement may vary as a function of age and career stage in ways similar to self-efficacy, and may show increases and declines across career stage (e.g., Klassen & Chiu, 2010). Further research investigating developmental differences in engagement for new, mid-career, and veteran teachers is warranted.

Practical Implications

Our results suggest that teachers who report feeling engaged at work in diverse settings are more satisfied with their careers, are less likely to ponder quitting the profession, and are more likely to positively influence student achievement (Bakker & Bal, 2010). Recent studies have deepened understanding that teachers' engagement can be conceptually and empirically linked to job outcomes and student performance, but there is less understanding about how to boost teachers' engagement at work. Two theoretical models might be useful in considering ways to boost teachers' engagement. Bakker and colleagues (e.g., Bakker et al., 2007) propose a JD-R (job demands-resources) model whereby workers' well-being is influenced by the balance of job demands that induce stress and burnout, and job resources, characterized by the psychological, social, or organizational aspects of work that reduce job demands and increase personal development. Job resources are proposed to act as buffers that alleviate the influence of job demands on work engagement. The demands of teaching may be universal and unavoidable, but job resources such as autonomy, social support, coaching, and feedback can be fostered through careful attention to professional support groups, open communication from administrators, and opportunities for autonomy-building through professional development (Bakker et al., 2007; Parker & Martin, 2009).

The second theoretical model that provides a framework with which to build teachers' engagement is self-determination theory (SDT; Ryan & Deci, 2000), in which teachers' intrinsic motivation is fostered by perceptions of autonomy support from organizations and administrators. In this model, engagement is boosted when teachers' basic psychological needs for autonomy, relatedness, and competence are fostered through opportunities for decision-making, meaningful relationships at work, and feelings of professional competence derived through professional growth. Teachers' need for relatedness, and especially relatedness with students, is linked with level of engagement (Klassen et al., 2012). Students benefit from healthy relationships with teachers (e.g., Jennings & Greenberg, 2009), but teachers are also more engaged in their work when strong teacher-student relationships are built. The two theoretical frameworks (JD-R and SDT) share an emphasis on the importance of developing teachers' professional skills as a means of enhancing engagement, resulting in lower attrition rates for teachers, and improved student performance.

Future Research

We see two avenues for future development of measures that assess teacher engagement. The UWES is not a context-specific measure tailored to the work performed by teachers in schools, and future measures of teachers' engagement should contextualize engagement by examining

how teachers are engaged in the act of teaching as well as in teaching-related activities outside of the classroom (e.g., planning lessons, grading student work, and mentoring and coaching students outside of the school). Teachers might conceivably be fully engaged in classroom teaching, but much less engaged in completing the non-teaching tasks that comprise much of a teacher's work. Second, we suggest that future studies examine other potential factors that make up engagement. Although the UWES examines vigor, dedication, and absorption (other work engagement conceptualizations include cognitive, emotional, and physical engagement factors, e.g., Kahn, 1990), other factors may contribute to engagement. For example, teachers work in an inherently social occupation, and relationships with students may form a key factor in work engagement for teachers. We suggest that researchers and theorists consider the inclusion of social engagement as a critical factor in teacher engagement in future studies.

Conclusion

We posed six research questions in this study, with our final research question pondering the appropriateness of the UWES for cross-national and cross-cultural research. Our results offer mixed support for use of the scale across cultural and national boundaries. To be sure, the UWES showed similarities across settings, with similar internal consistencies and relationships with related work well-being constructs, and similar patterns across settings for relationships between the UWES and SES, years of experience, and gender. However, the measure did not show invariance of factor loadings and factor variances across all settings. Establishing measurement equivalence is a critical test when conducting cross-cultural research (e.g., Gregorich, 2006), and the UWES did not pass this test. Thus, our response to our sixth question is that we do not recommend the use of the current form of the UWES for cross-national research for samples of teachers from culturally distinct regions. As we have argued, teachers' engagement has important implications for teachers and students, and the UWES has proven to be a useful tool for measurement of engagement in many settings. More work is needed before its use can be confidently supported in further cross-national and cross-cultural research. Further work is also needed to contextualize teacher engagement measures and to recognize the unique environments in which teachers work.

AUTHOR NOTES

Robert M. Klassen is Professor and Chair of the Psychology and Education Research Centre at the University of York, UK. Current projects include an examination of the trajectory of teachers' motivation, and an exploration of young adults' life goals, motivation, and educational opportunities. **Said Aldhafri** is an associate professor of the Psychology Department at the College of Education, Sultan Qaboos University, Oman. Current projects include investigating motivation for students, teachers, and principals in different school settings; examining parenting styles' influence on children's outcomes; and exploring self-constructs in cross-cultural settings. **Caroline F. Mansfield** is a lecturer in teaching and learning at Murdoch University, Western Australia. Her research focuses on student motivation in learning contexts, preservice teacher learning, and teacher motivation, emotion, efficacy and resilience across career stages. **Edy Purwanto** is a lecturer in Educational Psychology and Head of the Psychology Department at Semarang State University, Indonesia. His main interest is in the area of motivation and he is currently working

on developing the trisula model of motivation for achievement. **Angela F. Y. Siu** is an assistant professor in the Department of Educational Psychology at the Chinese University of Hong Kong. Her research interests include professional development of teachers, and work engagement. **Marina W. Wong** is an associate professor in the Department of Education Studies of the Hong Kong Baptist University. She obtained a PhD in Curriculum Studies at the University of British Columbia in Canada. Her research interests include assessment in education, curriculum studies and music teacher education. **Amanda Woods-McConney** is a lecturer in science education in the School of Education at Murdoch University, Perth, Western Australia. Amanda's research interests include the examination of students' engagement in science in PISA datasets, the integration and valuing of indigenous knowledge in science education, and teachers' engagement, motivation and efficacy.

REFERENCES

- Arbuckle, J. L. (2007). Amos (Version 16.0) [Computer program]. Chicago, IL: SPSS.
- Arnett, J. J. (2008). The neglected 95%: Why American psychology needs to become less American. *American Psychologist*, *63*, 602–614.
- Bakker, A. B., Albrecht, S. L., & Leiter, M. P. (2011). Key questions regarding work engagement. *European Journal of Work and Organizational Psychology*, *20*, 4–28.
- Bakker, A. B., & Bal, P. M. (2010). Weekly work engagement and performance: A study among starting teachers. *Journal of Occupational and Organizational Psychology*, *83*, 189–206.
- Bakker, A. B., Hakanen, J. J., Demerouti, E., & Xanthopoulou, D. (2007). Job resources boost work engagement, particularly when job demands are high. *Journal of Educational Psychology*, *99*, 274–284.
- Blau, G. J. (1985). The measure and prediction of career commitment. *Journal of Occupational Psychology*, *58*, 277–288.
- Blunch, N. (2008). *Introduction to structural equation modelling using SPSS and AMOS*. London, England: Sage.
- Byrne, B. M. (2004). Testing for multigroup invariance using AMOS graphics: A road less traveled. *Structural Equation Modeling*, *11*, 272–300.
- Caprara, G. V., Barbaranelli, C., Borgogni, L., & Steca, P. (2003). Efficacy beliefs as determinants of teachers' job satisfaction. *Journal of Educational Psychology*, *95*, 821–832.
- Cheung, G. W., & Rensvold, R. B. (2002). Evaluating goodness-of-fit indexes for testing measurement invariance. *Structural Equation Modeling*, *9*, 233–255.
- Cockburn, A. D., & Haydn, T. (2004). *Recruiting and retaining teachers: Understanding why teachers teach*. London, England: Routledge Falmer.
- Cohen, A. (2007). An examination of the relationship between commitments and culture among five cultural groups of Israeli teachers. *Journal of Cross-Cultural Psychology*, *38*, 34–49.
- Darling-Hammond, L., & Youngs, P. (2002). Defining "highly qualified teachers": What does "scientifically-based research" actually tell us? *Educational Researcher*, *31*, 13–25.
- Evans, L. (2001). Delving deeper into morale, job satisfaction, and motivation among education professionals. *Educational Management and Administration*, *29*, 291–306.
- Gardiner, H. W., & Kosmitzki, C. (2005). *Lives across cultures: Cross-cultural human development*. Boston, MA: Pearson Education.
- Gregorich, S. E. (2006). Do self-report instruments allow meaningful comparisons across diverse population groups? *Medical Care*, *44*, 78–94.
- Hackett, R. D., Lapierre, L. M., & Hausdorf, P. A. (2001). Understanding the links between work commitment constructs. *Journal of Vocational Behavior*, *58*, 392–413.
- Hakanen, J. J., Bakker, A. B., & Schaufeli, W. B. (2006). Burnout and work engagement among teachers. *Journal of School Psychology*, *43*, 495–513.
- Halbesleben, J. (2010). A meta-analysis of work engagement: Relationships with burnout, demands, resources and consequences. In A. B. Bakker & M. P. Leiter (Eds.), *Work engagement: A handbook of essential theory and research* (pp. 102–117). New York, NY: Psychology Press.

- Heine, S. J. (2004). Positive self-views: Understanding universals and variability across cultures. *Journal of Cultural and Evolutionary Psychology*, 2, 109–122.
- Hindman, J., & Stronge, J. (2009). The \$2 million decision: Teacher selection and principals' interviewing practices. *ERS Spectrum*, 27, 1–10.
- Hofstede, G. (2001). *Culture's consequences: Comparing values, behaviors, institutions, and organizations across nations* (2nd ed.). Thousand Oaks, CA: Sage.
- Huang, X., & Van de Vliert, E. (2004). Job level and national culture as joint roots of job satisfaction. *Applied Psychology: An International Review*, 53, 329–348.
- Hui, C. H., & Yee, C. (1999). The impact of psychological collectivism and workgroup atmosphere on Chinese employees' job satisfaction. *Applied Psychology: An International Review*, 48, 175–185.
- Ingersoll, R. (2001). Teacher turnover and teacher shortage. *American Educational Research Journal*, 38, 499–534.
- Inglehart, R., & Baker, W. E. (2000). Modernization, cultural change, and the persistence of traditional values. *American Sociological Review*, 65, 19–51.
- Jennings, P. A., & Greenberg, M. T. (2009). The prosocial classroom: Teacher social and emotional competence in relation to student and classroom outcomes. *Review of Educational Research*, 79, 491–525.
- Judge, T. A., Thoresen, C. J., Bono, J. E., & Patton, G. K. (2001). The job satisfaction-job performance relationship: A qualitative and quantitative review. *Psychological Bulletin*, 127, 376–407.
- Kahn, W. (1990). Psychological conditions of personal engagement and disengagement at work. *Academy of Management Journal*, 33, 692–724.
- Kirkman, B. L., & Shapiro, D. L. (2004). The impact of cultural values on job satisfaction and organizational commitment in self-managing work teams: The mediating role of employee resistance. *Academy of Management Journal*, 44, 557–569.
- Klassen, R. M., Al-Dhafri, S., Hannok, W., & Betts, S. M. (2011). Investigating pre-service teacher motivation across cultures using the Teachers' Ten Statements Test. *Teaching and Teacher Education*, 27, 579–588.
- Klassen, R. M., Bong, M., Usher, E. L., Chong, W. H., Huan, V. S., Wong, I. Y., & Georgiou, T. (2009). Exploring the validity of the Teachers' Self-Efficacy Scale in five countries. *Contemporary Educational Psychology*, 34, 67–76.
- Klassen, R. M., & Chiu, M. M. (2010). Effects on teachers' self-efficacy and job satisfaction: Teacher gender, years of experience, and job stress. *Journal of Educational Psychology*, 102, 741–756.
- Klassen, R. M., Perry, N. E., & Frenzel, A. (2012). Teachers' relatedness with students: An underemphasized aspect of teachers' basic psychological needs. *Journal of Educational Psychology*, 104, 150–165.
- Klassen, R. M., Usher, E. L., & Bong, M. (2010). Teachers' collective efficacy, job satisfaction, and job stress in cross-cultural context. *Journal of Experimental Education*, 78, 464–486.
- Klusmann, U., Kunter, M., Trautwein, U., Lüdtke, O., & Baumert, J. (2008). Engagement and emotional exhaustion in teachers: Does the school context make a difference? *Applied Psychology: An International Review*, 57, 127–151.
- Larson, M. L. (1998). *Meaning-based translation: A guide to cross-language equivalence*. Lanham, MD: University Press of America.
- Macey, W. H., & Schneider, B. (2008). The meaning of employee engagement. *Industrial and Organizational Psychology*, 1, 3–30.
- Meyer, J. P., & Gagné, M. (2008). Employee engagement from a self-determination theory perspective. *Industrial and Organizational Psychology*, 1, 60–62.
- Organisation for Economic Co-operation and Development. (2005). *Teachers matter: Attracting, developing, and retaining effective teachers*. Paris, France: Author.
- Parker, P. D., & Martin, A. J. (2009). Coping and buoyancy in the workplace: Understanding their effects on teachers' work-related well-being and engagement. *Teaching and Teacher Education*, 25, 68–75.
- Peña, E. D. (2007). Lost in translation: Methodological considerations in cross-cultural research. *Child Development*, 78, 1255–1264.
- Roth, G., Assor, A., Kanat-Maymon, Y., & Kaplan, H. (2007). Autonomous motivation for teaching: How self-determined teaching may lead to self-determined learning. *Journal of Educational Psychology*, 99, 761–774.
- Ryan, R. M., & Deci, E. L. (2000). Self-determination theory and the facilitation of intrinsic motivation, social development, and well-being. *American Psychologist*, 55, 68–78.
- Schaufeli, W. B., Bakker, A. B., & Salanova, M. (2006). The measurement of work engagement with a short questionnaire. *Educational and Psychological Measurement*, 66, 701–716.
- Schaufeli, W. B., & Salanova, M. (2011). Work engagement: On how to better catch a slippery concept. *European Journal of Work and Organizational Psychology*, 20, 39–46.

- Schaufeli, W. B., Salanova, M., Gonzalez-Romá, V., & Bakker, A. B. (2002). The measurement of engagement and burnout: A confirmative analytic approach. *Journal of Happiness Studies, 3*, 71–92.
- Seppälä, P., Mauno, S., Feldt, T., Hakanen, J., Kinnunen, U., Tolvanen, A., & Schaufeli, W. (2009). The construct validity of the Utrecht Work Engagement Scale: Multisample and longitudinal evidence. *Journal of Happiness Studies, 10*, 459–481.
- Shimazu, A., Schaufeli, W. B., Kosugi, S., Suzuki, A., Nashiwa, H., Kato, A., . . . Kitaoka-Higashiguchi, K. (2008). Work engagement in Japan: Validation of the Japanese version of the Utrecht Work Engagement Scale. *Applied Psychology: An International Review, 57*, 510–523.
- Sonnentag, S. (2011). Research on work engagement is well and alive. *European Journal of Work and Organizational Psychology, 20*, 29–38.
- van de Vijver, F., & Leung, K. (1997). *Methods and data analysis for cross-cultural research*. Thousand Oaks, CA: Sage.
- Yin, P., & Fan, X. (2003). Assessing the factor structure invariance of self-concept measurement across ethnic and gender groups: Findings from a national sample. *Educational and Psychological Measurement, 63*, 296–318.

Teachers engagement at work: An international validation study

ORIGINALITY REPORT

12%

SIMILARITY INDEX

12%

INTERNET SOURCES

16%

PUBLICATIONS

8%

STUDENT PAPERS

PRIMARY SOURCES

1

sites.education.uky.edu

Internet Source

5%

2

Robert M. Klassen, Mimi Bong, Ellen L. Usher, Wan Har Chong, Vivien S. Huan, Isabella Y.F. Wong, Tasos Georgiou.
"Exploring the validity of a teachers' self-efficacy scale in five countries",
Contemporary Educational Psychology,
2009

Publication

4%

3

Submitted to University of Cambridge

Student Paper

2%

4

scholars.hkbu.edu.hk

Internet Source

2%

Exclude quotes Off

Exclude matches < 2%

Exclude bibliography Off

Teachers engagement at work: An international validation study

GRADEMARK REPORT

FINAL GRADE

/0

GENERAL COMMENTS

Instructor

PAGE 1

PAGE 2

PAGE 3

PAGE 4

PAGE 5

PAGE 6

PAGE 7

PAGE 8

PAGE 9

PAGE 10

PAGE 11

PAGE 12

PAGE 13

PAGE 14

PAGE 15

PAGE 16

PAGE 17

PAGE 18

PAGE 19

PAGE 20

PAGE 21
