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Work engagement of teachers in Chinese higher education sector: Using mixed method appraisal tool of systematic literature review

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Abstract

Purpose: This systematic review aimed to fill the literature gap in teachers' work engagement in higher education while comprehensively investigating the work engagement of teachers working in Chinese higher education.

Design/methodology/approach: Data collection was documented using the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) tool, and the Mixed Methods Appraisal Tool (MMAT) 2018 edition was used to evaluate the quality of each publication in this study.

Findings: This paper concludes that UWES is a relatively stable scale in terms of reliability and validity in the Chinese context, but the UWES-9 lacks a uniform translation version in China. Meanwhile, work resources can promote the work engagement of university teachers while work demands inhibit their work engagement, so increasing the work resources of university teachers and controlling work demands may be an effective way to increase their work engagement. Lastly, research has demonstrated a strong relationship between positive psychological factors and work engagement.

Research limitations/implications: This study excluded literature published in non-English languages and grey literature with vague descriptions of the sample (e.g., public school teachers, teachers).

Practical implications: This review highlights the role of positive psychological factors and job resources in predicting teachers' work engagement. The findings will be valuable for policy development in Chinese higher education institutions undergoing rapid development, particularly those facing faculty shortages and wishing to motivate faculty engagement.

Originality/value: To further understand the relationship between positive psychological variables and work engagement for future research, this study expects that examining the impact of these elements on work engagement will encourage discussion among academics and practitioners. At the same time, the positive psychology factors of teachers should be properly considered in the management and policymaking of higher education institutions.

Keywords: work engagement, Chinese, higher education teacher, review, UWES, JD-R model

Introduction

Recently, scholars and researchers (e.g., Meng & Sun, 2019; Yang, 2021; Zhou et al., 2022) have been more interested in the topic of higher education teachers' work engagement. In the field of pedagogy, psychology, management, and organizational behaviour, work engagement has become one of the most widely contested study subjects (Pollak et al., 2017). Additionally, burnout, health problems, and high turnover are common phenomena among less engaged teachers (Bal et al., 2013; Zhang et al., 2021). Expressly, teachers' engagement in their work directly or indirectly affects the teachers themselves, their students, schools, families, and even society as a whole (Solís García et al., 2021). Therefore, teachers' engagement has become a topic of concern worldwide.

The growth of research on teachers' work engagement is another illustration of the positive psychology shift in work and organizational psychology, which is a shift in academic attention from negative work outcomes to work well-being (Bakker et al., 2008; Pollak et al., 2017). Compared with the former research, researchers now are focusing on the teachers' positive psychological factors, including teachers' work engagement, which frequently involves energy, involvement, and optimism (Maslach et al., 2001; Ho et al., 2021).

Similar trends are being observed in the Chinese education sector (Han, Yin, Wang, & Zhang, 2020a; Meng & Sun, 2019; G. Zeng et al., 2019). Especially after the two social hot topics of university teachers' Neijuan (involution) and Tangping (lying flatly) were regarded by scholars as the mirror image of work engagement and work disengagement, faculty members' work engagement has received more attention (Lu & Liu, 2023; Li, 2022). However, as an imported academic concept, the antecedent variables, outcome variables, and scales of work engagement in cross-cultural contexts need to be validated in localized research (Wang, 2018). At the same time, teachers' engagement in China's education sector is critical to the professional development of faculty members, the academic achievement of students, and the development of the sector, but it is almost ignored in traditional classroom settings in higher education (Zhao et al., 2021).

The following two features demonstrate the significance of this study. Due to the lack of review of Chinese higher education teachers' work engagement, the first purpose is to present a cutting-edge review of Chinese higher education instructors' work engagement research as well as their findings and fill the literature gap in teachers' work engagement in higher education while comprehensively investigating the faculty members' work engagement Chinese higher education. Future research will benefit from a systematic evaluation of the empirical literature on teachers' work in China, which will also make knowledge transfer easier for practitioners. At the same time, although teachers' work engagement is gradually gaining attention from scholars, empirical research is still not sufficient. Therefore, the second objective is to improve the methods of research on higher education teachers' work engagement in China by exposing the biases and limits of the existing evidence.

Literature Review

Concept and Dimensions of Work Engagement

Generally, Kahn (1990) is credited by scholars as being the first to describe and discuss the concept of work engagement. In 1990, he held the view that work engagement refers to the condition in which organizational members can freely display themselves and devote themselves to work (Christian et al., 2011; Kahn, 1990). This view was based on Goffman's (1961) theory of individual role performance in social circumstances. Kahn (1990) divided work engagement into three dimensions based on extensive research on the subject: cognition, physiology, and emotion. These categories are the ability to focus, actively participate in

organizational activities, actively demonstrate one's abilities at work, and build strong working relationships with others (Kahn, 1990).

Some scholars contend that the opposite of job burnout is job engagement (e.g. Maslach et al., 2000; Leiter et al., 1996). According to a study on job health status conducted by Maslach et al., (2000), work engagement and job burnout are two connected outcomes that are consistent in their internal dimensions and can be correlated with one another in specific situations. The Measurement of Burnout Inventory (MBI) reverse score can therefore be used to assess job engagement directly (Demerouti & Bakker, 2008). Maslach et al. (2000) noted that job engagement is a condition of competence in which a person is full of energy in a job, engages in a task with a high sense of efficacy, and can effectively cooperate with others. Job engagement may be described by three dimensions: energy, involvement, and sense of efficacy. However, Schaufeli and fellow researchers approach the idea of engagement in a different way (Bakker & Albrecht, 2018; Schaufeli, 2002; Schaufeli & Bakker, 2004). Work engagement is defined as a healthy psychological state characterized by intense vigour, dedication, and absorption (Schaufeli et al., 2002; Bakker, 2022; Mérida-López et al., 2023). High levels of energy and mental toughness while working are indicative of vigour; being actively interested in one's profession and feeling a sense of purpose, passion, and challenges are all signs of dedication; being completely focused and contentedly involved in one's task, during which time goes quickly, is known as absorption (Schaufeli & Bakker, 2004). This study found that almost all scholars in the last five years of research on the work engagement of higher education teachers have used the definition of work engagement proposed by Schaufeli et al. (2002). Therefore, this study also adopted this definition to interpret the concept of higher education teachers' work engagement.

Work Engagement among Teachers in Chinese Higher Education Sector

Universities from different countries face diverse problems and difficulties that are particular to their political structures, economic reality, and cultural traditions (Han et al., 2020), while university instruction is distinct from that found in elementary and secondary institutions. Knowledge production is scholarly, and its transmission is challenging as well (Xu et al., 2023). During the past two decades, the Chinese higher education sector experienced a large-scale expansion (Guo et al., 2019). However, the expansion can put academic staff under additional job expectations and pressures (Cao & Zhang, 2022; Liu et al., 2019). Therefore, rapid changes can be a barrier to teachers' work engagement (Diedericks et al., 2019).

Higher education teachers' work engagement could be also influenced by their cultural background (Ahuja & Gupta, 2019). Confucianism also provides a philosophical and ethical basis for Chinese thinking and behaviour within the context of Chinese culture, emphasizing harmonious interpersonal connections and high collectivism (Zeng & Xu, 2020). Due to the influence of traditional thinking, it is more common for Chinese university instructors to show cynicism in their profession, and their unwillingness to be extremely prominent in their work engagement makes them stand out from the group (Zhang et al., 2021).

Compared to Western universities, Chinese universities' faculty members frequently have to balance more competing demands on their time for teaching, research, and administration (Han et al., 2021). This suggests that administrative factors have a role in the grading system, confounding academic reasoning (Ren & Liu, 2021), and this tendency increases the workload for college lecturers (Xu et al., 2023a). In Chinese higher education, the supervisor-subordinate guanxi (S-S) is a unique interpersonal relationship that refers to those interactions that take place between superiors and subordinates after work (Zeng & Xu, 2020). Employees with a high-quality S-S guanxi will take an active and effective part in organizational decision-making as they acquire more valued resources (Cheung & Wu, 2011). Therefore, College teachers

experience crises relating to their mental and physical health, professional identity, and academic engagement (Xu et al., 2023a).

Work Engagement Scales

The UWES created by Schaufeli et al. (2002) is the most popular work engagement measure since it has stayed steady across cultures and occupational groups and has strong reliability and validity (Zhang & Gan, 2005). 17 items of UWES were translated into Chinese by Zhang & Gan (2005), and the back-translated English version was reviewed by Schaufeli the main developer of the UWES. There are other techniques, though, often developed by researchers for measuring teachers' work engagement. For instance, the 18-item Work Engagement Scale (JES18) operationalizes Kahn's (1990) multidimensional hierarchical theory of the engagement and manifestation of an individual's preferred self in work performance (Houle et al., 2022). He divides work engagement into three dimensions: physical, cognitive, and emotional (Kahn, 1990). In addition, a scale designed by Kanungo (1982) has been used to measure the work engagement of higher education teachers (J. Zeng & Xu, 2020b). Utilizing the three methodologies of semantic differential, questionnaire, and graphic, independent measures of job and work components were developed (Kanungo, 1982). Several scales mentioned above have been used by only a few scholars in the study of teachers' work engagement in higher education and are not representative enough to form a systematic review.

Work Engagement and JD-R Model

In the last five years of research on the job engagement of higher education teachers, the JD-R model has been examined very frequently since it has developed into a leading heuristic framework for widely conceptualizing occupational psychological health (Schaufeli & Taris 2014). The literature utilizing the JD-R model to forecast school teachers' work engagement and well-being has expanded at the same time, demonstrating the model's suitability for use in educational contexts (e.g., Yin, et al., 2016; Han et al., 2020a). Some of the studies are empirical studies of the JD-R model itself (e.g., Han et al., 2020a; Han et al., 2020b), while others use the JD-R model as an underlying theory (e.g., Cao & Zhang, 2022; Bi & Ye, 2021). Demerouti et al. (2001) originally put forth the JD-R model in a study of burnout. Job resources are described as elements that help facilitate attaining work goals and lower physiological and psychological costs, whereas job demands are diverse parts of a job that require consistent effort and are therefore connected with those costs (Breevaart et al., 2016; Schaufeli & Taris, 2014; Demerouti et al., 2001). Work engagement is influenced by two factors: job resources, and personal resources, according to the relationship between the JD-R model and work engagement as put out by Bakker (2011). All organizational, social, psychological, and physical components of employment are considered job resources (Schaufeli & Bakker, 2004). These tools assist staff in minimizing the negative effects of work demands, accomplishing goals, and improving the workplace (Schaufeli & Bakker, 2004). Additionally, personal resources are derived from unique psychological states (Schaufeli, 2017) and enable staff members to provide favourable self-evaluations of the company (Bakker & Demerouti, 2008). There is a clear preference among scholars for individual resource studies in the research on predictor variables of work engagement among university teachers, such as the study of the effect of efficacy, and trait mindfulness on work engagement (Bi & Ye, 2021; Yang, 2021; Ge, 2022). Therefore, the above description demonstrates that the JD-R model has broad application in the Chinese context and that the current research trend prefers to study teachers' work engagement at the individual level.

Methods

Data Collection and Study Strategy

This study employed a systematic search of the literature to assemble pertinent information about the work engagement of teachers in higher education. Google Scholar, Web of Science, and SCOPUS, three databases supported by University Sains Malaysia, and academic social networks (ResearchGate) were used to gather the sample of articles for evaluation. A Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) flow diagram was used to document this procedure (Kucharczuk et al., 2022; Moher et al., 2009). These databases were searched using a variety of keywords, including "work engagement", "job engagement", "engagement", "UWES", "burnout", "Chinese higher education teacher", "Chinese university teacher", "Chinese college teacher", "Chinese vocational education teacher". The literature selection process is shown in Figure 1.

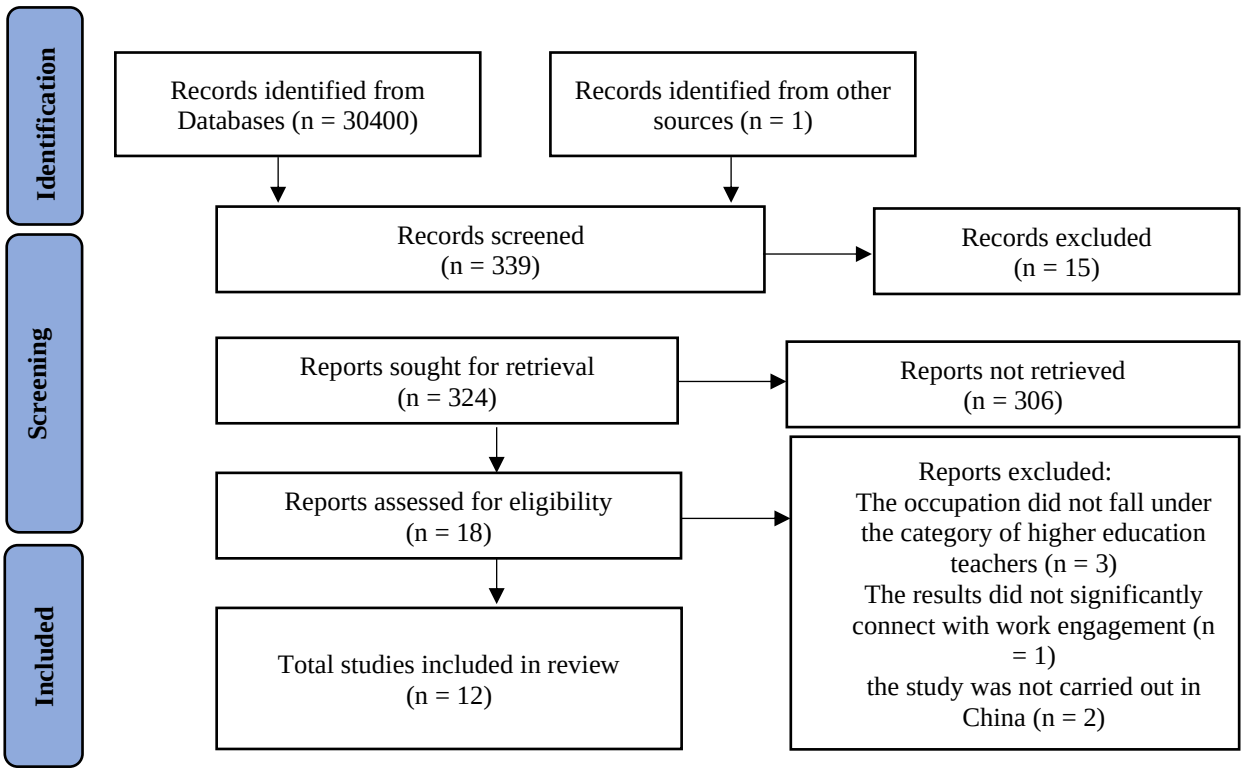

Figure 1 PRISMA flow diagram (Sampasa-Kanyinga et al., 2015)

Eligibility Standards and Literature Selection

Articles are required to be published between January 2018 and June 2023 to meet this study's inclusion standards. The following criteria were used to choose studies for inclusion in the sample: 1) been written in English, 2) empirical study, 3) done in China, 4) recognized higher education teachers' work engagement as a variable and must be a quantitative study, 5) study needed to provide details on its findings (e.g., relationships between work engagement and other variables).

The keywords were chosen to include the widest possible range of different higher education providers and their work engagement frameworks. The search includes three groups of terms. The first group includes terms that cover the target group (e.g., teachers in higher education, and faculty in higher education). The second group runs parallel to the first and includes

additional occupational terms (e.g., university teacher, higher education teacher, university educator, university lecturer). The third group includes terms related to work engagement, such as work engagement, job engagement, engagement, UWES, and burnout. During the screening of articles, the keywords, title, or abstract of an article must contain two or more of the above-mentioned terms to be included in the search. Also, we have adjusted the search strategy according to the different search methods of each database.

Quality Assessment

The Mixed Methods Appraisal Tool (MMAT) 2018 edition was used to evaluate the quality of each publication in this study (Hong et al., 2018). Reviewers can use the MMAT as a valid and reliable instrument to evaluate mixed-methods, qualitative, and quantitative studies against five criteria (Hong et al., 2018; Kucharczuk et al., 2022). In the 2018 version of the MMAT, the MMAT authors created a ranking system to judge study quality more clearly (Wong et al., 2020). Articles were rated as high quality if all five ranking criteria were met, medium quality if four criteria were met, and low quality if three or fewer criteria were met (Wong et al., 2020). The primary evaluation was carried out by the main author, who then had the secondary author examine it. Disagreements were settled by conversation until an agreement was reached.

Data Analysis

The data collected includes authorship, study design, occupation of the population, response rate (or sample size), statistical methodology, MMAT quality classification, and targeted findings. Table 1 lists the basic information of the 12 articles selected according to the evaluation criteria of the MMAT. This paper will also review the topic of faculty work engagement in higher education based on these characteristics.

Table 1 Study characteristics selected according to the MMAT

Article Citation	Study Design	Occupation of samples	Response rate / N	Statistical analysis	Quality Assessment (MMAT)
(Rashidin et al., 2020)	Quantitative & Likert Scales	Chinese faculties	84%	Correlation, regression, independent sample T-test	High
(J. Zeng & Xu, 2020a)	Quantitative & Likert Scales	Young teachers from Chinese universities	68%	Hierarchical regression	High
(Han, Yin, Wang, & Zhang, 2020c)	Quantitative & Likert Scales	University teachers in China	78.8%	SEM	High
(Cao & Zhang, 2022)	Quantitative & Likert Scales	University faculty in China	N=375	SEM	Medium

(Ge, 2022)	Quantitative & Likert Scales	Chinese instructors	N=300	Linear multiple regression	Medium
(Xu et al., 2023)	Quantitative & Likert Scales	Chinese university teachers	N=7743	CFA	Medium
(Meng & Sun, 2019)	Quantitative & Likert Scales	University faculty in China	90%	Independent sample T-tests, ANOVA	High
(Bi & Ye, 2021)	Quantitative & Likert Scales	University faculty in China	98.79%	CFA	High
(Yang, 2021)	Quantitative & Likert Scales	University professors and middle school teachers in China	N=346	Test of Kolmogorov-Smirnov (KS)	Medium
(Guo et al., 2019)	Quantitative & Likert Scales	University teachers in China	80.9%	Linear regression analyses, bootstrapping test	High
(Han et al., 2020)	Quantitative & Likert Scales	University teachers in China	78.8%	SEM	High
(Sang et al., 2023)	Quantitative & Likert Scales	Teachers from universities in China	75.2%	SEM	High

Results

According to the article screening control criteria for this study, the relevance of 339 publications was evaluated based on their titles and abstracts, leading to the elimination of 324 items. The final sample size was 12 articles after a comprehensive review of the remaining 18 articles led to the exclusion of six of them for three main reasons: the occupation did not fall under the category of higher education teachers (e.g., secondary school teachers, elementary school teachers); the results did not significantly connect with work engagement; and the study was not carried out in China.

All 12 articles screened for this review belonged to quantitative descriptive studies. All articles were published between January 2018 and June 2023. All 12 studies were conducted in China, and the population of the research was all Chinese higher education teachers.

After assessing the quality of all articles using MMAT, 8 studies were categorized as high quality (Bi & Ye, 2021; Guo et al., 2020; Han et al., 2020; Han et al., 2020a; Meng & Sun, 2019; Rashidin et al., 2020; Sang et al., 2023; Zeng & Xu, 2020b) and 4 studies were assessed as medium quality (Cao & Zhang, 2022; Ge, 2022; Xu et al., 2023; Yang, 2021). Details are given in Table 1.

Findings and Discussions

Measurement and Dimension of Work Engagement

The focus of this study is on the work engagement measured by the UWES. The rationale is as follows: 1) The Job Demands-Resources Model (Bakker & Demerouti, 2007) and the Conservations of Resources Theory (Hobfoll, 1989) serve as the foundation for the UWES, which are well-established theories of organizational psychology. 2) The UWES, which is based on positive psychology, strives to investigate positive psychological resources for workers and establish a productive and satisfying work environment (Pollak et al., 2018). 3) The review can be placed within the existing body of research on work engagement studies by limiting it to studies that used the UWES.

In this study, it was found that 8 out of 12 articles used different versions of UWES to measure the faculty members' work engagement, details of which are given in Table 2. This table reveals that the UWES is a dominant scale in the study of faculty work engagement in Chinese colleges and universities. The Chinese version of the UWES-9 (Schaufeli et al., 2006) is the most commonly used measure of teacher work engagement in Chinese higher education. However, the current lack of a uniform translation version of the UWES-9 (Schaufeli et al., 2006) and the lack of research describing the author of the translation is a disconcerting result for the measurement of teacher work engagement in higher education. UWES-9 (Schaufeli et al., 2006) is preferred among academics in comparison to the original UWES-17 (Schaufeli et al., 2006). With internal consistency coefficients of at least 0.7 across investigations, which means the short version of the UWES (Schaufeli et al., 2006) has maintained strong reliability and validity in the Chinese education sector. The implementation of a Chinese-adapted version of the UWES (Zhang & Gan, 2005) is also noteworthy because, in contrast to the traditional UWES assessment of dimensions, it emphasizes respondents' vitality, dedication, and focus to gauge their level of work engagement (Meng & Sun, 2019). This adaptation of the UWES is an innovative attempt to bridge the gap between the different professional groups in the unique cultural context of China and the exploration of the positive psychology dimension of work engagement among teachers in China (Zhang & Gan, 2005). However, it is significant to mention that the UWES is likely to have diversity among studies in various contexts, which makes it challenging to improve the measurement instrument and to offer measuring standards for work engagement studies in Chinese contexts. Scholars have not suggested any research on different versions of the UWES-9's validity or reliability caused by cultural or linguistic background. Table 2 lists the examined studies along with details on the UWES's versions and the dimensions of scales.

Table 2 UWES Versions used in this study

Scale version	Researcher (s) of adaptation	Three work engagement dimensions	Number of studies	References
UWES-9	Schaufeli et al. (2006)	vigour, dedication, absorption	5	Han et al. (2020a) Bi & Ye (2021) Guo et al. (2019) Han et al. (2020b) Sang et al. (2023) Cao & Zhang (2022)
UWES-17	Schaufeli et al. (2006)	vigour, dedication, absorption	1	Yang (2021)

UWES-15 (Chinese version)	Zhang & Gan (2005)	vitality, dedication, focus	1	Meng & Sun (2019)

Predictors of Work Engagement

After a review of these scattered studies, 15 antecedent variables of work engagement were identified. This also demonstrates the dispersion of variables when studying the faculty members' work engagement. Table 3 details the predictors of teachers' work engagement in the Chinese higher education sector. This table divides the predictors of work engagement of higher education teachers into three broad categories: 1) conceptual elements; 2) Organizational factors & leadership; 3) Job characteristics and employee traits. A review of studies of such samples led to the following findings:

In the past five years, research about positive organizational behaviour and positive psychology has grown rapidly, as a result, work engagement has attracted a lot of attention as a positive work condition (Bi & Ye, 2021). In this study, nine of the samples examined teacher work engagement at the individual level, eight of which were grounded entirely in a positive psychology perspective. This study found two academics who were concerned about the impact of efficacy on work engagement which is one of the most typical elements of positive psychology (Yang, 2021; Ge, 2022). Teachers' efficacy could significantly predict both the effectiveness of teaching and the academic accomplishment of students (Zee et al., 2018), and it could encourage innovations (Klassen & Tze, 2014), predict teacher burnout (Ge, 2022), influence teacher well-being (Huang et al., 2019), and improve teachers' work engagement (Yang, 2021; Ge, 2022). Other variables that fall under the category of positive psychology have also been studied in the last five years, such as psychological empowerment (Meng & Sun, 2019), trait mindfulness (Bi & Ye, 2021), and organizational trust (Zeng & Xu, 2020), which have all been demonstrated to positively correlate with the three dimensions of work engagement.

Another research trend is about work stress, and this study found a study that critically discusses work stressors and work engagement (Xu et al., 2023). Xu et al. (2023), concentrating on what stresses signify to certain individuals, then divided stressors into challenge stressors and hindrance stressors, even though there are no stresses that are "good" or "bad" for individuals. Instead, people might categorize stressor characteristics differently depending on how they initially evaluated them (Cohen & Hamrick, 2003). Finally, they stated that while hindrance stressors were negatively correlated with instructional engagement, challenge stressors had a significant positive impact on it (Xu et al., 2023).

In recent years, there has been comparatively less research examining higher education teachers' work engagement in terms of organizational-level elements, we have therefore grouped organizational factors and leadership factors into one category of research trends. In this study, we found that two studies reported a positive correlation between ethical leadership, leader support and teachers' work engagement (Zeng & Xu, 2020; Cao & Zhang, 2022).

Table 3 Predictors of higher education teachers' engagement

Separate Groups	Predictors of Work Engagement	Sample Characteristics	References
Conceptual elements	Job demands (-) Job resources (+)	N=2758; 56.13% women; 5.6% professors.	Han et al. (2020a)
		N=2758; 56.13% women;	Han et al. (2020b)

		5.6% professors.	
Organizational factors & leadership	Ethical leadership (+)	N=205; 48.8% women; 2% professors, 42.4% doctoral degree.	Zeng & Xu (2020)
	Leader support (+)	N=168; 61.3% women; 22.4% professors.	Cao & Zhang (2022)
Job characteristics and employee's traits	Workplace spirituality (+)	N=168; 23.8% women; 2.4% professors; 19% doctoral degree.	Rashidin et al. (2020)
	Psychological empowerment (+)	N=162; 62.96% women; 19.75% professors; 38.27% doctoral degree.	Meng & Sun (2019)
	Self-Efficacy (+)/ Collective Efficacy (+)	N=300; 68% women.	Ge (2022)
	Self-Efficacy (+)/ Collective Efficacy (+)	N=346; 80.06% women.	Yang (2021)
	Well-being (+) Challenge (+)/ hindrance stressors (-);	N=7743; 59% women.	Xu et al. (2023)
	Trait mindfulness (+)	N=830; 77.7% women.	Bi & Ye (2021)
	Core self-evaluations (+)	N=364; 41.2% women.	Guo et al. (2019)
	Digital competence (+)	N=321; 62% women; 55.5% doctoral degree.	Sang et al. (2023)
	Organizational trust (+)	N=205; 48.8% women; 2% professors; 42.4% doctoral degree.	Zeng & Xu (2020)

Note: The + stands for positive correlation, and the - stands for negative correlation.

Outcome Variables of Work Engagement

After a review of these scattered studies, three outcome variables of work engagement were identified. Table 4 illustrates the details of these three variables, and the gap shown in the table in the number of studies on outcome variables and antecedent variables shows that the focus of research in the last five years has not been on the outcome variable of faculty members' work engagement. The following findings related to the outcome variable of work engagement of teachers in higher education were also drawn from the review:

Several studies conducted in China have verified the positive correlation between job satisfaction and work engagement. Two studies describing this set of relationships were also found in this study, and the results of both studies show a positive correlation between work engagement and job satisfaction (Cao & Zhang, 2022; Han et al., 2020a). By reviewing the two studies we found that they were very similar in that they both concluded that work engagement

is a feeling of positivity and fulfilment at work (Schaufeli, et al., 2002). Since highly engaged workers are more likely to make use of diverse workplace resources (Yan et al., 2019) and accomplish work objectives, the nature of work engagement (vigour, devotion, and absorption) positively predicted job satisfaction (Cao & Zhang, 2022; Han et al., 2020a).

The other two articles focus on some of the unique traits of teachers. Bi & Ye (2021) claimed that emotional exhaustion is one of the negative outcomes of work engagement. Guo et al. (2019), on the other hand, put more emphasis on the benefits of engagement. They reported that work engagement and creative self-efficacy acted as mediators between core self-evaluations and the research performance of faculty members.

In conclusion, there are far fewer studies on the outcome variables of faculty work engagement in higher education than on the antecedent variables, and the research has tended to have positive outcome variables.

Table 4 Outcomes of higher education teachers' engagement

Outcomes of Work Engagement	Sample Characteristics	References
Job satisfaction (+)	N=2758; 56.13% women; 5.6% professors.	Han et al. (2020a)
	N=168; 61.3% women; 22.4% professors.	Cao & Zhang (2022)
Emotional exhaustion (-)	N=830; 77.7% women.	Bi & Ye (2021)
Research performance (+)	N=364; 41.2% women.	Guo et al. (2019)

Work Engagement and Positive Psychology

The term "antithesis of burnout" refers to work engagement (Bakker & Demerouti, 2007), which is an illustration of how positive psychology has influenced contemporary organizational psychology. The study of work engagement among Chinese higher education teachers also reflects well on the use of positive psychology in Chinese research. Variables that were positively associated with higher education teachers' work engagement in our study dominated, such as teachers' efficacy, and psychological empowerment. However, scholars such as Zeng & Xu (2020) and Cao & Zhang (2022) have studied very limited predictor variables of work engagement at the organizational level. More organizational factors such as HR practices, organizational support, and other factors that have been empirically studied in other industries in China have been neglected in higher education HR research, and perhaps organizational-level predictors of work engagement will become a new research trend in the future.

Role Conflict of Teachers in Chinese Higher Education

This study also identified the role conflict of teachers in higher education as an issue worthy of further exploration in the future. On the one hand, academics feel that their professionalism is being attacked as a result of higher standards of quality evaluation (Xu et al., 2023). Teachers in higher education are expected to have excellent academic skills and research performance, as well as to provide high-quality classroom teaching for students (Guo et al., 2019). On the other hand, the lack of a work-life balance is particularly problematic for university staff members' well-being (Xu et al., 2023). In their investigation of teachers' work engagement in higher education, Cao & Zhang (2022) also focused on the conflict between work and family

demands on instructors and found that these demands are, in some respects, incompatible with one another. It has also been suggested that the teaching-research role conflict among university teachers is a major problem faced by teachers and affects their work engagement (Shen & Ma, 2022). Therefore, we agree that the dual role conflict (research-teaching conflict, work-family conflict) currently faced by Chinese university teachers is an issue deserving to be studied and resolved.

Research Methodology of Teachers' Work Engagement in Chinese Higher Education

In terms of research methodology, there are also some problems with the study of teachers' work engagement in Chinese universities. Although there has been an increasing number of publications on research related to teachers' work engagement in higher education in recent years, as we mentioned above, the research analysis is haphazard and fragmented and does not constitute a systematic study. Because of this, it is also very difficult for us to conduct a meta-analysis. In addition, incomplete sample populations are also a major problem in current research on work engagement among Chinese higher education teachers. According to the Chinese Ministry of Education, the vocational college education should be included in the higher education sector (Wang, 2011). However, in the past five years of research, scholars have almost neglected teachers in colleges when studying teachers in higher education (Zhou et al., 2022). The samples selected for the study were largely characterized by high levels of education and high titles (e.g., Meng & Sun, 2019; Zeng & Xu, 2020; Cao & Zhang, 2022). This makes the results of the study potentially subject to bias. Therefore, we agree with Zhou et al., (2022) that future studies of higher education teachers should take vocational college teachers into account in their sample selection.

Discussion and Conclusion

Three main conclusions can be drawn from the analysis in this paper. First, the UWES is a relatively stable scale in terms of reliability and validity in the Chinese context, but the UWES-9 lacks a uniform translation version in China. It is anticipated that further research will address this issue to avoid measurement bias. Secondly, work resources can promote the work engagement of university teachers while work demands inhibit their work engagement, so increasing the work resources of university teachers and controlling work demands may be an effective way to increase their work engagement. Finally, positive psychological factors have been empirically shown to have a positive relationship with work engagement. This study expects that the impact of positive psychological factors on work engagement will stimulate debate among academics and practitioners to refine the relationship between positive psychological factors and work engagement for further research. At the same time, the positive psychology factors of teachers should be properly considered in the management and policy-making of higher education institutions.

Implications

The tools for measuring teacher work engagement in higher education were evaluated, and the antecedent and outcome variables of faculty members' work engagement were analysed. As a result, this systematic review and meta-analysis of teacher work engagement in Chinese higher education is beneficial for both theoretical and practical aspects. Previous research on work engagement in the Chinese context has focused on business organizations and the work engagement of higher education teachers has not received much attention. Also, this review highlights the role of positive psychological factors and job resources in predicting teachers' work engagement. The findings will be valuable for policy development in Chinese higher

education institutions undergoing rapid development, particularly those facing faculty shortages and wishing to motivate faculty engagement.

Limitations

This study excluded literature published in non-English languages and grey literature with vague descriptions of the sample (e.g., public school teachers, teachers), the literature that could be included in the study was very limited, and the final sample of articles included in the study consisted of only 12 articles. The findings should be regarded cautiously until they can be generalized to the broader public and until they can be confirmed by additional research because of the small number of included studies.

References

Allen, T. D., Merlo, K., Lawrence, R. C., Slutsky, J., & Gray, C. E. (2021). Boundary Management and Work-Nonwork Balance While Working from Home. *Applied Psychology*, *70*(1), 60–84. https://doi.org/10.1111/apps.12300

Ahuja, S., & Gupta, S. (2019). Organizational commitment and work engagement as a facilitator for sustaining higher education professionals. International Journal of Recent Technology and Engineering, 7(6), 1846-1851.

Bakker, A. B. (2011). An evidence-based model of work engagement. In *Current Directions in Psychological Science* (Vol. 20, Issue 4, pp. 265–269). https://doi.org/10.1177/0963721411414534

Bakker, A. B., & Albrecht, S. (2018). Work engagement: current trends. In *Career Development International* (Vol. 23, Issue 1, pp. 4–11). Emerald Group Holdings Ltd. https://doi.org/10.1108/CDI-11-2017-0207

Bakker, A. B., & Demerouti, E. (2007). The Job Demands-Resources model: State of the art. In *Journal of Managerial Psychology* (Vol. 22, Issue 3, pp. 309–328). https://doi.org/10.1108/02683940710733115

Bakker, A. B., & Demerouti, E. (2008). Towards a model of work engagement. *Career Development International*, *13*(3), 209–223. https://doi.org/10.1108/13620430810870476

Bakker, A. B., Schaufeli, W. B., Leiter, M. P., & Taris, T. W. (2008). Work engagement: An emerging concept in occupational health psychology. *Work and Stress*, *22*(3), 187–200. https://doi.org/10.1080/02678370802393649

Bal, P. M., de Cooman, R., & Mol, S. T. (2013). Dynamics of psychological contracts with work engagement and turnover intention: The influence of organizational tenure. *European Journal of Work and Organizational Psychology*, *22*(1), 107–122. https://doi.org/10.1080/1359432X.2011.626198

Bi, Y., & Ye, X. (2021). The effect of trait mindfulness on teachers' emotional exhaustion: The chain mediating role of psychological capital and job engagement. *Healthcare (Switzerland)*, *9*(11). https://doi.org/10.3390/healthcare9111527

Breevaart, K., Bakker, A. B., Demerouti, E., & Derks, D. (2016). Who takes the lead? A multi-source diary study on leadership, work engagement, and job performance. *Journal of Organizational Behavior*, *37*(3), 309–325. https://doi.org/10.1002/job.2041

Bruner, E. M. (1963). Encounters: Two Studies in the Sociology of Interaction. Erving Goffman [Review of Encounters: Two Studies in the Sociology of Interaction. Erving Goffman]. *American Anthropologist*, 65(6), 1416–1417. Blackwell Publishing Ltd. https://doi.org/10.1525/aa.1963.65.6.02a00560

Cao, C., & Zhang, J. (2022). Chinese University Faculty's Occupational Well-Being: Applying and Extending the Job Demands–Resources Model. *Journal of Career Development*, *49*(6), 1283–1300. https://doi.org/10.1177/08948453211037005

Cheung, M. F. Y., & Wu, W. P. (2011). Participatory management and employee work outcomes: The moderating role of supervisor-subordinate guanxi. *Asia Pacific Journal of Human Resources*, *49*(3), 344–364. https://doi.org/10.1177/1038411111413528

Christian, M. S., Garza, A. S., & Slaughter, J. E. (2011). Work engagement: A quantitative review and test of its relations with task and contextual performance. Personnel Psychology, 64(1), 89–136. https://doi.org/10.1111/j.1744-6570.2010.01203.x

Cohen, S., & Hamrick, N. (2003). Stable individual differences in physiological response to stressors: Implications for stress-elicited changes in immune related health. Brain, behavior, and immunity, 17(6), 407-414.

Demerouti, E., & Bakker, A. B. (2008). The Oldenburg Burnout Inventory: A good alternative to measure burnout and engagement. Handbook of stress and burnout in health care, 65(7), 1-25.

Demerouti, E., Nachreiner, F., Bakker, A. B., & Schaufeli, W. B. (2001). The job demands-resources model of burnout. Journal of Applied Psychology, 86(3), 499–512. https://doi.org/10.1037/0021-9010.86.3.499

Diedericks, J. C., Cilliers, F., & Bezuidenhout, A. (2019). Resistance to change, work engagement and psychological capital of academics in an open distance learning work environment. SA Journal of Human Resource Management, 17(1), 1-14.

Ge, L. (2022). Enhancing Chinese EFL Teachers' Work Engagement: The Role of Self and Collective Efficacy. *Frontiers in Psychology*, *13*. https://doi.org/10.3389/fpsyg.2022.941943

Guo, Y., Zhu, Y., & Zhang, L. (2019). Effect of Core Self-Evaluations on Research Performance among Chinese University Teachers. *Current Psychology* (New Brunswick, N.J.), 38(5), 1253–1257. https://doi.org/10.1007/s12144-017-9685-6

Han, J., Perron, B. E., Yin, H., & Liu, Y. (2021). Faculty stressors and their relations to teacher efficacy, engagement, and teaching satisfaction. *Higher Education Research and Development*, *40*(2), 247–262. https://doi.org/10.1080/07294360.2020.1756747

Han, J., Yin, H., Wang, J., & Bai, Y. (2020). Challenge job demands and job resources to university teacher well-being: the mediation of teacher efficacy. *Studies in Higher Education*, *45*(8), 1771–1785. https://doi.org/10.1080/03075079.2019.1594180

Han, J., Yin, H., Wang, J., & Zhang, J. (2020a). Job demands and resources as antecedents of university teachers' exhaustion, engagement, and job satisfaction. *Educational Psychology*, *40*(3), 318–335. https://doi.org/10.1080/01443410.2019.1674249

Ho, S. K., Chan, H., Chan, E. S. S., Fung, K. K., & Hung, S. S. L. (2021). A Preliminary Psychometric Investigation of a Chinese Version of the Engaged Teachers Scale (C-ETS). *Frontiers in Education*, *6*. https://doi.org/10.3389/feduc.2021.676835

Hong, Q. N., Fàbregues, S., Bartlett, G., Boardman, F., Cargo, M., Dagenais, P., Gagnon, M. P., Griffiths, F., Nicolau, B., O'Cathain, A., Rousseau, M. C., Vedel, I., & Pluye, P. (2018). The Mixed Methods Appraisal Tool (MMAT) version 2018 for information professionals and researchers. *Education for Information*, *34*(4), 285–291. https://doi.org/10.3233/EFI-180221

Houle, S. A., Rich, B. L., Comeau, C. A., Blais, A. R., & Morin, A. J. S. (2022). The Job Engagement Scale: Development and Validation of a Short Form in English and French. *Journal of Business and Psychology*, *37*(5), 877–896. https://doi.org/10.1007/s10869-021-09782-z

HU Shaonan & WANG Yong. (2014). Concept, Measurements, Antecedents, and Consequences of Work Engagement. *Advances in Psychological Science* (12). doi:10.3724/sp.j.1042.2014.01975.

Huang, S., Yin, H., & Lv, L. (2019). Job characteristics and teacher well-being: the mediation of teacher self-monitoring and teacher self-efficacy. *Educational Psychology*, *39*(3), 313–331. https://doi.org/10.1080/01443410.2018.1543855

Kahn, W. A. (1990). Psychological Conditions of Personal Engagement and Disengagement at Work. In *Source: The Academy of Management Journal* (Vol. 33, Issue 4).

Kanungo, R. N. (1982). Measurement of Job and Work Involvement. In *Journal of Applied Psychology* (Vol. 67, Issue 3).

Klassen, R. M., & Tze, V. M. C. (2014). Teachers' self-efficacy, personality, and teaching effectiveness: A meta-analysis. *In Educational Research Review* (Vol. 12, pp. 59–76). Elsevier Ltd. https://doi.org/10.1016/j.edurev.2014.06.001

Koetsier, J. (2020). 58% of American knowledge workers are now working remotely. Forbes. Retrieved online https://www.forbes.com/sites/johnkoetsier/2020/03/20/58-of-american-knowledge-workers-are-now-working-remotely/#1b21e5f93303.

Kucharczuk, A. J., Oliver, T. L., & Dowdell, E. B. (2022). Social media's influence on adolescents′ food choices: A mixed studies systematic literature review. In *Appetite* (Vol. 168). Academic Press. https://doi.org/10.1016/j.appet.2021.105765

Leiter, M. P., & Harvie, P. L. (1996). Burnout among mental health workers: A review and a research agenda. International journal of social psychiatry, 42(2), 90-101.

Li, G. C. (2022). "Involvement" or "lie flat": Teachers' work input choices in the incentive governance of colleges and universities. *Jiangsu Higher Education* (12), 107-114. doi: 10.13236/j.cnki.jshe.2022.12.016.

Liu, Q., Turner, D., & Jing, X. (2019). The "Double First-Class Initiative" in China: Background, Implementation, and Potential Problems. *Beijing International Review of Education*, *1*(1), 92–108. https://doi.org/10.1163/25902547-00101009

Lu, J.C. & Liu, J.L. (2023). "Inside out" or "lying flat": Teachers' work input choices in county secondary schools under the evaluation system. *Education Reference* (02), 99-105.

Maslach, C., Schaufeli, W. B., & Leiter, M. P. (2001). Job burnout. Annual review of psychology, 52(1), 397-422. https://doi.org/10.1146/annurev.psych.52.1.397

Meng, Q., & Sun, F. (2019). The impact of psychological empowerment on work engagement among university faculty members in China. *Psychology Research and Behavior Management*, *12*, 983–990. https://doi.org/10.2147/PRBM.S215912

Mérida-López, S., Bakker, A. B., & Extremera, N. (2019). How does emotional intelligence help teachers to stay engaged? Cross-validation of a moderated mediation model. *Personality and Individual Differences*, *151*. https://doi.org/10.1016/j.paid.2019.04.048

Mérida-López, S., Carvalho, V. S., Chambel, M. J., & Extremera, N. (2023). Emotional Intelligence and Teachers' Work Engagement: The Mediating and Moderating Role of Perceived Stress. *Journal of Psychology*. https://doi.org/10.1080/00223980.2023.2169231

Moher, D., Liberati, A., Tetzlaff, J., Altman, D. G., Antes, G., Atkins, D., Barbour, V., Barrowman, N., Berlin, J. A., Clark, J., Clarke, M., Cook, D., D'Amico, R., Deeks, J. J., Devereaux, P. J., Dickersin, K., Egger, M., Ernst, E., Gøtzsche, P. C., … Tugwell, P. (2009). Preferred reporting items for systematic reviews and meta-analyses: The PRISMA statement. In *PLoS Medicine* (Vol. 6, Issue 7). Public Library of Science. https://doi.org/10.1371/journal.pmed.1000097

Oubibi, M., Fute, A., Xiao, W., Sun, B., & Zhou, Y. (2022). Perceived Organizational Support and Career Satisfaction among Chinese Teachers: The Mediation Effects of Job Crafting and Work Engagement during COVID-19. *Sustainability (Switzerland)*, *14*(2). https://doi.org/10.3390/su14020623

Pollak, A., Chrupała-Pniak, M., Rudnicka, P., & Paliga, M. (2017). Work Engagement - A Systematic Review of Polish Research. In *Polish Psychological Bulletin* (Vol. 48, Issue 2, pp. 175–187). Walter de Gruyter GmbH. https://doi.org/10.1515/ppb-2017-0021

Rashidin, M. S., Javed, S., & Liu, B. (2020). Empirical Study on Spirituality, Employee's Engagement, and Job Satisfaction: Evidence from China. *International Journal of Public Administration*, *43*(12), 1042–1054. https://doi.org/10.1080/01900692.2019.1665066

Ren, M.N.; Liu, L.P. "Insomnia in Academia": Administrative logic and time pressure of young teachers in higher institutions. *China Youth Study*, (08),14-21+35. doi: 10.19633/j.cnki.11-2579/d.2021.0110.

Sang, G., Wang, K., Li, S., Xi, J., & Yang, D. (2023). Effort expectancy mediates the relationship between instructors' digital competence and their work engagement: evidence from universities in China. *Educational Technology Research and Development*. https://doi.org/10.1007/s11423-023-10205-4

Schaufeli, W. B., Salanova, M., González-romá, V., & Bakker, A. B. (2002). The Measurement of Engagement and Burnout: A Two Sample Confirmatory Factor Analytic Approach. Journal of Happiness Studies, 3(1), 71-. https://doi.org/10.1023/A:1015630930326

Schaufeli, W. B., & Bakker, A. B. (2004). Job demands, job resources, and their relationship with burnout and engagement: A multi-sample study. *Journal of Organizational Behavior*, *25*(3), 293–315. https://doi.org/10.1002/job.248

Schaufeli, W. B., Bakker, A. B., & Salanova, M. (2006). The measurement of work engagement with a short questionnaire: A cross-national study. *Educational and Psychological Measurement*, 66(4), 701–716. https://doi.org/10.1177/0013164405282471

Schaufeli, W. B., & Taris, T. W. (2014). A Critical Review of the Job Demands-Resources Model: Implications for Improving Work and Health. *In Bridging Occupational, Organizational and Public Health* (pp. 43–68). Springer Netherlands. https://doi.org/10.1007/978-94-007-5640-3_4

Shen, W., & Ma, H. (2022). Leading for Whom? Teaching-Research Officers' Role Perception and Work Engagement in Chinese Mainland. *ECNU Review of Education*, *5*(3), 491–508. https://doi.org/10.1177/20965311211009356

Solís García, P., Lago Urbano, R., & Real Castelao, S. (2021). Consequences of COVID-19 Confinement for Teachers: Family-Work Interactions, Technostress, and Perceived Organizational Support. *International Journal of Environmental Research and Public Health*, *18*(21). https://doi.org/10.3390/ijerph182111259

Wang, Q. (2018). Fifteen years of domestic work engagement research: a bibliometric review. *Psychological research* (06), 522-531.

Wong, E., Wong, E., Mavondo, F., & Fisher, J. (2020). Patient feedback to improve quality of patient-centered care in public hospitals: A systematic review of the evidence. In *BMC Health Services Research* (Vol. 20, Issue 1). BioMed Central Ltd. https://doi.org/10.1186/s12913-020-05383-3

Xu, L., Guo, J., Zheng, L., & Zhang, Q. (2023). Teacher Well-Being in Chinese Universities: Examining the Relationship between Challenge—Hindrance Stressors, Job Satisfaction, and Teaching Engagement. *International Journal of Environmental Research and Public Health*, *20*(2). https://doi.org/10.3390/ijerph20021523

Yang, J. (2021). The Predictive Role of Chinese EFL Teachers' Individual Self-Efficacy and Collective Efficacy in Their Work Engagement. *Frontiers in Psychology*, *12*. https://doi.org/10.3389/fpsyg.2021.752041

Zee, M., Koomen, H. M. Y., & de Jong, P. F. (2018). How different levels of conceptualization and measurement affect the relationship between teacher self-efficacy and students'

academic achievement. *Contemporary Educational Psychology*, *55*, 189–200. https://doi.org/10.1016/j.cedpsych.2018.09.006

Zeng, G., Chen, X., Cheung, H. Y., & Peng, K. (2019). Teachers' growth mindset and work engagement in the Chinese educational context: Well-being and perseverance of effort as mediators. *Frontiers in Psychology*, *10*(MAR). https://doi.org/10.3389/fpsyg.2019.00839

Zeng, J., & Xu, G. (2020a). Ethical leadership and young university teachers' work engagement: A moderated mediation model. *International Journal of Environmental Research and Public Health*, *17*(1). https://doi.org/10.3390/ijerph17010021

Zeng, J., & Xu, G. (2020b). Ethical leadership and young university teachers' work engagement: A moderated mediation model. *International Journal of Environmental Research and Public Health*, *17*(1). https://doi.org/10.3390/ijerph17010021

Zhang, Y.W., Gan, &Y.Q. (2005). Reliability test of the Chinese version of the Utrecht Work Engagement Scale (UWES). *Chinese Journal of Clinical Psychology*, (03),268-270+281.

Zhang, X., Biao, X. U., Peng, J. S., & Zhai, C. (2014). Effects of university teacher's academic pressure on research performance. *Studies in Science of Science*, 32(4), 549-558.

Zhang, D., He, J., & Fu, D. (2021). How Can We Improve Teacher's Work Engagement? Based on Chinese Experiences. *Frontiers in Psychology*, *12*. https://doi.org/10.3389/fpsyg.2021.721450

Zhao, Y., Zheng, Z., Pan, C., & Zhou, L. (2021). Self-esteem and Academic Engagement Among Adolescents: A Moderated Mediation Model. *Frontiers in Psychology*, *12*. https://doi.org/10.3389/fpsyg.2021.690828

Zhou, N., Tigelaar, D., & Admiraal, W. (2022). The relationship between vocational teachers' motivational beliefs and their engagement in work placement. *Journal of Vocational Education and Training*. https://doi.org/10.1080/13636820.2022.2066560