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TEACHER EDUCATION & DEVELOPMENT | REVIEW ARTICLE

Teacher motivation: Definition, research development and implications for teachers

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Abstract: The past decade has witnessed an increase in research on teacher motivation which has been proved a crucial factor closely related to a number of variables in education such as student motivation, educational reform, teaching practice and teachers' psychological fulfilment and well-being. To address the constant calls for teacher motivation research, this paper attempts to pose a comprehensive review of teacher motivation studies conducted from diversified theoretical perspectives. Five research areas related to teacher motivation research have been identified: influencing factors of teacher motivation; teacher motivation and teaching effectiveness; teacher motivation and student motivation; teacher motivation research across different disciplines; and the instruments for assessing teacher motivation. Based on a critique of existing literature in terms of theoretical perspectives, research methodology, research content and concerns about contextual issues, potential directions for future research are finally proposed.

Subjects: Continuing Professional Development; Teacher Training; Teaching & Learning

Keywords: teacher motivation; pre-service teacher; in-service teacher; teacher development; literature review

1. Introduction

Research on teacher motivation has developed and expanded since the late 1990s, and the past decade has witnessed a marked increase in literature in the area of teacher motivation research across various social cultural contexts. A significant step forward was the release of the special issue on motivation for teaching by *Learning and Instruction* in 2008 with the focus on relating the current

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PUBLIC INTEREST STATEMENT

The past decade has witnessed an increase in teacher motivation research across various contexts. This paper attempts to pose a literature review of the development of teacher motivation research by identifying five research areas: influencing factors of teacher motivation; teacher motivation and teaching effectiveness; teacher motivation and student motivation; teacher motivation research across different disciplines; and the instruments for assessing teacher motivation. Based on a critique of existing literature in terms of theoretical perspectives, research methodology, research content and concerns about contextual issues, potential directions for future research are finally proposed.

motivational theories to the domain of teaching which has been called a “Zeitgeist of interest” by Watt and Richardson (2008a). As a big contribution to the application of motivational theories in the new research domain of teachers in their career choice, education studies and professional commitment, the special issue was an important impetus to setting the agenda for future teacher motivation research.

The need to address teacher motivation also derives from teacher shortage reported by many western countries including the US, Australia and some other European countries like the UK, Germany and Norway (e.g. Kyriacou & Kunc, 2007; Weiss, 1999). A renewed research interest in teachers’ motivation to teach and to remain teaching in the past decade has highlighted possible causes of the existing and potential teacher shortages as early teacher attrition, teaching force ageing, imbalance of high demand with less reward, limited career opportunities, less job security and low prestige (OECD, 2005; Richardson & Watt, 2005, 2006; Sinclair, 2008; Sinclair, Dowson, & Mcinerney, 2006; Watt & Richardson, 2007; Watt et al., 2012). The significance of teacher motivation research is also self-evident as it is a crucial factor closely related to a number of variables in education such as student motivation, educational reform, teaching practice and teachers’ psychological fulfilment and well-being. Therefore, it is helpful for administrators to determine how to attract potential teachers and how to retain them in teaching.

Recently, Richardson and Watt (2010) have conducted a review of teacher motivation research with a focus on their 'FIT-Choice' (Factors Influencing Teaching Choice) programme with student teachers. Although they have identified a number of consequences of teacher motivation such as student outcomes, teachers’ psychological health and well-being, they did not go further to elaborate the existing literature concerning these areas. This study attempts to present a critical review of the development of teacher motivation research to address the constant calls and lay the foundation for future teacher motivation research. Firstly, teacher motivation is defined based on a review of existing literature, and then the summary and critique of literature is provided concerning the content of teacher motivation research in terms of pre-service teachers’ motivation to teach and in-service teachers’ motivation to remain teaching. Finally, areas for future research are proposed based on a critical appraisal of the existing literature.

It is significant to clearly indicate the sources of studies reviewed in this paper. As Table 1 demonstrates, a total of 130 studies reviewed in this paper include 117 journal articles, 7 book chapters, 4 monographs and 2 research reports, which were mainly published from 1980 to 2015. In addition, Table 1 also shows a further classification of the reviewed studies based on the research areas summed up in the following part of this paper.

Table 1. Sources of studies reviewed in this paper

Category		Number	Category		Number
Sources	Journal articles	117	Research areas	Influencing factors	37
	Book chapters	7		Teacher motivation & student motivation	21
	Monographs	4		Teacher motivation & teaching effectiveness	28
	Research reports	2		Instruments	5
Language teacher motivation				39	
Total		130	Total		130

2. Defining teacher motivation

As one of the most often-researched topics in the field of psychology and education, motivation has been generally viewed as energy or drive that moves people to do something by nature. However, given the complexity of motivation, there seems to be no consensus in the understanding of motivation (Dörnyei & Ushioda, 2011). Therefore, researchers were rather selective in their study focus by applying a range of motivation theories. Williams and Burden (1997) differentiated two aspects of motivation: initiating motivation which was concerned with the reasons for doing something and deciding to do something, and sustaining motivation referring to the effort for sustaining or persisting in doing something. Dörnyei and Ushioda (2001, 2011) identified two dimensions of defining motivation on which most researchers would agree: direction and magnitude of human behaviour. Accordingly, motivation specifies the reason why people decide to do something, how long people are willing to sustain the activity and how hard they are going to pursue the activity.

As for teacher motivation, Sinclair (2008) defined it in terms of attraction, retention and concentration as something that determines 'what attracts individuals to teaching, how long they remain in their initial teacher education courses and subsequently the teaching profession, and the extent to which they engage with their courses and the teaching profession' (2008, p. 37). Dörnyei and Ushioda (2011) highlighted the two dimensions of teacher motivation in accordance with their conceptions of motivation, namely, the motivation to teach and the motivation to remain in the profession. Their review of literature came to a conclusion of four featured components of teacher motivation: prominent intrinsic motivation which was closely related to inherent interest of teaching; social contextual influences relating to the impact of external conditions and constraints; temporal dimension with emphasis on lifelong commitment; and demotivating factors emanating from negative influences.

Given the existing definitions of teacher motivation, the second dimension identified by Dörnyei and Ushioda (2011) is much inclusive of the persistence and effort with teaching profession which constitutes the second and third dimensions of Sinclair's definition. Therefore, teacher motivation refers to reasons that emanating from individuals' intrinsic values to choose to teach and sustaining teaching, and the intensity of teacher motivation which is indicated by effort expended on teaching as influenced by a number of contextual factors.

3. Development of teacher motivation research

Early research on teacher motivation had common interests in initial teachers' motivation to choose teaching as a career. Only in recent years, research in in-service teachers' motivation to remain teaching has developed. Considering the two stages specified by the definition of teacher motivation, this literature review will be presented in terms of a distinction between pre-service teachers' motivation to teach and in-service teachers' motivation to remain teaching.

3.1. Pre-service teachers' motivation to teach

Research on characteristics of pre-service teachers' motivation to teach has generally suggested that intrinsic, altruistic and extrinsic motivations were major reasons accounting for the decision to teach, and intrinsic and altruistic motivations were crucial for satisfying and enduring career in the classroom in developed countries (e.g. Brookhart & Freeman, 1992; Karavas, 2010; Kyriacou & Coulthard, 2000). However, early motivation could not predict the maintenance of motivation with teaching as a career, and initial enthusiasm for teaching would decrease (Bess, 1977). This has been related to problems of high teacher attrition rates revealed in some studies (OECD, 2005; Richardson & Watt, 2006; Watt & Richardson, 2007; Watt et al., 2012). Based on a review of 44 studies, Brookhart and Freeman (1992) classified the commonly researched variables of pre-service teacher motivation into four categories: demographic and high-school background, motivation to teach and career expectations, confidence and optimism or anxiety and concerns about teaching and perceptions of the

roles and responsibilities of teachers. A review of literature in pre-service teachers' motivation to teach will enrich our understanding of the nature of pre-service teachers, and it will shed light on future research in different contexts.

3.2. Studies guided by different motivation theories

Social-cognitive theories of motivation, such as achievement goal theory and expectancy-value theory, have been applied to pre-service teacher motivation studies. Malmberg (2008) investigated the stability and changes in pre-service teachers' achievement goal orientations in a four-year longitudinal study with a sample of Finland-Swedish student teachers. Using individual growth models, they discovered a general increase in achievement goal orientations over time with a peak during the third year of their studies, and the increase in mastery goal orientation was larger than that in performance goal orientation. Their further exploration of associations with academic-related factors indicated that secondary school achievement was a predictor for performance-approach goal orientation and graded performance trajectories, and reflective thinking, intrinsic motivation, and control-expectancy belief were associated with mastery goal orientation increases. However, task-irrelevant behaviour was related to low graded performance and the increase in performance goal orientation.

The large-scale Australian study conducted by Richardson and Watt (2006) was one of the most significant researches in the field of pre-service teacher motivation studies based on expectancy-value framework. Their interest in pre-service teachers' motivation to teach derived from the increasing teaching shortage reported in the UK, the US, Australia, Asia and other European countries (OECD, 2005). Richardson and Watt (2006) conducted a three-phase comprehensive study planned with the same participants of pre-service teacher candidates across three Australian universities from their entry into teacher education, at the point of graduation from teacher education programme, and two years after graduation. Based on expectancy-value theory, they (Richardson & Watt, 2006; Watt & Richardson, 2007) developed the FIT-Choice model to guide their systematic investigations into the factors influencing pre-service teachers' choice to teach. In the FIT-Choice framework, antecedent socialization and perceptions of previous experience were presented on the first part of the model, followed by a context of the choice of teaching career combining constructs of task perceptions, self-perceptions, values and fallback career. Task demand construct consisted of expertise and high demand, and social status, teacher moral and salary constituted the task return construct. The value construct in the model included intrinsic value, personal utility value and social utility value. On the third part of the model, choice of a teaching career was presented as an outcome variable. The FIT-Choice model has demonstrated good explanatory ability as it was applied to subsequent studies, and it also provides an integrated approach in comparative studies across diverse samples and settings (e.g. Fokkens-Bruinsma & Canrinus, 2013; Watt et al., 2012).

3.3. Factors influencing pre-service teachers' motivation to teach

Early teacher motivation research had common interests in initial teachers' motivation for career choice. Richards (1960) indicated that satisfaction and good preparation for family life were top reasons for entering teaching, and Fox (1961) listed four frequently nominated reasons: a desire to work with children or adolescents, a desire to impart knowledge, the opportunity to continue one's own education and service to society. These initiative findings have been repeatedly confirmed by subsequent studies conducted in different social educational contexts (e.g. Alexander, Chant, & Cox, 1994; Kyriacou & Coulthard, 2000; Richardson & Watt, 2006; Sinclair, 2008; Sinclair et al., 2006). In addition, no difference was found in motivation between those who chose to continue in teacher training and those who withdraw from the training as they all reported that working with children and service were top reasons (McIntire & Pratt, 1985). Table 2 summarizes the factors influencing pre-service teachers' motivation to choose teaching as a career.

Report released by OECD (2005) verified that a desire to work with children and adolescents, the potential for intellectual fulfilment and a means to make social contribution frequently headed the list of reasons for entering teaching. The latest cross-cultural study of Watt et al. (2012) with the sample of pre-service teachers from Australia, Germany and Norway, indicated that no great

Table 2. Factors influencing pre-service and in-service teachers' motivation

Pre-service teachers		In-service teachers			
Motivating factors	Source	Motivating factors	Source	Demotivating factors	Source
Demography	Brookhart and Freeman (1992)	Demography	Carson and Chase (2009)	Working environment (stress, administration, inadequate career structures, teaching repetitiveness etc.)	Dörnyei and Ushioda (2011); Kiziltepe (2006)
Personal characteristics	Richardson and Watt (2006)	Teacher autonomy	Kaiser (1981)		
Level of teaching	Book and Freeman (1986)	Professional factors (professional input, professional development, professional relations and ties, etc.)	Carson and Chase (2009); Packard and Dereshiwsky (1990)	Teacher autonomy (insufficient self-efficacy, inhibition of teacher autonomy)	Dörnyei and Ushioda (2011)
Altruistic values	Sinclair (2008)				
Intrinsic values (perceptions, expectations, responsibilities and concerns about teaching)	Brookhart and Freeman (1992)	Working environment (leadership, working relationships, institutional support etc.)	Mani (2002); Packard and Dereshiwsky (1990)	Extrinsic values (low salaries, less opportunity to do research etc.)	Kiziltepe (2008)
Extrinsic values (social status, job security, job transferability, time for family etc.)	Richardson and Watt (2006); Watt and Richardson (2007)	Intrinsic values (self-evaluation, intellectual simulation, etc.)	Sinclair (2008)	Students (attitudes, behaviours etc.)	Kiziltepe (2006); Sugino (2010)
Prior teaching and learning experiences	Brookhart and Freeman (1992); Richardson and Watt (2006); Watt and Richardson (2007)	Extrinsic values (financial benefits, family and community influence, convenience and benefits of teaching etc.)	Sinclair (2008)		
Social and cultural context	Kyriacou and Kobori (1998); Watt and Richardson (2008a)				
Working environment (authority, leadership etc.)	Sinclair (2008)				

difference of motivation to teach was found due to contextual country features. However, Watt and Richardson (2008a) also indicated that motivation for career choice could be framed by mixed factors within different sociocultural contexts, and different findings have been found as far as developing countries were concerned. Studies have demonstrated that more extrinsic motivations have been found as important motivations for pre-service teachers in Brunei (Yong, 1995), Zimbabwe (Chivore, 1988) and Slovenia (Kyriacou & Kobori, 1998). Extrinsic motivations such as salary, job security and career status were valued as more important reasons for teaching in these countries. However, it is interesting to note that intrinsic motivation was found to play a major role in teachers' motivation for teaching in China (Tang, 2011). The reflected differences could be an indication of different social and cultural contexts in which teaching and learning occurred (Kyriacou & Kobori, 1998).

In addition, reasons to entering teaching were different according to various educational levels and personal characteristics. Despite the description of being 'female, young, from less than affluent family backgrounds, English speaking, and born of Australian parents' (Richardson & Watt, 2006), pre-service elementary teachers were found more child-centred in their motivations for teaching, while pre-service secondary teachers who were more influenced by a former teacher were more subject centred (Book & Freeman, 1986). Based on the planned effort and persistence within the teaching profession, Watt and Richardson (2008b) classified Australian teacher education candidates into three types: highly engaged persisters, highly engaged switchers with significantly lower planned persistence, and lower engaged desisters with the lowest professional engagement and career development aspiration factors. Their classifications enabled them to further examine the

motivational differences in career choice, perceptions of the profession and career intentions among different types when demographic characteristics were compared.

In order to identify motivation factors and the change in pre-service teachers' motivation, Sinclair (2008) distributed Motivational Orientations to Teach Survey (MOT-S) twice with 186 student teachers at the beginning and the end of their first semester of teacher education. He proposed a hierarchy of pre-service teachers' motivation to teach. Specifically, pre-service teachers were significantly motivated by higher intrinsic motivation than extrinsic motivation. The strongest intrinsic motivation factors were working with children, intellectual stimulation and self-evaluation, whereas the strongest extrinsic motivations included the nature of teaching work, working conditions and life-fit. Besides, an increase over time was found in five motivating factors including self-evaluation, authority and leadership, life-fit, influence of others and career change, and the rest six factors were decline over time in which three factors, i.e. working with children, intellectual stimulation and working conditions, did significantly.

3.4. In-service teacher motivation research

The influence of in-service teacher motivation to remain teaching began to be approached seriously in the 1990s. According to de Jesus and Lens (2005), the significance of in-service teacher motivation research lay in the role it played to enhance student motivation, advance educational reform and fulfil teachers themselves. Years of studies of in-service teacher motivation have a strong tradition in the following five research fields: influencing factors, teacher motivation and teaching effectiveness, relationship between teacher motivation and student motivation, teacher motivation research across different disciplines and instruments for assessing teacher motivation. Table 3 summarizes the major findings for each area.

3.4.1. Influencing factors of teacher motivation

A strong tradition in early in-service teacher motivation research was the exploration of various factors influencing teacher motivation. The influencing factors motivating and demotivating in-service teachers are illustrated in Table 2. It has been revealed by a number of studies that teacher motivation could be enriched when teachers have the right to choose teaching materials, programmes and teaching methods and to determine classroom organization and discipline (Kaiser, 1981). Factors identified by Packard and Dereshiwsky (1990) included adequate professional relations and ties, professional input, teacher evaluation, leadership and teacher development. Other identified motivation factors included social values and norms (Peterson & Ruiz-Quintanilla, 2003), working environment and colleagues (Mani, 2002), teacher personal information and professional variables (Carson & Chase, 2009). Praver and Oga-Baldwin (2008) provided a list of direct motivating factors (intrinsic motivation and extrinsic motivation) and indirect motivating factors (autonomy, working relationships, self-realization and institutional support). They believed that these factors heavily influenced the maintenance of teacher motivation over their career. As intrinsic motivation has been considered as significant factor for pre-service teachers to make career choice, extrinsic influences especially financial benefits such as salary, pension and insurance etc. were often mentioned extrinsic factors motivating in-service teachers. Dinham and Scott (2000) separated the contextual factors into two categories: micro- and macro-contextual influences. These categories have been redefined as school-based extrinsic factors and systemic/societal-level factors (Dörnyei & Ushioda, 2011).

A recent review study by Sinclair (2008) classified all determinants into ten categories, including calling, students, altruism, intellectual stimulation, influence of others, perceived benefits or convenience of teaching, the nature of teaching work, a desire for a career change, the ease of entry into teacher education, and the status of teaching. However, Sinclair offered no explanation for the distinction between various categories of determinants. Two problems can be raised about this classification. One is the possible overlaps in the nature of factors involved in categories of 'the perceived benefits or convenience of teaching', 'the nature of teaching work' and 'the status of teaching', as

Table 3. Major findings for in-service teacher motivation research

Research areas	Major findings
Influencing factors	<ul style="list-style-type: none"> (a) Identifying motivating factors (e.g. Carson & Chase, 2009; Kaiser, 1981); (b) Classification of motivating factors (e.g. Dinham & Scott, 2000; Sinclair, 2008); (c) Demotivating factors and classification (e.g. Bess, 1977; Dörnyei & Ushioda, 2011); (d) Students as motivating and demotivating factors (e.g. Kiziltepe, 2008; Sugino, 2010)
Teacher motivation & Teaching effectiveness	Teachers goal orientations for teaching predict their instructional practice (e.g. Retelsdorf & Günther, 2011), teacher approaches to teaching (Han et al., 2015, 2016), teaching styles (Hein et al., 2012) and the improved teaching practice (Thoonen et al., 2011)
Teacher motivation & Student motivation	<ul style="list-style-type: none"> (a) Teacher motivation is related to student motivation via teachers' use of motivating strategies (Bernaus & Gardner, 2008; Bernaus et al., 2009); (b) The extent to which teachers are autonomous-supportive or controlling significantly influence students' intrinsic motivation and determination (Pelletier et al., 2002; Radel et al., 2010)
Language teacher motivation	<ul style="list-style-type: none"> (a) Language teachers were highly motivated by intrinsic factors than extrinsic ones (e.g. Erkaya, 2012; Wild et al., 1997); (b) Teachers' enthusiasm and commitment were generally confirmed to be the most important factors that motivate learners in language learning (Dörnyei, 1996)
Instruments	<ul style="list-style-type: none"> (a) An integrated model of teacher motivation based on expectancy-value and learned helplessness (de Jesus & Lens, 2005); (b) A measure of Goal Orientations for Teaching based on goal orientation theory (Butler, 2007, 2012; Nitsche et al., 2011); (c) A Subscale Assessing Four Types of Motivation for Teaching based on SDT (Roth et al., 2007); (d) A Dutch-language instrument for teacher motivation in higher education (Visser-Wijnveen et al., 2012)

they mainly concentrate on advantages or priorities in different aspects provided by teaching as a career. Another problem arose as the majority of the research was not conducted in direct response to teacher motivation. Therefore, it may not be appropriate to classify these studies into the research area of teacher motivation in the strict sense.

Teacher motivation, though primarily derived from intrinsic values of teaching, may be undermined by a number of factors. A lot of research has pointed out that teachers suffered from higher levels of professional stress and lower levels of motivation than other professional groups (e.g. Bess, 1977; de Jesus & Lens, 2005; Lens & de Jesus, 1999). The problem of teacher attrition in their early years of teaching identified in many European countries including Australia, England, New Zealand and US (Dinham & Scott, 2000; Watt & Richardson, 2008a) has been studied in the label of teacher demotivation. According to Dörnyei and Ushioda (2011), demotivation was concerned with negative factors that cancelled out the existing motivation. As the negative influence may be related to either particular events and experience or factors in social environment, a demotivated teacher is a teacher who was once motivated but lost interest for some reasons (Kiziltepe, 2008). According to Bess (1977), the difficulties which may frustrate teacher motivation fell into nine categories:

conceptualization and operationalization of education aims in society, determination of the pedagogical outcomes, ambiguous and conflicting role demands, variety found in teaching routine, mastery of teaching technology, understanding of student learning styles, change measurement, new knowledge acquisition and self-awareness maintenance throughout life cycle. Recently, Dörnyei and Ushioda (2011) suggested five categories of demotivating factors, including stress, inhibition of teacher autonomy, insufficient self-efficacy, inadequate career structures, content repetitiveness and limited potential for intellectual development.

It is inevitable for teacher motivation to have a close relationship with students. In Atkinson's (2000) discussion of relationship between students and their motivated and demotivated teachers, it was found that the disbelief and negative view of a demotivated teacher in students' abilities, progress and outcomes enabled him to feel the need to be in control and the difficulty to be enthusiastic about students. In contrast, motivated teachers reported enthusiasm about both teaching and students' work. Another supporting study was conducted in Turkish context when Kiziltepe (2006) found that administration and students were major factors demotivating high school teachers, and her subsequent study (2008) indicated that students, low salaries and less opportunity to do research were outstanding demotivating factors for university teachers.

Students have been recognized as one of the primary factors to motivate and demotivate teachers (Kiziltepe, 2006, 2008). Sugino's (2010) investigation of demotivating factors for Japanese EFL college teachers suggested that five out of the top seven demotivating factors were related to student attitudes. Other supporting evidence can be found in Kiziltepe's (2008) study with teachers from different faculties of a public university in Turkey. Compressing the motivating factors under the headings of students, career, social status and ideal and demotivating factors into students, economics, structural and physical characteristics, Kiziltepe (2008) asked the participants to rank in order the three factors motivating or demotivating them most and students were found to be the main source of motivation and demotivation for teachers.

3.4.2. *Teacher motivation and teaching effectiveness*

Teacher motivation is an essential component to enhance classroom effectiveness (Carson & Chase, 2009). As students' learning outcomes are highly dependent on the quality of instruction, teaching effectiveness has been explored in terms of teaching styles, teacher approaches to teaching, teaching practice and instruction behaviours in relation to teacher motivation factors (e.g. Butler & Shibaz, 2014; Han, Yin, & Wang, 2015; Kunter et al., 2008; Retelsdorf, Butler, Streblov, & Schiefele, 2010; Retelsdorf & Günther, 2011; Thoonen, Slegers, Oort, Peetsma, & Geijssel, 2011).

Inspired by research into students' goal orientations for learning, for which the relationship between different personal goals for learning and strategies students used when learning has been established (Nolen, 1988), the relationships between different goals for teaching and the teaching behaviours have been explored on the basis of achievement goal theory. Retelsdorf and his colleagues (2010) proposed that teachers' goal orientations for teaching predicted the goals for learning that they emphasized in the classroom, which in turn influenced students' goals. However, the links between teachers' goal orientations for teaching and their teaching practice were inconsistent among Germany and Israel teachers. Therefore, Retelsdorf and Günther (2011) opined that 'the degree to which teachers promote students' comprehensive learning rather than surface learning might be taken as an indicator for instructional quality (p. 1112)', and proposed a model indicating the sequential relations between teacher goal orientations for teaching, reference norms and instructional practice. The reference norms were distinguished between individual reference norms and social reference norm, and the distinction of instructional practices was made between teachers' promotion of deep learning and surface learning in the classroom. Results of the study supported the indirect effects of mastery goals through the individual reference norm on comprehensive learning and negative effects through the social reference norm on surface learning, and the positive indirect effects of ability-approach and ability-avoidance goals on surface learning through the social reference norms.

In addition, Hein et al. (2012)'s study with physical education teachers from five countries examined the relationship between teacher motivation and teaching styles. The study confirmed the hypothesis that teachers' autonomous motivation was related to productive (student-centred) teaching styles while non-autonomously motivated teacher adopted reproductive (teacher-centred) teaching styles. Based on Leithwood, Jantzi and Mascall's (2002) framework of educator performance, Thoonen et al. (2011) developed a model of relations among teacher motivational factors, school organizational conditions, leadership practices, professional learning activities and teaching practices. The model assumes that teacher motivation indirectly influences the quality of teaching practice through their engagement in professional learning activities. To test this hypothesis, they conducted a study with a large-scale sample of elementary school teachers in the Netherlands to examine the impact of teacher motivation on teaching practice improvement. The three motivational factors (expectancy, value and affective) were found to have different effect on teacher engagement in professional learning activities. Specifically, of all the motivational components, teacher self-efficacy explains most of the variance in teacher learning and teaching practices; value component indirectly influences teachers' sense of self-efficacy and engagement in teacher learning to a great extent; and the affective component in terms of teacher well-being and job satisfaction inhibit teachers' motivation to engage in learning and improve teaching practice.

3.4.3. *The relationship between teacher motivation and student motivation*

The relevance of teacher motivation to student motivation has long been acknowledged. Although teacher motivation has been found related to student motivation via teachers' use of motivating strategies (Bernaus & Gardner, 2008; Bernaus, Wilson, & Gardner, 2009), among the various motivation theories that have been applied to teacher motivation research, self-determination theory (SDT) has been extensively employed as the framework in studies of the influence of teacher motivation on students' motivation. To examine the four different types of motivations classified by SDT, Roth, Assor, Kanat-Maymon, and Kaplan (2007) used a self-designed questionnaire to analyse teachers' capacity to differentiate different types of motivation varying in terms of autonomy. The finding that four types of motivation (external, introjected, identified and intrinsic motivation) fell in the expected location along the motivation continuum of SDT provided supporting evidence to applying SDT to teacher motivation research. According to SDT, individuals' perceptions of context as supportive of autonomy or controlling determined the impact of external events on intrinsic motivation and self-determination. It has been documented that a profile of determinants affects teacher's self-determination toward work which has an impact on student motivation. Deci, Spiegel, Ryan, Koestner, and Kauffman (1982) suggested that teachers were more likely to be controlling on students when they were more pressured by superiors, and one of the significant factors that pressed upon teachers was the responsibility for students' performing up to standards. In support, Pelletier, Séguin-Lévesque, and Legault (2002) used structural equation modelling to illustrate sequential relationships between teachers' perceptions of constraints at work, perceptions of students' self-determination towards learning, self-determination towards work and teaching behaviours. According to their model, the more constraints at levels of curriculum, administration and colleagues teachers perceived, together with their perceptions of students' low self-determination, the less they were self-determined towards teaching, and the more they became controlling on students. However, their study was criticized for being conducted in laboratory environment (Taylor, Ntoumanis, & Smith, 2009). With the purpose to explore whether the findings in experimental research occur in lived experience, Taylor et al. (2009) used structural equation modelling to find that contextual and personal antecedents in terms of job pressure, perceptions of student self-determination, and teachers' autonomous orientation predicted physical education teachers' psychological need satisfaction, which in turn influenced teachers' motivational strategies.

The extent to which teachers are autonomous-supportive or controlling, significantly influence students' intrinsic motivation and determination (Pelletier et al., 2002; Radell, Sarrazin, Legrain, & Wild, 2010). Deci, Schwartz, Sheinman, and Ryan (1981) initially proposed that teachers' orientation towards controlling or autonomy was a significant factor to determine the classroom environment for students. Specifically, students of the autonomy-oriented teachers were more intrinsically

motivated and had higher self-esteem than those of the control-oriented teachers. According to Wild, Enzle, Nix, and Deci (1997)'s observation, students taught by an intrinsically motivated teacher reported higher interest and enjoyment in learning than those taught by an extrinsically motivated teacher. In addition, Roth et al. (2007)'s study supported that teachers' autonomous motivation was positively associated with autonomy-supportive teaching, autonomous motivation for learning and personal accomplishment, but negatively associated with emotional exhaustion. The result also highlighted that the influence of autonomous motivation for teacher on autonomous motivation for learning was mediated by students' perception of autonomy-supportive teaching.

3.4.4. *Teacher motivation research across different disciplines*

Among the limited studies on teacher motivation conducted within specific discipline, teacher motivation has been researched in physical education (e.g. Carson & Chase, 2009; Hein et al., 2012), mathematics (Kunter et al., 2008) and language learning (e.g. Erkaya, 2012; Karavas, 2010; Kassabgy, Boraie, & Schmidt, 2001). As studies on language teacher motivation have received increasing attention across different contexts in the past decade, the review of related studies is expected to provide significant guidance for future research in specific discipline.

The gap in language teachers has been addressed repeatedly by Dörnyei (Dörnyei, 2005; Dörnyei & Ushioda, 2001, 2011). Pennington (1995) was the first to research language teacher motivation though her studies dealt specifically with ESL (English as a Second Language) teachers, and she approached the topic of teacher motivation with TESOL (US-based organization Teachers of English to Speakers of Other Languages, the world's largest international association of L2 teachers) members through the perspective of job satisfaction which has been a central area of interest for many researchers. Pennington and Riley (1991) has indicated that ESL teachers derived greater satisfaction from internal rewards than from external benefits, and it was the nature of teaching itself to sustain ESL teachers emotionally in their work. Subsequent studies of teacher motivation together with job satisfaction in TESOL has commonly found that teachers, in general, intrinsically satisfied and fulfilled with teaching, but extrinsically dissatisfied with pay, job security, marginalization and opportunity for promotion (Kassabgy et al., 2001).

A brief review of the limited studies concerning language teacher motivation indicates that researchers have much interest in exploring influencing factors motivating or demotivating EFL/ESL teachers (Erkaya, 2012). Factors influencing EFL teacher motivation have been extensively explored in correlation with job satisfaction. Empirical studies have repeatedly validated the dominance of intrinsic teacher motivation over extrinsic motivation (e.g. Doyle & Kim, 1999; Erkaya, 2012; Kassabgy et al., 2001; Wild et al., 1997). With the subject of 107 experienced ESL/EFL teachers from Egypt and Hawaii, the study conducted by Kassabgy et al.'s (2001) indicated that there was no major discrepancy between EFL teachers' ranking of what they considered important and what they got from their job in terms of rewards. As extrinsic aspects of work such as salary, title and opportunities for promotion were rated less important, researchers indicated that teachers may emphasize the importance of intrinsic over extrinsic rewards as a group, but there was considerable variation in individual concerns. However, extrinsic aspects of work such as salary, title and opportunities for promotion were rated less important. External factors such as student attitudes, teaching material, teaching method, working conditions including facilities, and human relationships were reported potential demotivating factors (Sugino, 2010) in together with cultural and school specific factors. Based on these findings, relationships between teacher motivation and job satisfaction (Bishay, 1996; Praver & Oga-Baldwin, 2008), and correlations with learner motivation (Christopher, 2010) have been further investigated on a world wide scale.

Additionally, EFL teachers reported relatively higher level of stress and burnout than any other professional group (Karavas, 2010). However, most teachers claimed to enjoy teaching and would not choose to give it up (Bess, 1977; Karavas, 2010) because they thought that teaching itself is sufficient to sustain them emotionally (Christopher, 2010). Teachers' enthusiasm and commitment were generally confirmed to be the most important factors that motivate learners in language

learning (Dörnyei, 1996). Increasing number of publications appear these years though much still needs to be done. Baleghizadeh and Gordani (2012) set out an investigation on the relationship between quality of work and teacher motivation among second school EFL teachers in Iran. The study confirmed their assumption of quality of work as a contributor to motivation. Particularly, participants reported a medium level of quality of work in which quality of work life in the category of social integration in organization ranked the highest level and category of chance of growth graded the lowest level. In addition, a medium-to-low level of teacher motivation was reported by participants who perceived the highest level for career resilience (the ability to adapt to changing circumstances) and the lowest for career insight (the realism and clarity of the individual's career goals). Regarding the positive direct relationship between the quality of work as a predictor and teacher motivation as a criterion, four factors of the quality of work life were identified to significantly correlate with career motivation, they were work conditions, chance of growth and security, social integration in the organization and the use and development of capacities. Therefore, he suggested improving teaching motivation through the enhancement of human dignity and growth. Similar findings were also revealed in Karavas' study (2010) with Greek EFL teachers which indicated that students' low level of learning motivation and resultant behaviour in class constituted the main source of reported stress and burnout of Greek EFL teacher. Karavas further indicated the effect of gender and working experience differences on teachers' satisfaction as he summarized that 'younger teachers and especially women at the very first stage of their teaching career seem to be less satisfied with their work than their older, more experienced counterparts'.

3.4.5. Instruments for assessing teacher motivation

The review of teacher motivation research indicates a dominance of quantitative method over qualitative approach in related studies, and a majority of research adopted quantitative methods in terms of standardized questionnaires to investigate the relationship between teacher motivation and a number of variables. The dominance of quantitative method has generated a set of instruments developed by different researchers to measure teacher motivation under the guidance of SDT (Roth et al., 2007), achievement goal theory (Butler, 2007, 2012; Retelsdorf et al., 2010), and work motivation theory (Taylor et al., 2009).

With the assumption of considering professional engagement as a primary indicator of teacher motivation, de Jesus and Lens (2005) proposed an integrated model of teacher motivation which was constructed from the perspective of expectancy-value and learned helplessness. The inclusive variables of the model (professional engagement, goal value, success expectancies, intrinsic motivation, efficacy expectancy, control-expectancy, success and failure attributions) were presented recursive and unidirectional, and based on the theoretical meaning of the above variables, a self-report instrument was developed to test the model. Empirical support in terms of analyses of path coefficients and the variance of variables was offered by a study with a sample of 272 elementary and secondary Portuguese teachers. Results indicated that several hypotheses derived from the comprehensive model can account for the recursive and hierarchically sequenced causal relationship between the inclusive variables proposed by self-efficacy theory and intrinsic motivation theory (de Jesus & Lens, 2005).

Based on Nicholls' Motivational Orientations Measure developed for students, Butler (2007, 2012) applied achievement goal theory to formulate and validate a self-report measure of Goal Orientations for Teaching (GOT) with five factors (mastery goals, ability-approach goals, ability-avoidance goals, work avoidance goals and relational goals). The construct validity of the model has been examined by exploration of relationships between teacher achievement goals and students' perceptions of instructional practice, help-seeking perceptions and cheating with sample teachers from Israel and Germany (Butler, 2007; Butler & Shibaz, 2008, 2014; Retelsdorf et al., 2010). Additionally, the application of GOT was also supported with tertiary teachers in Chinese context (Han, Yin, & Wang, 2015, 2016).

In addition to Butler's work, Nitsche, Dickhäuser, Fasching, and Dresel (2011) also provided a conceptual extension of Butler's model by proposing a 36-item scale with three competence facets of

learning goal orientations (pedagogical knowledge, content knowledge, pedagogical content knowledge) and four types of addressee groups (principal/instructor, colleagues/fellow teacher trainees, students, self) of performance-approach and performance-avoidance goals. They expected their questionnaire to be applicable to both in-service teachers and teacher trainees, and applied the questionnaire to studies of the relationship between teachers' goals and their work performance (Dresel, Fasching, Steuer, Nitsche, & Dickhäuser, 2013; Nitsche, Dickhäuser, Fasching, & Dresel, 2013).

Roth et al. (2007) developed a Subscales Assessing Four Types of Motivation for Teaching under SDT framework to examine teachers' autonomous motivation for teaching and its correlates in teachers and students. The measurement was arranged in a task-specific format, and for each teaching-related task, four responses representing four different types of motivation was assessed: external, introjected, identified and intrinsic. Subsequent study conducted by Hein et al. (2012) proved the appropriateness of using the instrument for physical education teachers, and it confirmed the positive relationship between autonomous teacher motivation and student-centred or reproductive teaching styles.

As most existing instruments were designed and tested by teachers at primary and secondary education, Visser-Wijnveen, Stes, and Van Petegem (2012) developed a Dutch questionnaire including motivational aspects of efficacy (personal efficacy, teaching efficacy, and outcome efficacy), interest and effort in response to the lack of instrument for teacher motivation in higher education, because they believed that the competition between research and teaching constituted major distinctive features of the higher education settings. With voluntary university teachers, their 25-item Dutch-language instrument was validated by analysing the relationships between teacher motivation and other educational practice. However, with voluntary participants who were supposed to be highly motivated, the author indicated that the questionnaire was subject to be tested with non-voluntary participants.

However, in review of studies conducted in the field of motivation in educational settings, the focus on students' learning motivations has generated a number of instruments to measure student motivation. For example, the Attitude/Motivation Test Battery (AMTB, Gardner, 1985), the Motivated Strategies for Learning Questionnaire (MSLQ, Pintrich, Smith, Garcia, & McKeachie, 1993), and the Academic Motivation Scale (Vallerand et al., 1992). However, instruments of teacher motivation employed by different researchers are subject to further validation. Therefore, there is still a large room for future research to develop instruments for teacher motivation which could facilitate an in-depth understanding of teacher motivation from various perspectives.

4. Future research directions

A good understanding of the existing literature is of great significance as it indicates the possibilities of directions for future research. The literature provides an overview of a range of factors motivating and demotivating pre-service and in-service teachers, and the role teacher motivation plays in possible links with other areas. However, it also reveals some gaps in the existing studies, which sheds light on the directions of the future research.

4.1. Theoretical perspectives

The review of teacher motivation research indicates, despite the fact that social-cognitive theories of motivation such as expectancy-value theory, achievement goal orientation theory and self-determination theory have been extensively applied to pre-service and in-service teacher motivation studies, that attempts of different motivational approaches have achieved no agreement on generally applicable motivation theories for teacher motivation research. This challenging attempt has been identified by Dörnyei (1996) as he claimed that it was not the lack of theories but rather the abundance of approaches to explain motivation.

A number of limitations of cognitive motivation theories emerged in the review, and some of the limitations have already been pointed out (e.g. Dörnyei, 2003; Noels, Pelletier, Clément, & Vallerand, 2000; Vandergrift, 2005). One of the major challenges discussed by researchers is the overlap of motivation constructs that constitute different motivation theories. Moreover, overlap is also found among the constructs within one particular theory. The best evidence can be found in constructs of SDT which has been criticized for no theoretical evidence clear enough to differentiate the different extrinsic and intrinsic motivation (e.g. Noels et al., 2000; Vandergrift, 2005). Thirdly, the linear models of motivation theories and the direct cause-effect could not provide a holistic picture to view the relationship between related variables in motivation research (Dörnyei & Ushioda, 2011). In fact, the dispute between considering motivation as an independent variable to predict behaviour and viewing it as a dependent variable of performance has never ceased. As motivation is usually associated with a series of complicated cognitive process, a possible reason for the disagreement among various motivation theories might be their particular focus on different phases of motivation process.

Moreover, as previous theories of motivation bear the criticism of inability to capture the complexity of motivation process and relationships with a number of variables, a recent longitudinal study conducted by Kubanyiova (2009) proposed a Language Teacher Self Model based on a process-oriented approach in motivation research. The model has conceptions of ideal language teacher self, ought-to language teacher and feared language teacher, and the assumption underlying the model is that teachers would be motivated by the discrepancy between their actual and ideal selves, actual and ought-to selves and future (ideal or ought-to) and feared selves. The findings suggested that teacher would be motivated to develop when the reform input was consistent with their future-oriented possible language teacher selves, and the awareness of a dissonance between teachers' actual and ideal selves would facilitate teachers learning process. However, as the only study based on a process-oriented approach, there is no other empirical evidence supportive for Kubanyiova's model. Therefore, further application of theories concerning motivational process should be tested and supported by more empirical studies in the future.

4.2. Research methodology

Quantitative approach has served as a significant technique to identify influencing factors of teacher motivation from a contemporary perspective, and explore the relationships between teacher motivation constructs and a number of consequent issues. However, early studies on teacher motivation have been criticized for being overdependent on survey methodology, single institutional design, together with technical limitations in research design, sample size and instrument quality (Brookhart & Freeman, 1992). For example, reasons for pre-service teacher to entering teaching have been repeatedly confirmed by studies across different countries though it has been correlated with relevant factors such as teacher self-efficacy and quality of teacher training programme (Bruinsma & Jansen, 2010), perceptions about the profession (Sinclair, 2008), professional engagement, career development aspirations, professional plans and career choice satisfaction (Watt & Richardson, 2008a). Although qualitative method and longitudinal study have been adopted in teacher motivation research (e.g. Kieschke & Schaarschmidt, 2008; Malmberg, 2008; Watt & Richardson, 2008a, 2008b), there is a heavy reliance, for majority of researchers, on data collected by self-report questionnaires which may prevent them from examining all complexity of teacher motivation. The consistency between self-reported ratings of beliefs, perceptions and capability and demonstrated knowledge and experiences in real educational settings has been questioned by Alexander (2008) as he indicated that there was no clear indicator to support the positive relation between self-reported ratings and demonstrated knowledge up to now, however, self-reported perception tended to be high while knowledge was rather low to moderate.

It is also worth noting that the strong tradition of investigating factors motivating and demotivating teachers has predominantly focused on the list of a number of influencing factors, while further in-depth exploration of the associations between various variables has been overlooked. In order to gain a more comprehensive picture of teacher motivation, research method should be extended beyond numerical data to involve a full range of data collection such as observation and interviews.

Therefore, researchers should gather in-depth and multiple information about individuals' subjective interpretation and the complexity of teacher motivation rather than simply narrowing the data into a few categories.

4.3. The effect of teacher motivation on student learning

Previous research on teacher motivation has established close relationship between teacher motivation and student learning, and studies under SDT framework suggested that teaching behaviour or styles could mediate the impact of teacher motivation on student motivation (e.g. Roth et al., 2007; Taylor et al., 2009). However, among the examined relationships between teacher motivation and teaching behaviours or styles, and student motivation, the linkage is rather uncertain due to the research design and paucity in existing literature. Therefore, future research is suggested to increase the ability to draw causal inferences, for example, how autonomous teacher motivation enables teachers to support students' autonomy in learning, and how variance of teachers' behaviours in class influences students' autonomous motivation (Roth et al., 2007). What is more, since SDT has been employed as the only theoretical framework to guide related studies, there is a great need for future research to be conducted under extended and enriched motivational theories to provide more supporting evidence of the positive link between teacher motivation and student motivation.

Moreover, since substantial research on student affective effects has supported the positive impact of student motivation, one of the key factors of affective effects, on their cognitive outcomes (Bernaus & Gardner, 2008; Gardner, Tremblay, & Masgoret, 1997; Masgoret & Gardner, 2003; Tremblay & Gardner, 1995), the possible effects of teacher motivation on students' cognitive outcomes could be reasonably predicted both empirically and theoretically. Therefore, the complexity in the relationship between teacher motivation, student motivation, and student cognitive outcomes could also be expected especially when student motivation is considered as a mediator. To test these hypotheses, a series of studies are of urgent need to be conducted in educational context, and intensive studies on the possible relationships between teacher motivation, student motivation and student cognitive outcomes will have profound significance in each of the three areas.

4.4. Contextual issues

What still remains underexplored is the myriad of teacher motivation issues within a particular context. As it has been indicated, highly ranked motivating factors for teachers in developed countries could be significantly different for teachers in developing countries (Chivore, 1988; Yong, 1995), the fact that teachers in developing countries are more extrinsically motivated could well demonstrate the effect of social and economic factors on teacher motivation. Similarly, teachers may be motivated or demotivated by different factors within different cultures. For example, key influencing factors of teacher motivation in Chinese culture which attaches great importance to education and respect for teachers might be quite different from factors in western cultures in which individual attributions are highly valued. Though researchers' interest in Confucian Heritage Culture has been increasing these years, the exploration of the influence of Chinese culture on teacher motivation revealed a scarcity. Therefore, further studies across different sociocultural contexts are highly expected.

In addition, the matter of discipline or subject is another important consideration for teacher motivation research. Although noticeable differences between samples from different countries have already been drawn, perspectives of discipline or subject difference have been overlooked. Possible reasons may be the less representativeness of teachers in specific discipline concerning professional complexity and diversity, especially at university level. A case in point is the repeatedly confirmed list of clearly constructed reasons for pre-service teachers' career choice across different countries. Possible reasons may be the choice of sample and insufficient consideration of discipline differences. Considering great differences existing among teachers at various educational levels across different majors when factors of professional demands, professional ability and perceptions of various aspects of the profession are taken into account, concerns of major difference and the motivation to teach at different levels should be taken into consideration for demographic characteristics in explaining the pre-service teacher's motivation to teach. Additionally, characteristics of

particular discipline may constitute significant uniqueness in contextual factors to determine teacher motivation, which in turn, influence both teaching and learning outcomes. Therefore, new research agenda concerning motivation of teacher of particular discipline and the impact of disciplinary differences and the uniqueness on teacher motivation are invited.

5. Concluding remarks

Theoretically, this study facilitates the reconceptualization of teacher motivation by posing a comprehensive review of studies on teacher motivation conducted from diversified theoretical perspectives. It contributes to the current knowledge of teacher motivation research by identifying five main related research areas: influencing factors of teacher motivation, teacher motivation and teaching effectiveness, relationship between teacher motivation and student motivation, teacher motivation research across different disciplines and the instruments for assessing teacher motivation. Critiques of the existing literature in teacher motivation enrich the current understandings of teacher motivation and indicate the possible directions for future research. The enriched research interests from pre-service teachers' motivation to teach, to in-service teachers' motivation to remain teaching, and the enlarged research fields from identifying influencing factors to exploring its associations with various antecedent or consequent variables, are stimulating for extending the existing theoretical perspectives, research scope, methodology and instruments in future study. Practically, this study will have some implications for enhancing the level of teacher motivation. As teacher motivation has been identified as a key determinant for student motivation and teaching effectiveness, it is particularly useful for educational administrators as well as teachers to formulate practical strategies to stimulate students' motivation to learn and improve the outcomes of both teaching and learning.

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