

## The antecedents of in-service teacher burnout: A study of their occupational health and perception

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### Abstract

As Macau is one of the cities with high students' grade retention rate, the local teachers, therefore, have a considerably heavy workload to prepare the students to achieve the requirements of a particular academic setting. This study examined 173 full-time in-service secondary school teachers at Macau via questionnaire. The result shows in-service teachers feel emotional exhaustion in teaching students. However, teachers perceive their competence in teaching and would not depersonalize the students as an object. Moreover, significant variations are found among the three factors of burnout for teachers. That is, teachers experience higher emotional exhaustion than reduced personal accomplishment and depersonalisation. By reviewing previous studies about teachers' burnout as compared to the present findings, an upward trend of teachers' emotional exhaustion is suggested. The increase of emotional exhausting could be related to the launch of new policies in terms of enhancing the professionalism of teachers. Needs for achievement, which is negatively correlated to burnout, is found to be a powerful predictor. Organisational socialisation in terms of training, understanding, co-worker support, and future prospects are discovered to have negative correlations to burnout. Particularly, understanding and future prospect are found to be the negative predictors of reduced personal accomplishment and emotional exhaustion, respectively. The results and implications are interpreted for teachers' professional development and school administration.

Keywords : in-service teacher, burnout, organisation socialisation, needs for achievement, implications

## Introduction

Macau, known as the ‘Monte Carlo of the Orient’, is famous for its gaming and hospitality industry due to its rapid expansion. The industry has become more prominent ever since the gambling concessions shifted from an over-65-year-old monopoly on casino operation to an open market in 2002 (Healy, 2004). In addition, as Macau is one of the premier gaming destinations in the world, the gross gaming revenue exceeds the Las Vegas Strip in some reported occasions, such strong revenue generated from the industry enables Macau to be the largest gaming city in the world (Macau Gaming Inspection and Coordination Bureau, n.d.).

Therefore, some positive and negative social phenomena have been reflected in the society since 2002. The high demand of human resources in the gaming industry impacts the local unemployment rate. The rate remains at a surprisingly low level of 1.9% (Macau Statistics and Census Service, 2016). However, the job changing rate has gradually increased from 9.5% to 12.1% (Macau Statistics and Census Service, 2016), suggesting that there is an imbalance of human labour among the industries at Macau. Also, as Sharma (1997) suggested, it was difficult for employers in recruiting and retaining qualified workers when the unemployment rate of a city was under 3%. Cities like Macau are encountering low unemployment rate but high job changing rates, suggesting that there are challenges to retain their employees in different industries at Macau (see Kuok, 2017; Kuok & Taormina, 2015).

## Challenges of education in Macau

Moreover, this challenge is not only found in gaming and relevant industries, it also affects the ways of education and concepts of the new generation. Interestingly, there are voices from society and schools addressing the ways for teaching youth in order to help them to develop their competence and better preparation in life (Luk, Chan, Cheong, & Ko, 2010), but there is a paucity of concerns on the educators who are responsible to teach the new generation. A large proportion of Macau citizens know that the local economy is closely linked to the gaming industry, and they perceive there will be lots of job opportunities from the gaming industry. Educators in Macau experience difficulties and challenges of educating the youth because they need to educate the new generations who bear ideas for working in the gaming industry. That is, the gaming industry provides more opportunities and benefits that they can see at the moment, but outweigh the possible disadvantages in the long term. Thus, educators may experience a form of ‘cognitive dissonance’—any incompatibility one might perceive between two attitudes or between behavior and attitudes (Festinger, 1957), e.g., how could the teachers convince their students not to place a high value on money when the society emphasizes the benefits of working in the gaming industry.

Although the salary between teachers and workers at casinos are not addressed by studies and statistics from local statistical department of government and experts, some

local newspapers actually report that there are a lot of teachers who have resigned and shifted to work at casinos for the past 10 years ("It is a torment," 2015).

Surprisingly, the students' high grade retention is another critical issue that the secondary school teachers have been facing in Macau, which has one of the highest grade retention rates among the Organisation for Economic Co-operation and Development (OECD) countries (Ikeda & Garcia, 2014). By comparing the grade retention rate among the non-tertiary education, students in secondary school have the highest grade retention rate in Macau, 23%, that is, in every four students, one of them has been retained. Moreover, around 56% of students in Macau have not been retained between primary to secondary school. It revealed that nearly half of the students in Macau have been retained, and the majority of them are from secondary school. Therefore, teaching in secondary school has become more complicated and stressful, and teachers are more prone to experience burnout under such a teaching environment.

## New policy of education

In 2012, the Education and Youth Affairs Bureau of Macau launched the *System Framework for Private School Teaching Staff of Non-tertiary Education* to enhance the professional quality and to strengthen job security for private school teachers (Macau Education and Youth Affairs Bureau, 2016).

An important issue for this policy is to provide a guideline for the number of periods per week for teachers of different education levels. According to the preliminary information from teachers, the policy in theory attempts to reduce the over-loaded phenomenon of schoolwork. However, apart from actual classroom teaching, teachers indeed allocate more time on the preparation work. With the preparation of annual plans, course material preparation, in-class activities arrangement, homework correction, student consultation, parent meetings, teaching reflections and report writing, etc., teachers run after deadlines and easily get overwhelmed.

Also, by following the trend of other countries in the Asia-Pacific region, the Macau government is committed to equating schooling with equality of opportunity and the promotion of social justice (Macau Printing Bureau, 2016). The enactment of such a significant educational reform involves many parties, including those who will play a central role, i.e., the teachers.

Among non-tertiary education, secondary school teachers in Macau are encountering an immense workload. As secondary school teachers do not only focus on the students' academic needs, but also address the emotional and motivational needs of these adolescents (Hougen, 2015), secondary school teachers need more attention and resources to interact with adolescents. In the life-span development of human being, the cognitive development of adolescents is in the stage of formal operation (Piaget, 1963), i.e., they can understand abstract concepts and start to use their own way of thinking. Therefore, teachers who interact with this group of adolescents are stressed and have even more to handle than other levels of education. In addition, in this era of electronic devices, students can gain information (both good and bad) via the Internet easily, and generate great

challenges for secondary school teachers to fulfil their responsibilities and roles.

However, after reviewing the literature of Macau teachers' feelings at work, there is not any relevant study about teachers' feelings after the policy of *System Framework for Private School Teaching Staff of Non-tertiary Education* has launched. Its aim is to enhance the professional quality and to strengthen job security for private school teachers (Macau Education and Youth Affairs Bureau, 2016). On the other hand, for those studies about teachers' feelings before the policy has launched, they either focused on how stress or demographics are related to burnout (Cheuk & Wong, 1995; Luk et al., 2010). Therefore, the present study aims to: 1) find out the level of burnout among in-service teachers under this new policy, and 2) discover the antecedents of in-service teachers' burnout.

## Burnout

Freudenberger (1974) first mentions the term burnout among human service workers for describing a state of fatigue and frustration arisen from unrealistic, excessive demands on personal resources, which lead to physical and mental exhaustion. However, it lacked a commonly accepted definition until Maslach and Jackson (1981) created the Maslach Burnout Inventory (MBI) in which burnout is "a syndrome of emotional exhaustion, depersonalisation, and reduced personal accomplishment that can occur among individuals who work with people in some capacity" (Maslach, Jackson, & Leiter, 1996, p. 4). Therefore, it has been used in work settings. Moreover, Lee and Ashforth's (1993) study confirmed this three-dimensional (emotional exhaustion, depersonalization, and reduced personal accomplishment) model of burnout through factor analysis.

As noted in Maslach's (1982) definition, emotional exhaustion refers to a depletion of emotional resources. Emotionally exhausted employees feel that they have no suitable resources as well as can not give any more to their job, i.e, the energy that they originally possess for their work has been used up, do not have further resources or rooms for performing their work (Maslach, 1982). Also, it "prompts actions to distance oneself emotionally and cognitively from one's work, presumably as a way to cope with the work overload" (Maslach, Schaufeli, & Leiter, 2001, p. 403).

Depersonalisation (known as cynicism) describes a process in which employees develop callous or uncaring attitudes toward their job, their performance as well as work-related demands, namely, customers, clients, and co-workers (Maslach, 1982). It is "an attempt to put distance between oneself and service recipients by actively ignoring the qualities that make them unique and engaging people" (Maslach et al., 2001, p. 403). They act this way as they perceive the demands from work are more manageable when they downgrade the importance of demands or treat them as objects, they do not treat them as human being or the same level as oneself.

Reduced personal accomplishment (known as lack of personal inefficacy) refers to diminished perceptions of ability on the job. Employees perceive not being able to perform well as how they do originally (Maslach, 1982). Further, as Maslach et al. (2001) mention "exhaustion or depersonalisation interferes with effectiveness: It is difficult to gain a sense of accomplishment when feeling exhausted or when helping people toward whom one is indifferent" (p. 403). Reduced personal accomplishment seems to arise from a lack of

relevant resources, while emotional exhaustion and depersonalisation (cynicism) are generated in the presence of work overload and social conflict (Maslach et al., 2001).

Although the Maslach Burnout Inventory (MBI) is applied in most of all studies concerning burnout (Shirom, 2003), there are some other established burnout concepts and questionnaires, namely, the Copenhagen Burnout Inventory (CBI; see Kristensen, Borritz, Villadsen, & Christensen, 2005), the Oldenburg Burnout Inventory (OLBI, see Demerouti, Bakker, Vardakou, & Kantas, 2003), the Shirom Melamed Burnout Measure (SMBM; see Shirom & Melamed, 2006), Gillespie-Numerof Burnout Inventory (GNBI; see Gillespie, 1984) or the Tedium Measure (TM; see Malakh-Pines, Aronson, & Kafry, 1981).

## The job demand-resource model of burnout

As stated by Demerouti, Bakker, Nachreiner, and Schaufeli (2001), the job demands-resources model proposes that there are two types of working conditions, job demands and job resources, that are differentially related to specific outcomes (e.g., burnout), particularly for the type of occupation with high job demands but limited resources.

Teachers and workers in the front line service are occupations that involve high-intensity interpersonal contact with people, and they are prone to experience a disappointment for stressful condition at work (e.g., due to job demands), which can be described as job burnout (Malanowski & Wood, 1984). Thus, when teachers are in the state of burnout, they experience emotional exhaustion, i.e., the draining of emotional resources due to workload; depersonalisation, i.e., a negative and callous attitude towards one's job and downgrade the work-related demands, like treating students as objects; and reduced personal accomplishment, i.e., the tendency to evaluate one's work (including teaching, preparation, and consultation) negatively.

Previous studies emphasise to study the relationship between job stress and burnout for teachers in Chinese society (Cheuk & Wong, 1995; Zhang & Zhu, 2007) or to discover the relationships between teachers' demographics and burnout (Luk et al., 2010). That is, these studies intend to study the impact of teachers' personal issues on burnout. However, there is not any study to discover the impact of issues related to the level of organisation and society (i.e., job resources) on teachers' burnout in Chinese society. These studies may provide a clear picture to the teachers, schools, society, and even government for further understanding the latest situation of teaching profession.

Although variables at the organisational level have not been studied for teachers' burnout, previous studies suggest organisational variables relate to the frontline service workers' burnout in Chinese society, e.g., organisation socialisation (Taormina & Law, 2000) and turnover intention (Taormina & Kuok, 2009), suggesting the generalisation of testing organisational behaviours on teachers' burnout in Macau.

## Organisation socialisation

The socialisation process explains how a well-trained and well-integrated workforce is essential to the efficient functioning of any organisation. Organisational socialisation has four domains, they are: 1) training, 2) understanding, 3) co-worker support, and 4) future prospects (Taormina, 1997).

*Training.* Taormina (1997) stated that training is “the act, process, or method by which one acquires any type of functional skill or ability that is required to perform a specific job” (p. 30). That is, to provide organisational instruction for upgrading the employee’s job skills. As this study focuses on teachers, training here refers to the instruction of secondary school designed to upgrade the teachers’ job skills. Insufficiency of training weakens the performance of the job, an employee cannot be expected to adequately and efficiently perform the work that he or she is hired to do when one is without training in the appropriate job-relevant skills (Taormina, 1998). This view is supported by Heifetz and Bersani (1983), burnout is produced by both excessive environmental demands and unsatisfactory training (Taormina & Law, 2000).

With sufficient training, teachers can enhance their competence and satisfy in teaching. Teachers have the positive perceptions of the training received enhance their self-confidence and reduce teachers’ stress (Nordhaug, 1989), as a result, chances of experience emotional exhaustion decreases. Thus, (H1) the more positive evaluations teachers have of the training provided by their schools, a) the less emotional exhaustion; b) the less depersonalisation; c) the less reduced personal accomplishment they experience.

*Understanding.* It refers to “the extent to which employees believe they can comprehend their job roles, know the goals and values of the company, and apply knowledge about the job” (Taormina, 1997, p. 34). That is, the extent to which management shares their company’s goals and values their employee strengthens employee understanding of working environment. As this study focuses on teachers, understanding here is the degree to which teachers know their work roles (e.g., educate students) and how their schools function. Teachers, who know how to perform tasks and how their school function (i.e. good understanding of job roles), have higher levels of self-assurance and confidence (Taormina & Law, 2000). Therefore, their understanding guides them to commit fewer mistakes, they perceive lower levels of burnout as the chance of experiencing stress decreases. Thus, (H2) the better jobs understanding the teachers have, a) the less emotional exhaustion; b) the less depersonalisation; c) the less reduced personal accomplishment they experience.

*Co-worker support.* It refers to “the emotional or instrumental sustenance that is provided by other employees with the objective of alleviating worry or doubt” (Taormina 1997, p. 37). Favourable social interaction with workmates is critical to an employee for socialising in an organisation successfully (Taormina, 1998). In a social group, if a worker perceives one is being accepted by other co-workers, such kind of support can lead the workers (teachers) to socialise in the workplaces (schools) more successfully (Taormina, 1994). In addition, social support from supervisors is a key variable to predict the workers’ burnout (Jackson, Schwab, & Schuler, 1986). Supportive relationships can ease stressful situation which reduces the chance of experiencing burnout. (Peterson, Halsey, Albrecht, & McGough, 1995). Moreover, co-worker support assists employees (teachers) to possess

a sense of community that can reduce burnout (Taormina & Law, 2000). This idea is supported by the study of Golembiewski, Boudreau, Sun, and Luo (1998), high sense of community is related to less emotional exhaustion, less depersonalisation, and more personal accomplishment. Consequently, (H3) the more the co-worker support teachers receive, a) the less emotional exhaustion; b) the less depersonalisation; c) the less reduced personal accomplishment they experience.

*Future prospects.* It refers to “the extent to which an employee anticipates having a rewarding future with a company in terms of the acceptability of one’s recognition, advancement, benefits, and salary increments” (Taormina, 1997, p. 40). As this study is about teachers at schools, future prospects can be referred as the extent to which a teacher anticipates having a rewarding future as they expect with a school in terms of the acceptability of one’s future promotions, benefits, and salary increments. Lack of the above rewards for their work leads them to possess less satisfaction about their job and career (Sweeney, McFarlan, & Inderrieden, 1990). Employees result in considering the idea of preferring to be in a different job (Jackson et al., 1986), and to form negative feelings about one’s job (Gaines & Jermier, 1983). Conceptually, teachers with negative view about their future prospects are more likely to have unstable emotion and stress that lead to job burnout. Hence, (H4) the more career opportunities teachers can expect in future, a) the less emotional exhaustion; b) the less depersonalisation; c) the less reduced personal accomplishment they experience.

Beside the organisational variables, this study suggests a personality variable for testing the relationship to teachers’ burnout. That is, needs for achievement, an internal motive to strive for goals (McClelland, 1961). Teacher is stressful and easily to experience burnout (Cheuk & Wong, 1995; Zhang & Zhu, 2007). However, some teachers are willing to stay at the professional in education even a severe atmosphere of working at casinos with high salary and opportunities is emphasized by Macau citizens, suggesting teachers may not gain the sense of competence through high salary, rather, they have a will to educate students and are glad to see their development, not limited to knowledge, but also the emotional, cognitive, behavioural aspects (Knowles & Brown, 2000).

### *Needs of achievement*

Needs of achievement has been regarded as an internal motive, and people who possess this attribute are thought to work hard to achieve their goals (McClelland, 1961). People with high needs for achievement require freedom in doing their work, desire opportunities for job promotion (Jenkins, 1987). Also, high needs for achievement workers have a strong desire to become superior performers and they are personally responsible for accomplishing goals (Harrell & Stahl, 1984). In addition, when people encounter failure in jobs, this incentive can help them to cope with problematic situation, e.g., burnout. Like teachers with high needs for achievement, they have strong sense to educate students to become holistic people even they encounter obstacles in educating their students (e.g., students’ poor academic performance, poor conduct, and misbehaviours). Therefore, needs for achievement is a self-attributed motive, and people who possess this attribute work hard to achieve their goals and do their best very often (Thrash & Elliot,

2002). Therefore, they are less likely to experience burnout. Thus, (H5) the more the need of achievement the teachers have, a) the less emotional exhaustion; b) the less depersonalisation; c) the less reduced personal accomplishment they experience.

### *Time spending on workload*

Workload consists of quantitative and qualitative demands in a working situation, such as working hard, working under time pressure, and strenuous work (i.e., job demands), therefore, higher workload contributes to higher stress (Janssen, Jonge, & Bakker, 1999). That is, there is a positive relationship between workload and emotional exhaustion (Lee & Ashforth, 1996).

With reference to Macau, there are some studies about the relationship between stress or workload and burnout among teachers, their results confirmed that teachers at Macau was overloaded (Cheuk & Wong, 1995). Surprisingly, the workload of Macau teachers was more than double for the teachers in other cities in China (Ng, 2002). In 'System Framework for Private School Teaching Staff of Non-tertiary Education', it provides the guideline about the number of teaching periods across different education levels within non-tertiary education. This policy is a good reference point for schools to follow and to try to shape a better teaching environment for both teachers and students. Also, the original 25-28 periods per week among junior secondary teachers is no longer existed. However, time spent on teaching students is only a small portion of the work, they are in fact spending a great amount of time for preparing many miscellaneous stuffs related to teaching, namely, preparing course materials, homework corrections, students consultation, meeting parents, and administrative works brought by the execution of the 'framework'. All these are not counted as the criteria of this new policy.

Although qualitative approach is widely used to measure workload, it is a good way to measure workload by quantitative approach in further studies (Jackson et al., 1986). In the present study, workload refers to the total amount of time teachers spend on these miscellaneous stuffs related to teaching except lecturing. Thus, (H6) the more time teachers spend for workload except lecturing, a) the more emotional exhaustion; b) the more depersonalisation; c) the more reduced personal accomplishment they experience.

## Method

### Respondents

The respondents were 173 (79 male, 94 female) full-time teachers from secondary schools in Macau. Their average age was 31.01 years (SD = 9.04). By the highest education level achieved, 80.3% obtained only the bachelor's degree, 9.3% obtained both bachelor's degree and master's degree, and 10.4% obtained the bachelor's degree with additional years for studying in education. With regard to marital status, 114 (65.9%) were single, 59



(34.1%) were married. With the specialised subject that the teachers were responsible, 47 (27.2%) were English teachers, 26 (15%) were Chinese teachers, 10 (5.8%) were Social Science teachers, 20 (11.6%) were Science teachers, 37 (21.4%) were Mathematics teachers, and 33 (19.1%) were teachers who taught in other areas like Computer, Religion, Art, and Physical Education.

## Measures

*Burnout.* This variable was assessed using the Maslach Burnout Inventory (MBI) (Maslach & Jackson, 1981). The concept of burnout in this inventory included three dimensions: nine items scale for Emotional Exhaustion (e.g., 'I feel emotionally drained by my work.');

eight items scale for Reduced Personal Accomplishment (e.g., 'I can easily understand how my students feel about things.');

five items scale for Depersonalisation (e.g., 'I worry that this job is hardening me emotionally.'). This MBI has been translated in Chinese with back-to-back translation and showed excellent internal consistency in the studies about human services providers within Chinese societies (Kuok & Taormina, 2017; Taormina & Kuok, 2009; Taormina & Law, 2000). The items were scored on a 7-point Likert scale (1 = strongly disagree to 7 = strongly agree). The original reliabilities of the three dimensions were .90, .71, and .79, respectively. The respective reliabilities for the present study were .85, .85, and .81.

*Organisational socialisation.* This variable was assessed using Taormina's (2004) Organisational Socialisation Inventory (OSI). The OSI has four subscales, namely: training (e.g., 'The type of job training given by this school is highly effective.');

understanding (e.g., 'I know very well how to get things done in this school.');

co-worker support (e.g., 'Other workers have helped me on the job in various ways.');

and future prospects (e.g., 'There are many chances for a good career with this school.'). Each of the four subscales included five items, using a 7-point Likert scale (1 = strongly disagree to 7 = strongly agree). The original reliabilities of the four OSI domains were .76, .79, .81, and .76, respectively. The respective reliabilities for the present study were .94, .83, .86, and .83.

*Needs for achievement.* This variable was measured with five items by using the Steers and Braunstein's (1976) Manifest Needs Questionnaire (MNQ). The example item is 'I do my best work when my job assignments are fairly difficult.' The items were scored on a 7-point Likert scale (1 = strongly disagree to 7 = strongly agree). The original reliability of the MNQ was .66, respectively. The respective reliability for the present study was .76.

*Time spending on workload except lecturing.* The total amount of time spent for workload except lecturing in this study was measured in quantitative way that included: hours of preparing teaching materials per week; hours of correcting homework or tests per week; consultation hours with students during recess and after school per week; hours of meeting parents per week, advisor hours in administration and association per week.

## Procedure

As the target group of this study was full-time secondary school teachers, eight secondary schools were selected randomly from school list from Macau Education and Youth Affairs Bureau. In addition, this study was not conducted inside the schools that teachers were working to avoid any harm or pressure from the school. The data was obtained during lunch breaks and after finishing work in the late afternoon in order to let the respondents have more spare time to fill the questionnaire.

In accord with international guidelines for the ethical treatment of research participants, guidelines of the American Psychological Association were used. For every time when the teachers left the schools, the teachers were approached individually, asked for their consent to fill in a questionnaire with telling them the purpose of the study (i.e., to assess teachers' feeling about their work). The teachers were assured of their anonymity, announced that their given answers were strictly confidential, would only be aggregated with answers of many other people as using to analysis statistical in research. For those teachers who agreed to participate in the study, provided them a questionnaire and a pencil, then waited for them to complete the questionnaire. A total of 173 completed questionnaires were obtained. About 173/282 (61.3%) of teachers out of all the teachers who were asked to fill in the questionnaire agreed to participate in the study.

## Results

### Means comparisons among the three components of burnout

Although no demographic differences were hypothesised, t-tests and Anovas were conducted for the demographics on the burnout measures, there was no significant difference between male and female teachers, between single and married teachers, as well as among their degrees and teaching subject.

Furthermore, even though no hypotheses was made to find out the differences between the three factors of burnout, one of the objectives of this study is to investigate the burnout level of the in-service teachers after the new policy of *System Framework for Private School Teaching Staff of Non-tertiary Education* has launched. Interestingly, there were significant variations among the mean scores of each factor of burnout, emotional exhaustion ( $M=4.13$ ,  $SD=1.04$ ) was significantly higher than reduced personal accomplishment ( $M=3.09$ ,  $SD=0.75$ ),  $t(173) = 11.70$ ,  $p < .001$ , while reduced personal accomplishment was significantly higher than depersonalisation ( $M=2.42$ ,  $SD=1.01$ ),  $t(173) = 8.90$ ,  $p < .001$ .

## Test for multicollinearity

This was assessed by a 'tolerance' ( $1 - R^2$ ) test for each independent variable. According to Hair, Anderson, Tatham, and Black (1998, pp. 191–193), a tolerance value of less than 0.10 is problematic. This test uses all the independent variables (for the planned regressions), and regresses each one on all the other independent variables (excluding the demographics because they are naturally correlated). The tolerance values for the independent variables ranged from .51 to .98, all above the .10 cutoff, indicating that multicollinearity was not a concern.

## Test for common method bias

Common method bias is a statistical phenomenon in which statistical relationships may be based on the measurement method but not on the measure of the construct. This was assessed by factor analyzing all the variables in this study together, and using the 'maximum-likelihood' approach with a forced, one-factor solution (see Harman, 1960). If a ratio of the resultant Chi-square value over the degrees of freedom is less than 2.00:1, it indicates common-method bias (i.e., a single factor). For this study, the ratio was 5.14:1, suggesting that common-method bias was not a concern.

## Intercorrelations

Means, standard deviations, and intercorrelations were computed for all variables to test the hypothesised relationships between the antecedents and burnout.

The negative relationships among the four socialisation variables and the three factors of burnout were found as expected, but there were some variations on the significant level. Training was found to have significant negative correlations with emotional exhaustion ( $r = -.17, p < .05$ ) and depersonalisation ( $r = -.17, p < .05$ ), which supported H(1a) and H(1b), but not H(1c). Understanding was found to have significant negative correlations with depersonalisation ( $r = -.27, p < .001$ ) and reduced personal accomplishment ( $r = -.33, p < .001$ ), which supported H(2b) and H(2c), but not H(2a). Co-worker support was found to have significant negative correlations with depersonalisation ( $r = -.20, p < .05$ ) and reduced personal accomplishment ( $r = -.26, p < .005$ ), which supported H(3b) and H(3c), but not H(3a). Future prospect was found to have significant negative correlations with emotional exhaustion ( $r = -.23, p < .005$ ) and reduced personal accomplishment ( $r = -.23, p < .005$ ), which supported H(4a) and H(4c), but not H(4b).

Needs for achievement was found to have significant negative correlations with emotional exhaustion ( $r = -.23, p < .005$ ), depersonalisation ( $r = -.43, p < .001$ ), and reduced personal accomplishment ( $r = -.40, p < .001$ ), the results supported H(5a), H(5b), and H(5c).

H(6a) and H(6b) expected positive correlations between time spending on workload except lecturing and emotional exhaustion as well as depersonalisation, respectively, which were not supported. Moreover, an opposite result was found between time

spending on workload except lecturing and reduced personal accomplishment, i.e., a significant negative correlation ( $r = -.18$ ,  $p < .05$ ), which H(6c) was not supported. These results were shown in Table 1.

**Table 1**  
*Mean, Standard Deviation, and Intercorrelations among the Variables (N = 173)*

| Variable                                      | Mean  | SD    | 1       | 2        | 3        | 4       | 5       | 6       | 7     | 8     | 9  |
|---|-------|-------|---------|----------|----------|---------|---------|---------|-------|-------|----|
| 1. Emotional exhaustion                       | 4.13  | 1.04  | (.85)   |          |          |         |         |         |       |       |    |
| 2. Depersonalisation                          | 2.42  | 1.01  | .30**** | (.81)    |          |         |         |         |       |       |    |
| 3. Reduced personal accomplishment            | 3.09  | 0.75  | -.18*   | -.39**** | (.85)    |         |         |         |       |       |    |
| 4. Training                                   | 1.15  | 1.21  | -.17*   | -.17*    | -.13     | (.94)   |         |         |       |       |    |
| 5. Understanding                              | 5.14  | 0.88  | -.14    | -.27**** | -.33**** | .47**** | (.83)   |         |       |       |    |
| 6. Co-worker support                          | 5.03  | 0.97  | -.10    | -.20*    | -.26***  | .56**** | .38**** | (.86)   |       |       |    |
| 7. Future prospects                           | 4.05  | 1.09  | -.23*** | -.08     | -.23***  | .56**** | .33**** | .34**** | (.82) |       |    |
| 8. Needs of achievement                       | 5.35  | 0.68  | -.25*** | -.43**** | -.40**** | .19*    | .37**** | .29***  | .12   | (.76) |    |
| 9. Time spending on workload except lecturing | 28.33 | 15.58 | .08     | -.02     | -.18*    | .10     | .20**   | .07     | .06   | .17*  | -- |

*Note.* Burnout, socialisation, and needs of achievement values from 1 to 7. Reliabilities are in parentheses ( ) along the diagonal.

\* $p < .05$ . \*\* $p < .01$ . \*\*\* $p < .005$ . \*\*\*\* $p < .001$ .

## Regressions

To assess the strengths of the relationships among the variables, a series of linear regressions was conducted. By using emotional exhaustion, depersonalisation, and reduced personal accomplishment as criterion measures, with the predictors being organisation socialisation (training, understanding, co-worker support, and future prospects), needs for achievement and the time spending workload except lecturing entered as control variables.

For emotional exhaustion, the variables, needs for achievement and future prospect, were proved to be good negative predictors. Needs for achievement showed that  $\Delta R^2$  was .05 with a significant level  $p < .01$ . The second predictor was future prospect, it showed that  $\Delta R^2$  was .04 with a significant level  $p < .05$ . These variables combined and formed as powerful predictors ( $R^2 = .10$ ,  $F = 3.03$ ,  $p < .01$ ). These results were shown in Table 2.

Table 2  
*Results of Antecedents in Explaining Emotional Exhaustion*

| Criteria/Variables                         | Beta         | t-value        | $\Delta R^2$ | $R^2$ | F      | df    |
|--|--------------|----------------|--------------|-------|--------|-------|
| Emotional exhaustion                       |              |                |              | .10   | 3.03** | 6,165 |
| Training                                   | -.053        | -0.59          |              |       |        |       |
| Understanding                              | .005         | 0.05           |              |       |        |       |
| Co-worker support                          | .063         | 0.64*          |              |       |        |       |
| <b>Future prospects</b>                    | <b>-.177</b> | <b>-2.03*</b>  | <b>.04</b>   |       |        |       |
| <b>Needs for achievement</b>               | <b>-.328</b> | <b>-2.63**</b> | <b>.06</b>   |       |        |       |
| Time spending on workload except lecturing | .016         | 1.05           |              |       |        |       |

\* $p < .05$ . \*\* $p < .01$ . \*\*\* $p < .005$ . \*\*\*\* $p < .001$ .

For depersonalisation, only needs for achievement was proved to be powerful and negative predictor ( $R^2 = .18$ ,  $F = 7.43$ ,  $p < .001$ ). These results were shown in Table 3.

Table 3  
*Results of Antecedents in Explaining Depersonalisation*

| Criteria/Variables                         | Beta         | t-value          | $\Delta R^2$ | $R^2$ | F        | df    |
|--|--------------|------------------|--------------|-------|----------|-------|
| Depersonalisation                          |              |                  |              | .18   | 7.43**** | 6,165 |
| Training                                   | -.074        | -0.91            |              |       |          |       |
| Understanding                              | -.140        | -1.48            |              |       |          |       |
| Co-worker support                          | -.004        | -0.04            |              |       |          |       |
| Future prospects                           | .086         | 1.10             |              |       |          |       |
| <b>Needs for achievement</b>               | <b>-.560</b> | <b>-6.07****</b> | <b>.18</b>   |       |          |       |
| Time spending on workload except lecturing | .000         | 0.02             |              |       |          |       |

\* $p < .05$ . \*\* $p < .01$ . \*\*\* $p < .005$ . \*\*\*\* $p < .001$ .

For reduced personal accomplishment, the variables, needs for achievement, understanding, and future prospects were proved to be good negative predictors. The strongest predictor was needs for achievement: it showed that  $\Delta R^2$  was .16 with a significant level  $p < .001$ . The second predictor was understanding: it showed that  $\Delta R^2$  was .04 with a significant level  $p < .05$ . The third predictor was future prospects: it showed that  $\Delta R^2$  was .01 with a significant level  $p < .05$ . These variables combined and formed as powerful predictors ( $R^2 = .21$ ,  $F = 8.77$ ,  $p < .001$ ). These results were shown in Table 4.

Table 4

*Results of a Stepwise Model for Antecedents in Explaining Reduced Personal Accomplishment*

| Criteria/Variables                         | Beta         | t-value          | $\Delta R^2$ | $R^2$ | F        | df    |
|--|--------------|------------------|--------------|-------|----------|-------|
| Reduced personal accomplishment            |              |                  |              | .21   | 8.77**** | 6,165 |
| Training                                   | -.116        | -1.94            |              |       |          |       |
| <b>Understanding</b>                       | <b>-.171</b> | <b>-2.43*</b>    | <b>.04</b>   |       |          |       |
| Co-worker support                          | -.109        | -1.66            |              |       |          |       |
| <b>Future prospects</b>                    | <b>-.119</b> | <b>-2.06*</b>    | <b>.01</b>   |       |          |       |
| <b>Needs for achievement</b>               | <b>-.328</b> | <b>-4.01****</b> | <b>.16</b>   |       |          |       |
| Time spending on workload except lecturing | -.093        | -1.32            |              |       |          |       |

\* $p < .05$ . \*\* $p < .01$ . \*\*\* $p < .005$ . \*\*\*\* $p < .001$ .

## Discussion

### In-service teachers' burnout at Macau

In-service teachers are fairly emotionally exhausted, but they do not treat their students as objects and they perceive the ability of their job. Moreover, there are significant differences among the three factors of burnout, i.e., emotional exhaustion is higher than both reduced personal accomplishment and depersonalisation, while reduced personal accomplishment is higher than depersonalisation. Therefore, this result suggested that the secondary school teachers at Macau are prone to be emotionally exhausted. And the discrepancy between emotional exhaustion and depersonalization or reduced personal accomplishment further reveals emotional exhaustion is the critical variable of burnout among the teachers.

### Teachers remain emotionally exhausted

In addition, by comparing to a previous study of teachers' burnout that was conducted before the new policy launched (Luk et al., 2010), the result of this study showed that after the execution of the new policy, teachers' emotional exhaustion remains and is even in the trend of increasing, while the level of depersonalisation and reduced personal accomplishment remains in fair level, which is similar to the previous ones in Luk et al., (2010) study of teachers' burnout. Therefore, it suggests that more attention is needed for teachers' emotional exhaustion.

## Factors predicting in-service teachers' burnout

Needs for achievement is the strongest negative predictor of all three factors of burnout, namely, emotional exhaustion, depersonalisation, and reduced personal accomplishment, suggesting that teachers who possess an internal motive to work hard to achieve their goals (McClelland, 1961), i.e., they have the motive to educate the students and provide contribution to the next generation and are less likely to be emotionally exhausted, treat students as objects, and to perceive they cannot perform as they can be originally.

While future prospects is another negative predictor of emotional exhaustion, revealing that teachers who anticipate having a rewarding future in schools in terms of the acceptability of ones' recognition, advancement, benefits, and salary increments, they are less likely to be emotionally exhausted.

Another organisational socialisation variable, understanding is found to be a negative predictor of reduced personal accomplishment. Teachers who believe they know the goals and values of the school and can apply knowledge about the job, they are less likely to perceive their inability on their job.

Surprisingly, time spent on workload except lecturing does not have positive correlations to burnout as expected, rather it poses a significant negative correlation to reduced personal accomplishment. One of the possible explanations is the more time the teachers spend on preparing materials, correcting homework, and consulting students. As a result, the teachers perceive their readiness and capability of their job, i.e., a good teacher needs to be prepared cognitively and psychologically, and all this preparation consumes time.

## Conclusions and implications

Any policy implemented after a certain period of time, it is worth to consider an in-depth and multi-dimensional review for better sustainable development. The *System Framework for Private School Teaching Staff of Non-tertiary Education* has been carried out in 2012, it is necessary for educational department to review the generalisation of the new policy in the private schools. Getting feedback from this group of teachers (the actual practitioners) can be more helpful and direct as their comments are context-based from their everyday experience and classroom practice. In addition, as the teachers' understanding about their role at school or in the educational system is a predictor of their burnout, the educational department can maximize the teachers' understanding of the policy by sending specialists to the school for communicating the unexpected concerns and problems of this new policy with teachers, therefore enhancing the teachers' understanding of one's job under the new policy.

Furthermore, as future prospects is another predictor of teachers' burnout, the educational department can even empower the private schools with the flexibility to develop their own rules and standard for promotion to establish a standardised policy to

initiate their teachers to create their own career path. For schools, they need to establish a policy related to career development with clear criteria and their interest. Suggestion likes after certain years of teaching, teachers can be reviewed to see whether they have the potential for different career paths, like in Singapore, teachers can choose to be teacher for lecturing; specialist in curriculum and research; or school leader for administration, each with salary increments, as well as different assessment and training according to their potential are provided (Stewart, n.d.). As a result, the teacher can perceive their future at school, which helps to maintain a high quality teacher workforce. Then, they are less likely to experience emotional exhaustion and perceive higher competence at work.

In terms of a more personal aspect, needs for achievement has found to be a powerful negative predictor of burnout. Unlike other front line service workers, teaching is not just an occupation that solely provides service to 'customers/students'. Rather, teachers are educating students for developing their emotional, cognitive, and behavioural aspects (Knowles & Brown, 2000), suggesting that teachers who have a strong desire for achieving this mission are more likely to overcome the obstacles they encounter, and they are less likely to experience burnout.

A possible implication for school management is to develop a non-financial recognition program to increase teachers' needs for achievement (c.f., Rose, 1998; Silverman, 2004), i.e., a type of intangible rewards to the teachers. Like many higher education institutes, secondary schools can establish a teaching evaluation system, for which the students can provide feedback (both pros and cons) to the teachers. According to McClelland's (1961) motivation need theory, high achievers perform best when they perceive there is only 50% of probability for success and like to set goals that require stretching themselves a little. Thus, if there are ways for the teachers monitoring their performance and receiving suggestions, all these help to adjust their strategies in teaching. In return, they would be less emotionally exhausted as they are prepared for making changes.

All and all, policies established by the education department anticipate at facilitating a more constructive and supportive environment for teaching and in certain ways to balance their lecturing hours every week. Nonetheless, lecturing is just a small portion of teaching; teachers need to spend a great amount of time for 'non-lecturing' activities such as preparing course materials, homework corrections, student consultation, meeting parents, and administrative work. If the aim of establishing a 'framework' is to enhance the professional quality and to strengthen job security for private school teachers, the criteria of those 'non-lecturing' tasks for teachers should also be addressed. As a result, it helps to retain a group of competent teachers who are a boost to the next generation.

## Limitations and future studies

A limitation in this research is the targets are mainly secondary school teachers who are supposed to experience more challenges in terms of their responsibilities and high grade retention rate. Future studies can address on teachers' experience of burnout in different education levels.



Furthermore, this research has shown Macau teachers are at a high level of needs of achievement. Teaching is a high demanding profession, therefore by understanding factors that contribute to the level of needs of achievement in future literature will be able to retain more teachers in schools from changing to other professions.

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